RECEIVED AUGUST 15, 2008

LvLI
LIONVILLE LABORATORY INC.

Mr. Steve Trent
Fluor Hanford Inc.
825 Jadwin Ave.
Richland, WA 99352

Subject: Contract No. 630
Analytical Data Package

Dear Mr. Trent:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0806L291
SDG #	H3771
SAF #	F08-126
Date Received	6/13/08
# Samples	1
Matrix	SOIL
Volatiles	
Semivolatiles	
Pest/PCB	
DRO/GRO/KRO	
Herbicides	
GC Alcohol	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

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

METALS

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F08-126 H3771

DATE RECEIVED: 06/13/08 LVL LOT # :0806L291

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B1W0L9						
SILVER, TOTAL	001	S	08L0262	06/10/08	07/08/08	07/09/08
SILVER, TOTAL	001 REP	S	08L0262	06/10/08	07/08/08	07/09/08
SILVER, TOTAL	001 MS	S	08L0262	06/10/08	07/08/08	07/09/08
ARSENIC, TOTAL	001	S	08L0262	06/10/08	07/08/08	07/09/08
ARSENIC, TOTAL	001 REP	S	08L0262	06/10/08	07/08/08	07/09/08
ARSENIC, TOTAL	001 MS	S	08L0262	06/10/08	07/08/08	07/09/08
BARIUM, TOTAL	001	S	08L0262	06/10/08	07/08/08	07/09/08
BARIUM, TOTAL	001 REP	S	08L0262	06/10/08	07/08/08	07/09/08
BARIUM, TOTAL	001 MS	S	08L0262	06/10/08	07/08/08	07/09/08
BERYLLIUM, TOTAL	001	S	08L0262	06/10/08	07/08/08	07/09/08
BERYLLIUM, TOTAL	001 REP	S	08L0262	06/10/08	07/08/08	07/09/08
BERYLLIUM, TOTAL	001 MS	S	08L0262	06/10/08	07/08/08	07/09/08
BISMUTH, TOTAL	001	S	08L0268	06/10/08	07/14/08	07/15/08
BISMUTH, TOTAL REP	001 REP	S	08L0268	06/10/08	07/14/08	07/15/08
BISMUTH, TOTAL SPIKE	001 MS	S	08L0268	06/10/08	07/14/08	07/15/08
CADMIUM, TOTAL	001	S	08L0262	06/10/08	07/08/08	07/09/08
CADMIUM, TOTAL	001 REP	S	08L0262	06/10/08	07/08/08	07/09/08
CADMIUM, TOTAL	001 MS	S	08L0262	06/10/08	07/08/08	07/09/08
CHROMIUM, TOTAL	001	S	08L0262	06/10/08	07/08/08	07/09/08
CHROMIUM, TOTAL	001 REP	S	08L0262	06/10/08	07/08/08	07/09/08
CHROMIUM, TOTAL	001 MS	S	08L0262	06/10/08	07/08/08	07/09/08
COPPER, TOTAL	001	S	08L0262	06/10/08	07/08/08	07/14/08
COPPER, TOTAL	001 REP	S	08L0262	06/10/08	07/08/08	07/14/08
COPPER, TOTAL	001 MS	S	08L0262	06/10/08	07/08/08	07/14/08
MERCURY, TOTAL	001	S	08C0121	06/10/08	07/02/08	07/02/08
MERCURY, TOTAL	001 REP	S	08C0121	06/10/08	07/02/08	07/02/08
MERCURY, TOTAL	001 MS	S	08C0121	06/10/08	07/02/08	07/02/08
NICKEL, TOTAL	001	S	08L0262	06/10/08	07/08/08	07/09/08
NICKEL, TOTAL	001 REP	S	08L0262	06/10/08	07/08/08	07/09/08
NICKEL, TOTAL	001 MS	S	08L0262	06/10/08	07/08/08	07/09/08
LEAD, TOTAL	001	S	08L0262	06/10/08	07/08/08	07/09/08
LEAD, TOTAL	001 REP	S	08L0262	06/10/08	07/08/08	07/09/08
LEAD, TOTAL	001 MS	S	08L0262	06/10/08	07/08/08	07/09/08
ANTIMONY, TOTAL	001	S	08L0262	06/10/08	07/08/08	07/09/08
ANTIMONY, TOTAL	001 REP	S	08L0262	06/10/08	07/08/08	07/09/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F08-126 H3771

