H1454

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Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-063 H1454

DATE RECEIVED: 08/08/01 LVL LOT # :0108L501

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B12KF2						
SILVER, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
ALUMINUM, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
BARIUM, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
BERYLLIUM, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
CALCIUM, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
CADMIUM, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
COBALT, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
CHROMIUM, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
COPPER, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
IRON, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
MERCURY, TOTAL	001	W	01C0256	08/06/01	08/20/01	08/21/01
MERCURY, TOTAL	001 REP	W	01C0256	08/06/01	08/20/01	08/21/01
MERCURY, TOTAL	001 MS	W	01C0256	08/06/01	08/20/01	08/21/01
POTASSIUM, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
MAGNESIUM, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
MANGANESE, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
SODIUM, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
NICKEL, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
ANTIMONY, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
VANADIUM, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
ZINC, TOTAL	001	W	01L0545	08/06/01	08/30/01	09/02/01
B12KF3						
SILVER, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/02/01
SILVER, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/02/01
SILVER, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/02/01
ALUMINUM, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/02/01
ALUMINUM, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/02/01
ALUMINUM, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/02/01
BARIUM, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/02/01
BARIUM, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/02/01
BARIUM, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/02/01
BERYLLIUM, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/02/01
BERYLLIUM, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/02/01

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BERYLLIUM, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/02/01
CALCIUM, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/02/01
CALCIUM, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/02/01
CALCIUM, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/02/01
CADMIUM, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/02/01
CADMIUM, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/02/01
CADMIUM, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/02/01
COBALT, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/02/01
COBALT, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/02/01
COBALT, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/02/01
CHROMIUM, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/02/01
CHROMIUM, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/02/01
CHROMIUM, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/02/01
COPPER, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/02/01
COPPER, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/02/01
COPPER, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/02/01
IRON, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/02/01
IRON, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/02/01
IRON, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/02/01
MERCURY, TOTAL	002	W	01C0262	08/06/01	08/29/01	08/30/01
POTASSIUM, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/05/01
POTASSIUM, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/05/01
POTASSIUM, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/05/01
MAGNESIUM, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/02/01
MAGNESIUM, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/02/01
MAGNESIUM, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/02/01
MANGANESE, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/02/01
MANGANESE, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/02/01
MANGANESE, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/02/01
SODIUM, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/05/01
SODIUM, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/05/01
SODIUM, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/05/01
NICKEL, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/02/01
NICKEL, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/02/01
NICKEL, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/02/01
ANTIMONY, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/02/01
ANTIMONY, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/02/01
ANTIMONY, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/02/01

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TNUHANFORD B00-063 H1454

DATE RECEIVED: 08/08/01 LVL LOT # :0108L501

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
VANADIUM, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/02/01
VANADIUM, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/02/01
VANADIUM, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/02/01
ZINC, TOTAL	002	W	01L0545	08/06/01	08/30/01	09/02/01
ZINC, TOTAL	002 REP	W	01L0545	08/06/01	08/30/01	09/02/01
ZINC, TOTAL	002 MS	W	01L0545	08/06/01	08/30/01	09/02/01
B12KF4						
SILVER, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/02/01
ALUMINUM, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/02/01
BARIUM, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/02/01
BERYLLIUM, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/02/01
CALCIUM, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/02/01
CADMIUM, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/02/01
COBALT, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/02/01
CHROMIUM, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/02/01
COPPER, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/02/01
IRON, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/02/01
MERCURY, TOTAL	003	W	01C0262	08/06/01	08/29/01	08/30/01
POTASSIUM, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/05/01
MAGNESIUM, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/02/01
MANGANESE, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/02/01
SODIUM, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/05/01
NICKEL, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/02/01
ANTIMONY, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/02/01
VANADIUM, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/02/01
ZINC, TOTAL	003	W	01L0545	08/06/01	08/30/01	09/02/01
B12KF5						
SILVER, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/02/01
ALUMINUM, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/02/01
BARIUM, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/02/01
BERYLLIUM, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/02/01
CALCIUM, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/02/01
CADMIUM, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/02/01
COBALT, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/02/01

