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Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-025 H2701

H 2691 05 11/11/04

DATE RECEIVED: 08/26/04

LVL LOT # : 0408L460

CLIENT ID / ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B191J6						
% SOLIDS	001	S	04L&S149	08/25/04	08/28/04	08/28/04
% SOLIDS	001 REP	S	04L&S149	08/25/04	08/28/04	08/28/04
CHROMIUM VI	001	S	04LVI028	08/25/04	09/14/04	09/14/04
CHROMIUM VI	001 REP	S	04LVI028	08/25/04	09/14/04	09/14/04
CHROMIUM VI	001 MS	S	04LVI028	08/25/04	09/14/04	09/14/04
CHROMIUM VI	001 MSD	S	04LVI028	08/25/04	09/14/04	09/14/04
NITRATE NITRITE	001	S	04LN3054	08/25/04	09/23/04	09/24/04
NITRATE NITRITE	001 REP	S	04LN3054	08/25/04	09/23/04	09/24/04
NITRATE NITRITE	001 MS	S	04LN3054	08/25/04	09/23/04	09/24/04
OIL & GREASE BY GRAV	001	S	04LOG024	08/25/04	09/03/04	09/04/04
OIL AND GREASE BY GR	001 REP	S	04LOG024	08/25/04	09/03/04	09/04/04
OIL AND GREASE BY GR	001 MS	S	04LOG024	08/25/04	09/03/04	09/04/04
SULFIDE	001	S	04LSDA46	08/25/04	08/30/04	08/30/04
SULFIDE	001 REP	S	04LSDA46	08/25/04	08/30/04	08/30/04
SULFIDE	001 MS	S	04LSDA46	08/25/04	08/30/04	08/30/04

LAB QC:

CHROMIUM VI	MB1	S	04LVI028	N/A	09/14/04	09/14/04
CHROMIUM VI	MB1 BS	S	04LVI028	N/A	09/14/04	09/14/04
CHROMIUM VI	MB1 BSD	S	04LVI028	N/A	09/14/04	09/14/04
NITRATE NITRITE	MB1	S	04LN3054	N/A	09/23/04	09/24/04
NITRATE NITRITE	MB1 BS	S	04LN3054	N/A	09/23/04	09/24/04
OIL & GREASE BY GRAV	MB1	S	04LOG024	N/A	09/03/04	09/04/04
OIL AND GREASE BY GR	MB1 BS	S	04LOG024	N/A	09/03/04	09/04/04
SULFIDE	MB1	S	04LSDA46	N/A	08/30/04	08/30/04
SULFIDE	MB1 BS	S	04LSDA46	N/A	08/30/04	08/30/04
SULFIDE	MB1 BSD	S	04LSDA46	N/A	08/30/04	08/30/04

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Analytical Report

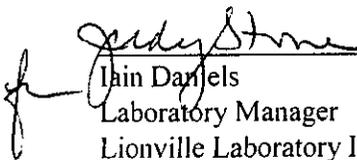
Client: TNU-HANFORD F03-025 H2701
LVL#: 0408L460

H2691 05
11/11/04

W.O.#: 11343-606-001-9999-00
Date Received: 08-26-04

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.
3. Sample holding times as required by the method and/or contract were met.
4. The results presented in this report are derived from samples that met LVL'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. The duplicate LCS for Sulfide was within the 20% Relative Percent Difference (RPD) control limit.
7. The matrix spike recoveries for Nitrate Nitrite, Oil and Grease, Chromium VI and Sulfide were within the 75-125% control limits.
8. The replicate analyses for Nitrate Nitrite, Oil and Grease, Chromium VI and Sulfide were within the 20% RPD control limit.
9. Results for solid 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

10/4/04
Date

njpl08-460

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.

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WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	<u>ASTM</u>	<u>SW846</u>	<u>OTHER</u>
% 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	✓ ___ EPA 413.1 (mod.)
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) / 9034	
Specific Gravity	___ D1429-76C/	___ D5057-90	
Sulfur, Total		___ 9056	
Synthetic Preparation Leach		___ 1312	
Paint Filter		___ 9095A	
Other: <i>Nitrate Nitrite</i>		Method: <i>EPA 353.2 (mod.)</i>	
Other:		Method	

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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.

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INORGANICS DATA SUMMARY REPORT 09/28/04

CLIENT: TNUHANFORD F03-025 H2701
WORK ORDER: 11343-606-001-9999-00

H269103 11/4/04

LVL LOT #: 0408L460

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B191J6	% Solids	96.1	%	0.01	1.0
		Chromium VI	0.21	u MG/KG	0.21	1.0
		Nitrate Nitrite	0.81	MG/KG	0.08	1.0
		Oil & Grease Gravimetri	694	u MG/KG	694	1.0
		Sulfide	44.2	u MG/KG	44.2	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 09/28/04

CLIENT: TNUHANFORD F03-025 H2701
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0408L460

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	04LVI028-MB1	Chromium VI	0.20	u MG/KG	0.20	1.0
BLANK10	04LN3054-MB1	Nitrate Nitrite	0.08	u MG/KG	0.08	1.0
BLANK10	04LOG024-MB1	Oil & Grease Gravimetri	667	u MG/KG	667	1.0
BLANK10	04LSDA46-MB1	Sulfide	40.0	u MG/KG	40.0	1.0