DATE RECEIVED: 06/13/08 LVL LOT # :0806L291

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ANTIMONY, TOTAL	001 MS	S	08L0262	06/10/08	07/08/08	07/09/08
SELENIUM, TOTAL	001	S	08L0262	06/10/08	07/08/08	07/09/08
SELENIUM, TOTAL	001 REP	S	08L0262	06/10/08	07/08/08	07/09/08
SELENIUM, TOTAL	001 MS	S	08L0262	06/10/08	07/08/08	07/09/08
THALLIUM, TOTAL	001	S	08L0262	06/10/08	07/08/08	07/09/08
THALLIUM, TOTAL	001 REP	S	08L0262	06/10/08	07/08/08	07/09/08
THALLIUM, TOTAL	001 MS	S	08L0262	06/10/08	07/08/08	07/09/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0262	N/A	07/08/08	07/10/08
SILVER, TOTAL	MB1	S	08L0262	N/A	07/08/08	07/09/08
ARSENIC LABORATORY	LC1 BS	S	08L0262	N/A	07/08/08	07/10/08
ARSENIC, TOTAL	MB1	S	08L0262	N/A	07/08/08	07/09/08
BARIUM LABORATORY	LC1 BS	S	08L0262	N/A	07/08/08	07/10/08
BARIUM, TOTAL	MB1	S	08L0262	N/A	07/08/08	07/09/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0262	N/A	07/08/08	07/10/08
BERYLLIUM, TOTAL	MB1	S	08L0262	N/A	07/08/08	07/09/08
BISMUTH, LCS	LC1 BS	S	08L0268	N/A	07/14/08	07/15/08
BISMUTH, TOTAL	MB1	S	08L0268	N/A	07/14/08	07/15/08
CADMIUM LABORATORY	LC1 BS	S	08L0262	N/A	07/08/08	07/10/08
CADMIUM, TOTAL	MB1	S	08L0262	N/A	07/08/08	07/09/08
CHROMIUM LABORATORY	LC1 BS	S	08L0262	N/A	07/08/08	07/10/08
CHROMIUM, TOTAL	MB1	S	08L0262	N/A	07/08/08	07/09/08
COPPER LABORATORY	LC1 BS	S	08L0262	N/A	07/08/08	07/14/08
COPPER, TOTAL	MB1	S	08L0262	N/A	07/08/08	07/14/08
MERCURY LABORATORY	LC1 BS	S	08C0121	N/A	07/02/08	07/02/08
MERCURY, TOTAL	MB1	S	08C0121	N/A	07/02/08	07/02/08
NICKEL LABORATORY	LC1 BS	S	08L0262	N/A	07/08/08	07/10/08
NICKEL, TOTAL	MB1	S	08L0262	N/A	07/08/08	07/09/08
LEAD LABORATORY	LC1 BS	S	08L0262	N/A	07/08/08	07/10/08
LEAD, TOTAL	MB1	S	08L0262	N/A	07/08/08	07/09/08
ANTIMONY LABORATORY	LC1 BS	S	08L0262	N/A	07/08/08	07/10/08
ANTIMONY, TOTAL	MB1	S	08L0262	N/A	07/08/08	07/09/08
SELENIUM LABORATORY	LC1 BS	S	08L0262	N/A	07/08/08	07/10/08
SELENIUM, TOTAL	MB1	S	08L0262	N/A	07/08/08	07/09/08
THALLIUM LABORATORY	LC1 BS	S	08L0262	N/A	07/08/08	07/10/08
THALLIUM, TOTAL	MB1	S	08L0262	N/A	07/08/08	07/09/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD F08-126
LVL#: 0806L291
SDG/SAF#: H3771/F08-126

W.O.#: 11343-606-001-9999-00
Date Received: 06-13-08

METALS CASE NARRATIVE

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvLI) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analysis of 1 soil sample.

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

   The sample was reported with a 2-fold dilution for ICP metals. The sample was rerun for Copper, without dilution, on a different instrument. The sample was reported with a 3-fold dilution for Mercury. The sample was redigested for Bismuth in prep batch: 08L0268, due to the Bismuth spike was inadvertently missed in the preparation of the matrix spike and the Laboratory Control Sample. The sample was run with a 3-fold dilution for Bismuth. All reruns and dilutions were due to sample matrix and/or high concentration levels.