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CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/02/01
COPPER, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/02/01
IRON, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/02/01
MERCURY, TOTAL	005	W	01C0262	08/06/01	08/29/01	08/30/01
POTASSIUM, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/05/01
MAGNESIUM, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/02/01
MANGANESE, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/02/01
SODIUM, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/05/01
NICKEL, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/02/01
ANTIMONY, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/02/01
VANADIUM, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/02/01
ZINC, TOTAL	005	W	01L0545	08/06/01	08/30/01	09/02/01
B12KF6						
SILVER, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/02/01
ALUMINUM, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/02/01
BARIUM, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/02/01
BERYLLIUM, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/02/01
CALCIUM, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/02/01
CADMIUM, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/02/01
COBALT, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/02/01
CHROMIUM, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/02/01
COPPER, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/02/01
IRON, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/02/01
MERCURY, TOTAL	006	W	01C0262	08/06/01	08/29/01	08/30/01
POTASSIUM, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/05/01
MAGNESIUM, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/02/01
MANGANESE, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/02/01
SODIUM, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/05/01
NICKEL, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/02/01
ANTIMONY, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/02/01
VANADIUM, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/02/01
ZINC, TOTAL	006	W	01L0545	08/06/01	08/30/01	09/02/01
B12KF7						
SILVER, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/02/01

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-063 H1454

DATE RECEIVED: 08/08/01 LVL LOT # :0108L501

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ALUMINUM, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/02/01
BARIUM, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/02/01
BERYLLIUM, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/02/01
CALCIUM, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/02/01
CADMIUM, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/02/01
COBALT, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/02/01
CHROMIUM, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/02/01
COPPER, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/02/01
IRON, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/02/01
MERCURY, TOTAL	007	W	01C0262	08/06/01	08/29/01	08/30/01
POTASSIUM, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/05/01
MAGNESIUM, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/02/01
MANGANESE, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/02/01
SODIUM, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/05/01
NICKEL, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/02/01
ANTIMONY, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/02/01
VANADIUM, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/02/01
ZINC, TOTAL	007	W	01L0545	08/06/01	08/30/01	09/02/01

LAB QC:

SILVER LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
SILVER, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
ALUMINUM LABORTORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
ALUMINUM, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
BARIUM LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
BARIUM, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
BERYLLIUM LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
BERYLLIUM, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
CALCIUM LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
CALCIUM, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
CADMIUM LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
CADMIUM, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
COBALT LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
COBALT, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
CHROMIUM LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
CHROMIUM, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
COPPER LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01

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TNUHANFORD B00-063 H1454

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COPPER, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
IRON LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
IRON, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
MERCURY LABORATORY	LC1 BS	W	01C0256	N/A	08/20/01	08/21/01
MERCURY, TOTAL	MB1	W	01C0256	N/A	08/20/01	08/21/01
POTASSIUM LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
POTASSIUM, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
MAGNESIUM LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
MAGNESIUM, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
MANGANESE LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
MANGANESE, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
SODIUM LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
SODIUM, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
NICKEL LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
NICKEL, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
ANTIMONY LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
ANTIMONY, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
VANADIUM LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
VANADIUM, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
ZINC LABORATORY	LC1 BS	W	01L0545	N/A	08/30/01	09/02/01
ZINC, TOTAL	MB1	W	01L0545	N/A	08/30/01	09/02/01
MERCURY LABORATORY	LC1 BS	W	01C0262	N/A	08/29/01	08/30/01
MERCURY, TOTAL	MB1	W	01C0262	N/A	08/29/01	08/30/01
MERCURY, TCLP LEACHA	MB2	W	01C0262	N/A	08/29/01	08/30/01
MERCURY, TCLP LEACHA	MB3	W	01C0262	N/A	08/29/01	08/30/01

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B00-063
LVL#: 0108L501
SDG/SAF#: H1454/B00-063

W.O.#: 11343-606-001-9999-00
Date Received: 08-08-01

METALS CASE NARRATIVE

1. This narrative covers the analyses of 6 water samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.

   Samples B12KF3, -4, -5, -6, and -7 were received with a pH of approximately 8, per the analyst's pH paper check. These 5 samples had additional Nitric Acid preservative added, and were allowed to sit for a minimum of 16 hours prior to preparation.

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

4. All cooler temperatures have been recorded on the Chain of Custody.

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

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

7. The preparation/method blanks for 2 analytes were outside method criteria. {less than the Practical Quantitation Limit (3X the IDL), or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

   a). The MB results for Barium and Sodium were greater than the Practical Quantitation Limit (PQL) {3 x the (IDL) Instrument Detection Level} and only sample B12KF2 read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.

