



24 October 2004

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

**Subject: Contract No. 630
Analytical Data Package**

Dear Mr. Trent:

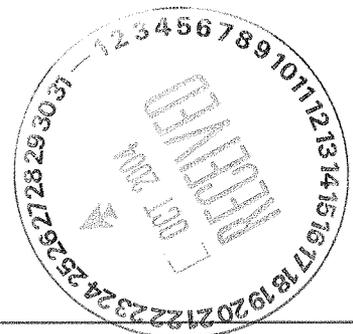
Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0409L621
SDG #	H2720
SAF #	F03-025
Date Received	9-10-04
# Samples	1
Matrix	Soil
Volatiles	
Semivolatiles	
Pest/PCB	
DRO/GRO/KRO	
Herbicides	
GC Alcohol	
Metals	
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



Lionville Laboratory, Inc.
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD F03-025 H2720

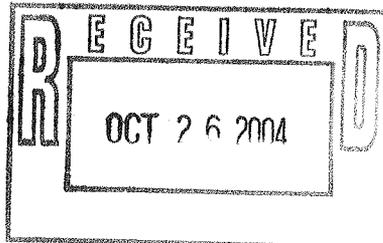
DATE RECEIVED: 09/14/04

LVL LOT # :0409L621

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B191K1						
% SOLIDS	001	S	04L%S157	09/13/04	09/16/04	09/17/04
% SOLIDS	001 REP	S	04L%S157	09/13/04	09/16/04	09/17/04
CHROMIUM VI	001	S	04LVI029	09/13/04	09/23/04	09/23/04
CHROMIUM VI	001 REP	S	04LVI029	09/13/04	09/23/04	09/23/04
CHROMIUM VI	001 MS	S	04LVI029	09/13/04	09/23/04	09/23/04
CHROMIUM VI	001 MSD	S	04LVI029	09/13/04	09/23/04	09/23/04
NITRATE NITRITE	001	S	04LN3056	09/13/04	10/04/04	10/05/04
NITRATE NITRITE	001 REP	S	04LN3056	09/13/04	10/04/04	10/05/04
NITRATE NITRITE	001 MS	S	04LN3056	09/13/04	10/04/04	10/05/04
OIL & GREASE BY GRAV	001	S	04LOG027	09/13/04	09/25/04	09/27/04
OIL AND GREASE BY GR	001 REP	S	04LOG027	09/13/04	09/25/04	09/27/04
OIL AND GREASE BY GR	001 MS	S	04LOG027	09/13/04	09/25/04	09/27/04
SULFIDE	001	S	04LSD052	09/13/04	09/16/04	09/16/04
SULFIDE	001 REP	S	04LSD052	09/13/04	09/16/04	09/16/04
SULFIDE	001 MS	S	04LSD052	09/13/04	09/16/04	09/16/04

LAB QC:

CHROMIUM VI	MB1	S	04LVI029	N/A	09/23/04	09/23/04
CHROMIUM VI	MB1 BS	S	04LVI029	N/A	09/23/04	09/23/04
CHROMIUM VI	MB1 BSD	S	04LVI029	N/A	09/23/04	09/23/04
NITRATE NITRITE	MB1	S	04LN3056	N/A	10/04/04	10/05/04
NITRATE NITRITE	MB1 BS	S	04LN3056	N/A	10/04/04	10/05/04
OIL & GREASE BY GRAV	MB1	S	04LOG027	N/A	09/25/04	09/27/04
OIL AND GREASE BY GR	MB1 BS	S	04LOG027	N/A	09/25/04	09/27/04
SULFIDE	MB1	S	04LSD052	N/A	09/16/04	09/16/04
SULFIDE	MB1 BS	S	04LSD052	N/A	09/16/04	09/16/04
SULFIDE	MB1 BSD	S	04LSD052	N/A	09/16/04	09/16/04





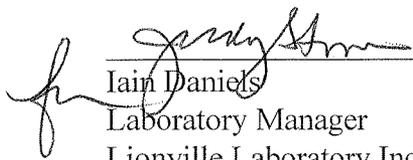
Analytical Report

Client: TNU-HANFORD F03-025 H2720
LVL#: 0409L621

W.O.#: 11343-606-001-9999-00
Date Received: 9-14-04

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 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. The duplicate LCS for Sulfide was within the 20% Relative Percent Difference (RPD) control limit.
7. The matrix spike recoveries for Chromium VI, Nitrate Nitrite, Oil and Grease and Sulfide were within the 75-125% control limits.
8. The replicate analyses for Percent Solids, Chromium VI, Nitrate Nitrite, Oil and Grease 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

10/19/04
Date

njp09-621

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	✓ 413.4 (mod.) (2) ^{1, 1987 10-14-04}
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: Nitrate Nitrite		Method: EPA 353.2 (mod.)	
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.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/06/04

CLIENT: TNUHANFORD F03-025 H2720
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0409L621