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

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

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

6. All preparation/method blanks (MB) were within method criteria {less than the Limit of Quantitation (3-10X the LOD), sample result was greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

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

8. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.

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

9. The matrix spike (MS) recoveries for 2 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

10. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A serial dilution is performed for Mercury. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
B1W0L9	Antimony	200	101.0

11. The duplicate analysis for 1 analyte was outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

7/22/08
Date

alm/m06-291

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

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

Lot#: 08061291

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B		__200.7				__99
Antimony	✓6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	✓6010B		__200.7				__99
Beryllium	✓6010B		__200.7				__99
Bismuth	✓6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	✓6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	✓6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	__6010B		__200.7				__99
Mercury	__7470A [3]	✓__7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	✓6010B		__200.7				__99
Potassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	✓6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	✓6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	__6010B		__200.7				__99
Zinc	__6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

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

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 07/15/08

CLIENT: TNUHANFORD F08-126 H3771

LVL LOT #: 0806L291

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B1W0L9	Silver, Total	0.17 u	MG/KG	0.17	2.0
		Arsenic, Total	4.4	MG/KG	0.85	2.0
		Barium, Total	30.5	MG/KG	0.17	2.0
		Beryllium, Total	0.37	MG/KG	0.09	2.0
		Bismuth, Total	1.5 u	MG/KG	1.5	3.0
		Cadmium, Total	0.09 u	MG/KG	0.09	2.0
		Chromium, Total	12.3	MG/KG	0.34	2.0
		Copper, Total	9.8	MG/KG	0.20	1.0
		Mercury, Total	1.9	MG/KG	0.03	3.0
		Nickel, Total	10.6	MG/KG	0.34	2.0
		Lead, Total	5.7	MG/KG	0.51	2.0
		Antimony, Total	0.51 u	MG/KG	0.51	2.0
		Selenium, Total	1.0 u	MG/KG	1.0	2.0
		Thallium, Total	1.0 u	MG/KG	1.0	2.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 07/15/08

CLIENT: TNUHANFORD F08-126 H3771 LVL LOT #: 0806L291

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0262-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Arsenic, Total	0.50 u	MG/KG	0.50	1.0
		Barium, Total	0.10 u	MG/KG	0.10	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Chromium, Total	0.20 u	MG/KG	0.20	1.0
		Copper, Total	0.23 u	MG/KG	0.23	1.0
		Nickel, Total	0.20 u	MG/KG	0.20	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.30 u	MG/KG	0.30	1.0
		Selenium, Total	0.60 u	MG/KG	0.60	1.0
		Thallium, Total	0.60 u	MG/KG	0.60	1.0
BLANK1	08L0268-MB1	Bismuth, Total	0.60 u	MG/KG	0.60	1.0
BLANK1	08C0121-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 07/15/08

CLIENT: TNUHANFORD F08-126 H3771

LVL LOT #: 0806L291

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B1W0L9	Silver, Total	4.2	0.17u	4.2	100	2.0
		Arsenic, Total	168	4.4	167	98.1	2.0
		Barium, Total	190	30.5	167	95.9	2.0
		Beryllium, Total	4.5	0.37	4.2	98.3	2.0
		Bismuth, Total	406	1.5 u	407	99.8	3.0
		Cadmium, Total	4.3	0.09u	4.2	102.4	2.0
		Chromium, Total	28.3	12.3	16.7	95.8	2.0
		Copper, Total	28.9	9.8	20.8	91.8	1.0
		Mercury, Total	1.8	1.9	0.14	-63. *	3.0
		Nickel, Total	52.9	10.6	41.6	101.7	2.0
		Lead, Total	46.4	5.7	41.6	97.8	2.0
		Antimony, Total	22.1	0.51u	41.6	53.1	2.0
		Selenium, Total	143	1.0 u	167	85.7	2.0
		Thallium, Total	162	1.0 u	167	97.5	2.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 07/15/08

CLIENT: TNUHANFORD F08-126 H3771 LVL LOT #: 0806L291

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B1W0L9	Silver, Total	0.17u	0.17u	NC	2.0
		Arsenic, Total	4.4	3.5	22.8	2.0
		Barium, Total	30.5	31.8	4.2	2.0
		Beryllium, Total	0.37	0.37	0.027	2.0
		Bismuth, Total	1.5 u	1.7 u	NC	3.0
		Cadmium, Total	0.09u	0.11	NC	2.0
		Chromium, Total	12.3	12.2	0.82	2.0
		Copper, Total	9.8	9.3	5.2	1.0
		Mercury, Total	1.9	1.7	12.7	3.0
		Nickel, Total	10.6	10.6	0.00	2.0
		Lead, Total	5.7	4.8	17.1	2.0
		Antimony, Total	0.51u	0.50u	NC	2.0
		Selenium, Total	1.0 u	0.99u	NC	2.0
		Thallium, Total	1.0 u	0.99u	NC	2.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 07/15/08