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.

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 26 pages.

208 Welsh Pool Road • Exton, PA 19341-1313 • (610) 280-3000 • Fax (610) 280-3041

10. All matrix spike (MS) recoveries were within the 75-125% control limits. Refer to the Inorganics Accuracy Report.

11. The duplicate analyses for 2 analytes were 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 Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.

13. 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
Deputy Laboratory Manager
Lionville Laboratory Incorporated

09-14-01
Date

jjw/m08-501

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#: 01081 501

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: X 3005A __3010A __3015 __3020A __3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	X 6010B		__200.7				__99
Antimony	X 6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	__6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X 6010B		__200.7				__99
Beryllium	X 6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	X 6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	X 6010B		__200.7				__99
Chromium	X 6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	X 6010B		__200.7				__99
Copper	X 6010B	__7211 [5]	__200.7	__220.2			__99
Iron	X 6010B		__200.7				__99
Lead	__6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	X 6010B		__200.7				__99
Manganese	X 6010B		__200.7				__99
Mercury	X 7470A [3]	__7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	X 6010B		__200.7				__99
Potassium	X 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	X 6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	X 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	X 6010B		__200.7				__99
Zinc	X 6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

L-W1-033/M-03/01

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.

B = Indicates that the parameter was between the Instrument Detection Limit (IDL) and the Contract Required Detection Limit (CRDL)

Q QUALIFIERS

E = The reported value is estimated because of the presence of interference.

M = Duplicate injection precision not met.

N = Spiked sample recovery not within control limits.

S = The reported value was determined by the Method of Standard Additions (MSA).

W = Post Digestion spike for Furnace AA analysis is out of control limits (85 -115 %), while sample absorbance is less than 50% of spike absorbance.

* = Duplicate analysis not within control limits.

+ = Correlation coefficient for the MSA is less than 0.995.

ABBREVIATIONS

PB = Method or Preparation Blank.
S = Matrix Spike.
T = Matrix Spike Duplicate.
R or D = Sample Replicate

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.

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/08/01

CLIENT: TNUHANFORD B00-063 H1454 LVL LOT #: 0108L501

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B12KF2	Silver, Total	0.50 u	UG/L	0.50	1.0
		Aluminum, Total	16.0 u	UG/L	16.0	1.0
		Barium, Total	0.68	UG/L	0.10	1.0
		Beryllium, Total	0.20 u	UG/L	0.20	1.0
		Calcium, Total	119	UG/L	7.8	1.0
		Cadmium, Total	0.33	UG/L	0.30	1.0
		Cobalt, Total	0.90 u	UG/L	0.90	1.0
		Chromium, Total	1.4 u	UG/L	1.4	1.0
		Copper, Total	0.59	UG/L	0.50	1.0
		Iron, Total	15.6 u	UG/L	15.6	1.0
		Mercury, Total	0.10 u	UG/L	0.10	1.0
		Potassium, Total	19.7	UG/L	10.7	1.0
		Magnesium, Total	14.6	UG/L	8.0	1.0
		Manganese, Total	0.39	UG/L	0.10	1.0
		Sodium, Total	576	UG/L	1.6	1.0
		Nickel, Total	1.7 u	UG/L	1.7	1.0
		Antimony, Total	2.3 u	UG/L	2.3	1.0
		Vanadium, Total	0.50 u	UG/L	0.50	1.0
		Zinc, Total	1.5	UG/L	0.40	1.0

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/08/01

CLIENT: TNUHANFORD B00-063 H1454 LVL LOT #: 0108L501

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	B12KF3	Silver, Total	0.50 u	UG/L	0.50	1.0
		Aluminum, Total	117	UG/L	16.0	1.0
		Barium, Total	12.6	UG/L	0.10	1.0
		Beryllium, Total	0.31	UG/L	0.20	1.0
		Calcium, Total	4210	UG/L	7.8	1.0
		Cadmium, Total	0.30 u	UG/L	0.30	1.0
		Cobalt, Total	0.90 u	UG/L	0.90	1.0
		Chromium, Total	2.8	UG/L	1.4	1.0
		Copper, Total	4.5	UG/L	0.50	1.0
		Iron, Total	84.6	UG/L	15.6	1.0
		Mercury, Total	0.10 u	UG/L	0.10	1.0
		Potassium, Total	2070000	UG/L	428	40.0
		Magnesium, Total	18900	UG/L	8.0	1.0
		Manganese, Total	19.4	UG/L	0.10	1.0
		Sodium, Total	672000	UG/L	64.0	40.0
		Nickel, Total	24.3	UG/L	1.7	1.0
		Antimony, Total	3.7	UG/L	2.3	1.0
		Vanadium, Total	2.0	UG/L	0.50	1.0
		Zinc, Total	9.6	UG/L	0.40	1.0