Handwritten: H2691 11/11/04
 [Signature]

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INORGANICS ACCURACY REPORT 09/28/04

CLIENT: TNUHANFORD F03-025 H2701
 WORK ORDER: 11343-606-001-9999-00

H2691 of 11/11/04
H2691

LVL LOT #: 0408L460

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	B191J6	Soluble Chromium VI	4.5	0.21u	4.2	108.0	1.0
		Insoluble Chromium VI	1280	0.21u	1230	104.7	100
		Nitrate Nitrite	3.2	0.81	2.0	117.2	1.0
		Oil & Grease Gravimetr	5280	694 u	7000	75.5	1.0
		Sulfide	415	17.7	473	84.0	1.0
BLANK10	04LVI028-MB1	Soluble Chromium VI	4.0	0.20u	4.0	100	1.0
		Insoluble Chromium VI	1170	0.20u	1180	99.0	100
BLANK10	04LN3054-MB1	Nitrate Nitrite	2.0	0.08u	2.0	97.8	1.0
BLANK10	04LOG024-MB1	Oil & Grease Gravimetr	6000	667 u	6840	87.7	1.0
BLANK10	04LSDA46-MB1	Sulfide	326	40.0 u	372	87.8	1.0
		Sulfide MSD	342	40.0 u	372	92.1	1.0

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INORGANICS DUPLICATE SPIKE REPORT 09/28/04

CLIENT: TNUHANFORD F03-025 H2761
WORK ORDER: 11343-606-001-9999-00

H2691 sig 11/11/04

LVL LOT #: 0408L460

SAMPLE	SITE ID	ANALYTE	SPIKE#1		SPIKE#2	
			%RECOV	%RECOV	%RECOV	%DIFF
BLANK10	04LSDA46-MB1	Sulfide	87.8	92.1	4.8	

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INORGANICS PRECISION REPORT 09/28/04

CLIENT: TNUHANFORD F03-025 H2701
 WORK ORDER: 11343-606-001-9999-00

H2691 as 11/11/04

LVL LOT #: 0408L460

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REP)
			RESULT	REPLICATE	RPD	
-001REP	B191J6	% Solids	96.1	95.9	0.23	1.0
		Chromium VI	0.21u	0.21u	NC	1.0
		Nitrate Nitrite	0.81	0.94	14.8	1.0
		Oil & Grease Gravimetri	694 u	694 u	NC	1.0
		Sulfide	44.2 u	42.3 u	NC	1.0

COLLECTOR: Pope/Pfister/Wiberg/Tyra
 COMPANY CONTACT: TRENT, STEVE
 TELEPHONE NO.: 373-5689
 PROJECT COORDINATOR: TRENT, SJ
 PRICE CODE: 8N
 DATA TURNAROUND: 45 Days / 45 Days

SAMPLING LOCATION: 216-S-20; 47.5R-50R
 PROJECT DESIGNATION: 200-LW-1/LW-2 Characterization - Soil
 SAF NO.: F03-025
 AIR QUALITY:

ICE CHEST NO.: **GRP-04-010**
 FIELD LOGBOOK NO.: HNF-N-356 1
 COA: 119143ES10
 METHOD OF SHIPMENT: Federal Express

SHIPPED TO: **Eberline Services RECRA** *8-18-04*
 OFFSITE PROPERTY NO.: **See PTR 14004**
 BILL OF LADING/AIR BILL NO.: **See PTR 14004**

MATRIX* A=Air DL=Drum L=Liquid DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS N/A	PRESERVATION	Cool 4C	None
		TYPE OF CONTAINER	gG	gG
		NO. OF CONTAINER(S)	1	1
		VOLUME	250ml	250ml
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B191J6	SOIL	8/25/04	0900	X

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN
<i>Dana W. ...</i>	8/25/04 1200	<i>Site Frigate #1</i> 8/25/04
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN
<i>Site Frigate #1</i>	8/25/04 1140	<i>Greg Thomas / Greg Thomas</i> 8/25/04
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN
<i>Greg Thomas / Greg Thomas</i>	8/25/04 1140	<i>Fed Ex</i>
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN
<i>Fed Ex</i>		<i>SPERRY</i> 8/26/04 0955
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN

(1) Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1;
 (2) Nickel-63; Gamma Spec - Radium (Radium-226, Radium-228) Technetium-99;
 Isotopic Thorium (Thorium-232) Tritium - H3; Carbon-14; Strontium-89,90 -- Total

Tie to radiological screen B191H4

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

11

M/D 8-40

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SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *TNU Hanford*

Date: *8/26/04*

Purchase Order / Project# /
 SAF# / SOW# / Release #:

LvLI Batch #: *04082460*

Sample Custodian: *Henry*

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | |
|---|---|--|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier <i>FedEx</i> | Airbill# <i>791323706180</i> |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals Comments |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 5. Samples received <u>cooled</u> or ambient? | Temp <i>3</i> °C | Cooler # <i>GRP-04-010</i> |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 11. Samples properly preserved? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 13. VOA, TOC, TOX free of headspace? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 14. QC stickers placed on bottles designated by client? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> No Discrepancies |