CLIENT: TNUHANFORD F08-126 H3771 LVL LOT #: 0806L291

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0262-LC1	Silver, LCS	48.1	50.0	MG/KG	96.2
		Arsenic, LCS	954	1000	MG/KG	95.4
		Barium, LCS	476	500	MG/KG	95.1
		Beryllium, LCS	24.5	25.0	MG/KG	98.0
		Cadmium, LCS	24.2	25.0	MG/KG	96.8
		Chromium, LCS	48.8	50.0	MG/KG	97.6
		Copper, LCS	117	125	MG/KG	93.6
		Nickel, LCS	194	200	MG/KG	96.9
		Lead, LCS	242	250	MG/KG	96.9
		Antimony, LCS	283	300	MG/KG	94.4
		Selenium, LCS	940	1000	MG/KG	94.0
		Thallium, LCS	967	1000	MG/KG	96.7
LCS1	08L0268-LC1	Bismuth, LCS	486	500	MG/KG	97.2
LCS1	08C0121-LC1	Mercury, LCS	4.9	4.7	MG/KG	103.5

Lionville Laboratory Incorporated Logbook #: 458

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0262
Date/Time Initiated: 7/8/08 1330
Date/Time Completed: 7/8/08 1730
Analyst(s): MW
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: See Backlog

(Digested) / Undigested (circle one)
Balance #: B2
Balance Cal Verif: (Y) NA
Hot Plate Temp: 94°

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

TNW

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
0807L371-001		1.30gr	100 ml	<2	TO	coarse	dark brown soil	rocks	RAD
001R		1.25gr							
001S	1.0ml *	1.36gr							
002		1.40gr							
003		1.23gr					brown soil		
004		1.41gr							
0807L374-001		1.17gr					black soil		RAD
001R		1.34gr							
001S	1.0 ml *	1.27gr							
002		1.33gr					brown soil		
0806L291-001		1.22gr					light brown soil	N/A	
001R		1.26gr							
001S	1.0 ml	1.25gr							
08L0262-MB1		1.0gr					boiling chips		
LC1	1.0ml *	1.0gr							

MW 7/8/08

Spiking IDs:
MS #: 8100-04-01
02
03
6072-78-07
LCS #: 08
09
10
11

Reagent IDs:
HNO_3 E46025
HCL G05039
H_2O_2 G15A18
1:1 HNO_3 9789-081-03
1:1 HCL

File ID#: IC026201 ✓ IC026202 ✓ IC026203 ✓
LIMS Transfer: (Y) N
Data Review By/Date: 7/9/08

* and 0.5ml 6072-076-05 (Zr)

Lionville Laboratory Incorporated Logbook #: 458

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0268
Date/Time Initiated: 7/14/08 1440
Date/Time Completed: 1625
Analyst(s): TE 7/14/08 Sec buckley TEO
Matrix: (Soil) Water Other: oil
Instr. Type: AA (CP)
Parameters: Sec buckley

(Digested) / Undigested (circle one)
Balance #: B24
Balance Cal Verif: (Y) NA
Hot Plate Temp: 94°

Method: SW (circle)
3005A
3010A
3015
3020A
7060A (As/Se)
7760A (Ag)
(3050B)
3051
CLP ILMO3.0
ILMO4.0

DW 200.7 (1994)
200.9
3113B
MCAWW 200.7 (1982)
200 (AA)
206.2 (As/Se)
SM 3030C (NC)
Other

BSC/TNW

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
0807L423-001		1.04	100mL	NA	TOT	oil	cloudy	NA	NA
W1R		1.04							
W15	1.0	1.04							
002		1.03							
TE 7/14/08 003		1.04							
6 ~~004~~				TEO 7/14/08		NO SAMPLE - 004			
0807L291-001		1.21				Fine	BROWN		
W1R		1.11							
W15	1.0 *	1.28							
08L0268-MB1		1.0		LZ		NA	clear/BC		
LC1	1.0*	1.0							