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/08/01

CLIENT: TNUHANFORD B00-063 H1454 LVL LOT #: 0108L501

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	B12KF4	Silver, Total	0.50 u	UG/L	0.50	1.0
		Aluminum, Total	99.5	UG/L	16.0	1.0
		Barium, Total	12.5	UG/L	0.10	1.0
		Beryllium, Total	0.24	UG/L	0.20	1.0
		Calcium, Total	4230	UG/L	7.8	1.0
		Cadmium, Total	0.30 u	UG/L	0.30	1.0
		Cobalt, Total	0.90 u	UG/L	0.90	1.0
		Chromium, Total	2.5	UG/L	1.4	1.0
		Copper, Total	4.9	UG/L	0.50	1.0
		Iron, Total	82.3	UG/L	15.6	1.0
		Mercury, Total	0.10 u	UG/L	0.10	1.0
		Potassium, Total	2050000	UG/L	428	40.0
		Magnesium, Total	19000	UG/L	8.0	1.0
		Manganese, Total	19.1	UG/L	0.10	1.0
		Sodium, Total	663000	UG/L	64.0	40.0
		Nickel, Total	24.2	UG/L	1.7	1.0
		Antimony, Total	3.1	UG/L	2.3	1.0
		Vanadium, Total	2.3	UG/L	0.50	1.0
		Zinc, Total	9.2	UG/L	0.40	1.0

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/08/01

CLIENT: TNUHANFORD B00-063 H1454

LVL LOT #: 0108L501

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	B12KF5	Silver, Total	0.50 u	UG/L	0.50	1.0
		Aluminum, Total	92.8	UG/L	16.0	1.0
		Barium, Total	11.8	UG/L	0.10	1.0
		Beryllium, Total	0.24	UG/L	0.20	1.0
		Calcium, Total	4080	UG/L	7.8	1.0
		Cadmium, Total	0.30 u	UG/L	0.30	1.0
		Cobalt, Total	0.90 u	UG/L	0.90	1.0
		Chromium, Total	2.6	UG/L	1.4	1.0
		Copper, Total	4.7	UG/L	0.50	1.0
		Iron, Total	98.7	UG/L	15.6	1.0
		Mercury, Total	0.10 u	UG/L	0.10	1.0
		Potassium, Total	2040000	UG/L	428	40.0
		Magnesium, Total	18600	UG/L	8.0	1.0
		Manganese, Total	18.4	UG/L	0.10	1.0
		Sodium, Total	659000	UG/L	64.0	40.0
		Nickel, Total	23.2	UG/L	1.7	1.0
		Antimony, Total	4.1	UG/L	2.3	1.0
		Vanadium, Total	2.7	UG/L	0.50	1.0
		Zinc, Total	11.6	UG/L	0.40	1.0

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/08/01

CLIENT: TNUHANFORD B00-063 H1454 LVL LOT #: 0108L501

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	B12KF6	Silver, Total	0.50 u	UG/L	0.50	1.0
		Aluminum, Total	77.1	UG/L	16.0	1.0
		Barium, Total	11.4	UG/L	0.10	1.0
		Beryllium, Total	0.22	UG/L	0.20	1.0
		Calcium, Total	4020	UG/L	7.8	1.0
		Cadmium, Total	0.30 u	UG/L	0.30	1.0
		Cobalt, Total	0.90 u	UG/L	0.90	1.0
		Chromium, Total	2.4	UG/L	1.4	1.0
		Copper, Total	4.3	UG/L	0.50	1.0
		Iron, Total	48.4	UG/L	15.6	1.0
		Mercury, Total	0.10 u	UG/L	0.10	1.0
		Potassium, Total	2090000	UG/L	428	40.0
		Magnesium, Total	18500	UG/L	8.0	1.0
		Manganese, Total	16.8	UG/L	0.10	1.0
		Sodium, Total	673000	UG/L	64.0	40.0
		Nickel, Total	23.8	UG/L	1.7	1.0
		Antimony, Total	2.9	UG/L	2.3	1.0
		Vanadium, Total	1.8	UG/L	0.50	1.0
		Zinc, Total	8.1	UG/L	0.40	1.0