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-001	B191K1	% Solids	97.0	%	0.01	1.0
		Chromium VI	0.21	u MG/KG	0.21	1.0
		Nitrate Nitrite	0.08	u MG/KG	0.08	1.0
		Oil & Grease Gravimetri	687	u MG/KG	687	1.0
		Sulfide	48.6	u MG/KG	48.6	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/06/04

CLIENT: TNUHANFORD F03-025 H2720
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0409L621

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
BLANK10	04LVI029-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0
BLANK10	04LN3056-MB1	Nitrate Nitrite	0.08 u	MG/KG	0.08	1.0
BLANK10	04LOG027-MB1	Oil & Grease Gravimetri	667	u MG/KG	667	1.0
BLANK10	04LSD052-MB1	Sulfide	40.0 u	MG/KG	40.0	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/06/04

CLIENT: TNUHANFORD F03-025 H2720
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0409L621

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	B191K1	Soluble Chromium VI	4.4	0.21u	4.1	103.0	1.0
		Insoluble Chromium VI	1110	0.21u	1040	107.4	100
		Nitrate Nitrite	2.3	0.08u	2.0	113.4	1.0
		Oil & Grease Gravimetr	9050	687 u	9270	97.6	1.0
		Sulfide	652	20.7	732	86.2	1.0
BLANK10	04LVI029-MB1	Soluble Chromium VI	4.0	0.20u	4.0	101.0	1.0
		Insoluble Chromium VI	1230	0.20u	1200	101.9	100
BLANK10	04LN3056-MB1	Nitrate Nitrite	2.1	0.08u	2.0	104.0	1.0
BLANK10	04LOG027-MB1	Oil & Grease Gravimetr	8690	667 u	8990	96.7	1.0
BLANK10	04LSD052-MB1	Sulfide	324	40.0 u	355	91.3	1.0
		Sulfide MSD	312	40.0 u	355	87.9	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 10/06/04

CLIENT: TNUHANFORD F03-025 H2720
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0409L621

SAMPLE	SITE ID	ANALYTE	SPIKE#1	SPIKE#2	%DIFF
			%RECOV	%RECOV	
BLANK10	04LSD052-MB1	Sulfide	91.3	87.9	3.8

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 10/06/04

CLIENT: TNUHANFORD F03-025 H2720
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0409L621

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REP)
			RESULT	REPLICATE RPD		
-001REP	B191K1	% Solids	97.0	97.0	0.031	1.0
		Chromium VI	0.21u	0.21u	NC	1.0
		Nitrate Nitrite	0.08u	0.08u	NC	1.0
		Oil & Grease Gravimetri	687 u	687 u	NC	1.0
		Sulfide	48.6 u	50.2 u	NC	1.0

04076 W-1

FLUOR Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F03-025-171

PAGE 1 OF 1

COLLECTOR Pope/Pfister/Hughes/Wiberg	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; 230B-232-5T 238'-240.5' 4th	PROJECT DESIGNATION 200-LW-1/LW-2 Characterization - Soil		SAF NO. F03-025	AIR QUALITY <input type="checkbox"/>	

ICE CHEST NO. GRP-04-003	FIELD LOGBOOK NO. HNF-N-356 1	COA 119143ES10	METHOD OF SHIPMENT Federal Express		
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SHIPPED TO Edgemoor Services Recra	OFFSITE PROPERTY NO. See PTR - 14115	BILL OF LADING/AIR BILL NO. See PTR - 14115			
--	--	---	--	--	--

MATRIX* A=Air DL=Drum Liquids 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 Tie to Rad Screen B191H8	PRESERVATION	Cool 4C	None																	
		TYPE OF CONTAINER	aG	aG																	
		NO. OF CONTAINER(S)	1	1																	
		VOLUME	250mL	250mL																	
SPECIAL HANDLING AND/OR STORAGE N/A		SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS																	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME																	
B191K1	SOIL	9-13-04	0715	X																

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BYT/STORED IN	DATE/TIME	(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 Sr;	
JSPope/Pfister	9-13-04 1640	Mo-026/Fridge #1	9-13-04 1040		
Mo-026/Fridge #1	9/13/04 1245	Greg Thomas/Doug Thomas	9/13/04 1245		
Greg Thomas/Doug Thomas	9/13/04 1245	Fed Ex			
Fed Ex	9-14-04 0950	J. J. [unclear]	9-14-04 0950		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BYT/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BYT/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BYT/STORED IN	DATE/TIME		

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

Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *TWA - Hanford*

Date: *9-14-04*

Purchase Order / Project# /

SAF# / SOW# / Release #: *F03-025*

LvLI Batch #:

0409L 621

Sample Custodian:

V. Veerab

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | |
|---|---|--|
| 1. Samples Hand Delivered or Shipped | Carrier <i>Fed Ex</i> | Airbill# <i>7927 2951 1915</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 cooled or ambient? | Temp <i>2.9</i> °C | Cooler # <i>GRP-04-003</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 type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" 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 |