TEO 7/14/08

BC = Boiling chips

Spiking IDs:
MS #: 8100-004-01
02
03
6072-78-07
LCS #: 08
09
10
11

Reagent IDs:
HNO_3 E46025
HCL G05039
H_2O_2 G15A18
1:1 HNO_3 9789-081-03
1:1 HCL

File ID#: IC026801
IC026802
LIMS Transfer: (Y) N updated

Data Review By/Date:
RMP, 07/15/08

* Also spiked w/ 0.5 mL Bi 6072-76-06

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 455

Analyst: TEB
Date 7/2/08
Start Time/Temp: 1400 | 92°
End Time/Temp: 1630 | 94°

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

Prep Batch: 08C0121
Worksheet: HG070201
SOP No. ME-HgCVAA, Rev. 02

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

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

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	P18			10mL	50mL	
0.2 µg/L	P5	0.100				
1.0	B4	0.500				
2.0	8	1.000				
5.0	PC	2.500				
10.0	500	5.000				
ICV	CB	0.125	2.5			
CCV	PF	0.250	5.0			
ICB/CCB	857					
MB1	AHA			0.30		PBS121 100.00
LC1	JC	*	*	0.30		LCS121
0806L323-001	40			0.32		R
001R	711			0.33		
001S	A	0.050	10.0	0.40		
002	816			0.33		
003	B32			0.36		
0806L291-001	R			0.37		96.02
001R	C48			0.33		
001S	C4D	0.500	1.0	0.37		
0806L350-001	GR			0.35		
001R	A901			0.34		
001S	A9	0.500	1.0	0.35		
0806L371-001	5T			0.34		R
001R	11A			0.33		
001S	PA	0.500	1.0	0.34		
002	BB			0.42		
003	BLV			0.35		

A

Standard:	ID	Prep Date/Time
ICAL/MS	RI 6072-78-14B	7/2/08 1045
ICV/CCV/LCS	456072-78-15A	

Reviewed By/Date: [signature] 7/9/08

see book # 9368 for std traceability information

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

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

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 455

Analyst: CEN
Date 7/2/08
Start Time/Temp:
End Time/Temp: See page 001

Instrument ID H63.1
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 080021
Worksheet: HG070201
SOP No. ME-HgCVAA, Rev. 02

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

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

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
0806L374004	508			0.35	50mL	

RECEIVED 7/2/08
CEN 7/2/08

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	See page 001	

Reviewed By/Date: [signature] 7/9/08

see book # 9368 for std traceability information

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

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

ME-HgCVAA-Prep1007

Page #:

000000015

Lionville Laboratory Use Only
0806 L291

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: INEL HANFORD SAFM F08-126
Est. Final Proj. Sampling Date:
Project#: 11343-606-001-9999-00
Project Contact/Phone#:
Lionville Laboratory Project Manager: O-JOHNSON
SW846 Del: STD TAT: 30 days
Date Rec'd: 6-13-08 Date Due: 7-13-08

		A	B	C
Refrigerator #		2	2	2
#/Type Container	Liquid / Solid	16	16	16
Volume		120	120	120
Preservatives				
ANALYSES REQUESTED	ORGANIC: VOA, BNA, Pest/PCB, Herb	INORG: Metal	INORG: CN	IC Anions / Hg / Cyanide
Lionville Laboratory Use Only		Met①	IC①	ICRG

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Met①	IC①	ICRG
001	B1W0L9	✓	✓	Soil	6/10/08	1300	X	X	X

Special Instructions:
Met① = RCRA + Sb, Be, Bi, Cu, Ni, Tl
IC① = 6/13 Br, Cl, Fl, NO2, NO3, PO4, SO4

Special Instructions:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	6/13/08	0955

Relinquished by	Received by	Date	Time

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

000000016

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F08-126-062

COLLECTOR: NCO SAMPLER PFISTER	COMPANY CONTACT: TRENT, SJ	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: 8N	DATA TURNAROUND: 45 Days / 45 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: C6551, I-000-PUSH	PROJECT DESIGNATION: 216-A-5 Crib Characterization Sampling and Analysis - Soil	SAF NO.: F08-126	
ICE CHEST NO.	FIELD LOGBOOK NO.	ACTUAL SAMPLE DEPTH: 60.8'-61.6'	COA: 123124ES10
METHOD OF SHIPMENT: FEDERAL EXPRESS	SHIPPED TO: Lionville Laboratory Incorporated	OFFSITE PROPERTY NO.: SEE PTR	BILL OF LADING/AIR BILL NO.: SEE PTR 7919-1571-8631

MATRIX*: =Air, L=Drum Liquids, S=Drum Solids, =Liquid, =Oil, =Soil, E=Sediment, =Tissue, =Vegitation, W=Water, WI=Wipe, =Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
Radioactive Tie To: B1W0L8

PRESERVATION	None	Cool~4C	Cool~4C
TYPE OF CONTAINER	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	120mL	120mL	120mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
1W0L9	SOIL	6-10-08	13:00	✓	✓	✓
				024875		→
			Lot#	~~028791~~ APP 6/4/08		→

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J. Pfister	6-10-08 1345	A2 SITE FRIG A-5	6-10-08 1345
A2 SITE FRIG A5	6-12-8 1000	D Connolly	6-12-8 1000
D Connolly	6-12-8 1330	Fed Ex	
Fed Ex	6-13-08 0955		6-13-08 0955

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** Analytical batch QC must be run on a sample associated with this SAF.
(1)ICP Metals - 6010B (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver} ICP Metals - 6010B (Supertrace Add-On) {Antimony, Beryllium, Bismuth, Copper, Nickel, Thallium} Mercury - 7471 - (CV);
(2)IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

000000017

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Date: 6/13/08

Project/SAF/SOW/Release #: F08-126

LvLI Batch #: 08061291

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7919 1571 8631
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 5-9°	°C	Cooler # 1
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.

INORGANICS

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F08-126 H3771

DATE RECEIVED: 06/13/08 LVL LOT # :0806L291

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B1W0L9						
% SOLIDS	001	S	08L%S058	06/10/08	06/16/08	06/17/08
% SOLIDS	001 REP	S	08L%S058	06/10/08	06/16/08	06/17/08
CHLORIDE BY IC	001	S	08LICR43	06/10/08	06/18/08	06/18/08
CHLORIDE BY IC	001 REP	S	08LICR43	06/10/08	06/18/08	06/18/08
CHLORIDE BY IC	001 MS	S	08LICR43	06/10/08	06/18/08	06/18/08
FLUORIDE BY IC	001	S	08LICT43	06/10/08	06/18/08	06/18/08
FLUORIDE BY IC	001 REP	S	08LICT43	06/10/08	06/18/08	06/18/08
FLUORIDE BY IC	001 MS	S	08LICT43	06/10/08	06/18/08	06/18/08
NITRITE BY IC	001	S	08LICT43	06/10/08	06/18/08	06/18/08
NITRITE BY IC	001 REP	S	08LICT43	06/10/08	06/18/08	06/18/08
NITRITE BY IC	001 MS	S	08LICT43	06/10/08	06/18/08	06/18/08
NITRATE BY IC	001	S	08LICT43	06/10/08	06/18/08	06/18/08
NITRATE BY IC	001 REP	S	08LICT43	06/10/08	06/18/08	06/18/08
NITRATE BY IC	001 MS	S	08LICT43	06/10/08	06/18/08	06/18/08
PHOSPHATE BY IC	001	S	08LICR43	06/10/08	06/18/08	06/18/08
PHOSPHATE BY IC	001 REP	S	08LICR43	06/10/08	06/18/08	06/18/08
PHOSPHATE BY IC	001 MS	S	08LICR43	06/10/08	06/18/08	06/18/08
CHROMIUM VI	001	S	08LVI052	06/10/08	06/26/08	06/26/08
CHROMIUM VI	001 REP	S	08LVI052	06/10/08	06/26/08	06/26/08
CHROMIUM VI	001 MS	S	08LVI052	06/10/08	06/26/08	06/26/08
CHROMIUM VI	001 MSD	S	08LVI052	06/10/08	06/26/08	06/26/08
SULFATE BY IC	001	S	08LICT43	06/10/08	06/18/08	06/18/08
SULFATE BY IC	001 REP	S	08LICT43	06/10/08	06/18/08	06/18/08
SULFATE BY IC	001 MS	S	08LICT43	06/10/08	06/18/08	06/18/08
LAB QC:						
CHLORIDE BY IC	MB1	S	08LICR43	N/A	06/18/08	06/19/08
CHLORIDE BY IC	MB1 BS	S	08LICR43	N/A	06/18/08	06/18/08
FLUORIDE BY IC	MB1	S	08LICT43	N/A	06/18/08	06/19/08
FLUORIDE BY IC	MB1 BS	S	08LICT43	N/A	06/18/08	06/18/08
NITRITE BY IC	MB1	S	08LICT43	N/A	06/18/08	06/19/08
NITRITE BY IC	MB1 BS	S	08LICT43	N/A	06/18/08	06/18/08
NITRATE BY IC	MB1	S	08LICT43	N/A	06/18/08	06/19/08
NITRATE BY IC	MB1 BS	S	08LICT43	N/A	06/18/08	06/18/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F08-126 H3771

DATE RECEIVED: 06/13/08 LVL LOT # :0806L291

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
PHOSPHATE BY IC	MB1	S	08LICR43	N/A	06/18/08	06/19/08
PHOSPHATE BY IC	MB1 BS	S	08LICR43	N/A	06/18/08	06/18/08
CHROMIUM VI	MB1	S	08LVI052	N/A	06/26/08	06/26/08
CHROMIUM VI	MB1 BS	S	08LVI052	N/A	06/26/08	06/26/08
CHROMIUM VI	MB1 BSD	S	08LVI052	N/A	06/26/08	06/26/08
SULFATE BY IC	MB1	S	08LICT43	N/A	06/18/08	06/19/08
SULFATE BY IC	MB1 BS	S	08LICT43	N/A	06/18/08	06/18/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD F08-126 H3771
LVL#: 0806L291

W.O.#: 11343-606-001-9999-00
Date Received: 06-13-08

INORGANIC NARRATIVE

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

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

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

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

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

5. The method blanks were within the method criteria.

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

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

8. The replicate analyses were within the 20% Relative Percent Difference (RPD) control limit.

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

7/1/08
Date

njp\06-291

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 12 pages.

22

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

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

Other: Chloride, Fluoride, Nitrite, **Method:** EPA 300.0

Other: Nitrate, Phosphate, Sulfate **Method**

23

L-WI-034/B-01/01

000000004

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/27/08

CLIENT: TNUHANFORD F08-126 H3771 LVL LOT #: 0806L291

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B1W0L9	% Solids	96.0	%	0.01	1.0
		Chloride by IC	2.5	MG/KG	2.5	1.0
		Fluoride by IC	2.5 u	MG/KG	2.5	1.0
		Nitrite by IC	2.47 u	MG/KG	2.47	1.0
		Nitrate by IC	7.54	MG/KG	2.47	1.0
		Phosphate by IC	8.7	MG/KG	2.5	1.0
		Chromium VI	2.1	MG/KG	0.21	1.0
		Sulfate by IC	18.5	MG/KG	2.5	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/27/08

CLIENT: TNUHANFORD F08-126 H3771

LVL LOT #: 0806L291

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	08LICR43-MB1	Chloride by IC	2.2	u	MG/KG	2.2	1.0
		Phosphate by IC	2.2	u	MG/KG	2.2	1.0
BLANK10	08LICT43-MB1	Fluoride by IC	2.2	u	MG/KG	2.2	1.0
		Nitrite by IC	2.22	u	MG/KG	2.22	1.0
		Nitrate by IC	2.22	u	MG/KG	2.22	1.0
		Sulfate by IC	2.2	u	MG/KG	2.2	1.0
BLANK10	08LVI052-MB1	Chromium VI	0.20	u	MG/KG	0.20	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 06/27/08

CLIENT: TNUHANFORD F08-126 H3771

LVL LOT #: 0806L291

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B1W0L9	Chloride by IC	55.0	2.5	51.8	101.3	1.0
		Fluoride by IC	55.1	0.79	51.8	104.9	1.0
		Nitrite by IC	52.6	2.47u	51.8	101.5	1.0
		Nitrate by IC	59.8	7.54	51.8	100.8	1.0
		Phosphate by IC	66.4	8.7	51.8	111.2	1.0
		Soluble Chromium VI	6.2	2.1	4.2	97.4	1.0
		Insoluble Chromium VI	1300	2.1	1100	117.6	100
		Sulfate by IC	74.5	18.5	51.8	108.0	1.0
BLANK10	08LICR43-MB1	Chloride by IC	62.6	2.2 u	67.6	92.6	1.0
		Phosphate by IC	63.2	2.2 u	67.6	93.5	1.0
BLANK10	08LICT43-MB1	Fluoride by IC	63.9	2.2 u	67.6	94.6	1.0
		Nitrite by IC	63.2	2.22u	67.6	93.6	1.0
		Nitrate by IC	62.5	2.22u	67.6	92.5	1.0
		Sulfate by IC	66.2	2.2 u	67.6	97.9	1.0
BLANK10	08LVI052-MB1	Soluble Chromium VI	4.2	0.20u	4.0	104.4	1.0
		Insoluble Chromium VI	1450	0.20u	1220	118.9	100

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 06/27/08

CLIENT: TNUHANFORD F08-126 H3771

LVL LOT #: 0806L291

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B1W0L9	% Solids	96.0	95.7	0.38	1.0
		Chloride by IC	2.5	2.6	3.2	1.0
		Fluoride by IC	2.5 u	2.5 u	NC	1.0
		Nitrite by IC	2.47u	2.52u	NC	1.0
		Nitrate by IC	7.54	6.83	9.9	1.0
		Phosphate by IC	8.7	9.9	12.1	1.0
		Chromium VI	2.1	1.8	13.9	1.0
		Sulfate by IC	18.5	18.5	0.17	1.0

onville Laboratory Use Only
0806 L291

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

ent TNLL HANFORD SAF# F08-126
. Final Proj. Sampling Date
ject# 11343-606-001-9999-00
ject Contact/Phone#
nville Laboratory Project Manager O-JOHNSON
SW846 Del STD TAT 30 days
te Rec'd 6-13-08 Date Due 7-13-08

		A	B	C
Refrigerator #		2	2	2
#/Type Container	Liquid / Solid	16	16	16
Volume		120	120	120
Preservatives				
ANALYSES REQUESTED →	ORGANIC: VOA, BNA, Pest/PCB, Herb	INORG: Metal	INORG: CN	IC Anion / Hg / CHRom

Lionville Laboratory Use Only: Met① / IC① / ICRG

TRIX DES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	A	B	C
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP, Leachate, Wipe, Other, Fish	001	B1W0L9	✓	✓	Soil	6/10/08	1300	X	X	X

ecial Instructions:
Met① = RCRA + Sb, Be, Bi, Cu, Ni, Tl
IC① = 6/13 Br, Cl, FL, NO2, NO3, PO4, SO4

Special Instructions:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
		6/13/08	0955

Relinquished by	Received by	Date	Time

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

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

COLLECTOR ANCO SAMPLER PFISTER	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE 8N	DATA TURNAROUND 45 Days / 45 Days
SAMPLING LOCATION C6551, I-000-PUSH	PROJECT DESIGNATION 216-A-5 Crib Characterization Sampling and Analysis - Soil		SAF NO. F08-126	AIR QUALITY ☐	
ICE CHEST NO.	FIELD LOGBOOK NO.	ACTUAL SAMPLE DEPTH 60.8'-61.6'	COA 123124ES10	METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO Lionville Laboratory Incorporated	OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. SEE PTR 7919-1571-8631		

MATRIX*: =Air, L=Drum Liquids, S=Drum Solids, =Liquid, =Oil, =Soil, E=Sediment, =Tissue, =Vegitation, W=Water, WI=Wipe, =Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
Radioactive Tie To: B1W0L8

PRESERVATION	None	Cool~4C	Cool~4C
TYPE OF CONTAINER	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	120mL	120mL	120mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
1W0L9	SOIL	6-10-08	13:00	✓	✓	✓
				024875	→	
			Lot#	~~028794~~ 028797	→	

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. Pfister	6-10-08 1345	A2 Site Frig A-5	6-10-08 1345
A2 Site Frig A5	6-12-8 1000	D Connolly	6-12-8 1000
D Connolly	6-12-8 1330	Fed Ex	
Fed Ex	6-13-08 0955		6-13-08 0955

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** Analytical batch QC must be run on a sample associated with this SAF.
(1)ICP Metals - 6010B (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver} ICP Metals - 6010B (Supertrace Add-On) {Antimony, Beryllium, Bismuth, Copper, Nickel, Thallium} Mercury - 7471 - (CV);
(2)IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

00000001

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Date: 6/13/08

Project/SAF/SOW/Release #: F08-126

LvLI Batch #: 08061291

Sample Custodian:

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7919 1571 8631
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 5-9°	°C	Cooler # 1
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A
Person Contacted _____		Date _____	

LVLI LIONVILLE LABORATORY INC.

31