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/08/01

CLIENT: TNUHANFORD B00-063 H1454 LVL LOT #: 0108L501

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	B12KF7	Silver, Total	0.50 u	UG/L	0.50	1.0
		Aluminum, Total	307	UG/L	16.0	1.0
		Barium, Total	13.5	UG/L	0.10	1.0
		Beryllium, Total	0.22	UG/L	0.20	1.0
		Calcium, Total	4350	UG/L	7.8	1.0
		Cadmium, Total	0.30 u	UG/L	0.30	1.0
		Cobalt, Total	0.90 u	UG/L	0.90	1.0
		Chromium, Total	2.9	UG/L	1.4	1.0
		Copper, Total	4.8	UG/L	0.50	1.0
		Iron, Total	400	UG/L	15.6	1.0
		Mercury, Total	0.10 u	UG/L	0.10	1.0
		Potassium, Total	2080000	UG/L	428	40.0
		Magnesium, Total	19200	UG/L	8.0	1.0
		Manganese, Total	31.1	UG/L	0.10	1.0
		Sodium, Total	671000	UG/L	64.0	40.0
		Nickel, Total	24.7	UG/L	1.7	1.0
		Antimony, Total	3.3	UG/L	2.3	1.0
		Vanadium, Total	3.1	UG/L	0.50	1.0
		Zinc, Total	11.9	UG/L	0.40	1.0

Lionville Lababoratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 09/08/01

CLIENT: TNUHANFORD B00-063 H1454 LVL LOT #: 0108L501

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	01L0545-MB1	Silver, Total	0.50 u	UG/L	0.50	1.0
		Aluminum, Total	16.0 u	UG/L	16.0	1.0
		Barium, Total	0.34	UG/L	0.10	1.0
		Beryllium, Total	0.20 u	UG/L	0.20	1.0
		Calcium, Total	18.6	UG/L	7.8	1.0
		Cadmium, Total	0.30 u	UG/L	0.30	1.0
		Cobalt, Total	0.90 u	UG/L	0.90	1.0
		Chromium, Total	1.4 u	UG/L	1.4	1.0
		Copper, Total	0.50 u	UG/L	0.50	1.0
		Iron, Total	15.6 u	UG/L	15.6	1.0
		Potassium, Total	16.6	UG/L	10.7	1.0
		Magnesium, Total	11.2	UG/L	8.0	1.0
		Manganese, Total	0.10 u	UG/L	0.10	1.0
		Sodium, Total	40.6	UG/L	1.6	1.0
		Nickel, Total	1.7 u	UG/L	1.7	1.0
		Antimony, Total	2.3 u	UG/L	2.3	1.0
		Vanadium, Total	0.50 u	UG/L	0.50	1.0
		Zinc, Total	0.75	UG/L	0.40	1.0
BLANK1	01C0256-MB1	Mercury, Total	0.10 u	UG/L	0.10	1.0
BLANK1	01C0262-MB1	Mercury, Total	0.10 u	UG/L	0.10	1.0
BLANK2	01C0262-MB2	Mercury, TCLP Leachate	0.60	UG/L	0.10	1.0
BLANK3	01C0262-MB3	Mercury, TCLP Leachate	0.52	UG/L	0.10	1.0

Lionville Lababoratory, Inc.

INORGANICS ACCURACY REPORT 09/08/01

CLIENT: TNUHANFORD B00-063 H1454

LVL LOT #: 0108L501

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B12KF2	Mercury, Total	0.91	0.10u	1.0	90.6	1.0

Lionville Lababoratory, Inc.

INORGANICS ACCURACY REPORT 09/08/01

CLIENT: TNUHANFORD B00-063 H1454

LVL LOT #: 0108L501

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	B12KF3	Silver, Total	51.2	0.50u	50.0	102.4	1.0
		Aluminum, Total	2200	117	2000	104.3	1.0
		Barium, Total	1820	12.6	2000	90.4	1.0
		Beryllium, Total	47.9	0.31	50.0	95.2	1.0
		Calcium, Total	28200	4210	25000	96.0	1.0
		Cadmium, Total	46.6	0.30u	50.0	93.2	1.0
		Cobalt, Total	464	0.90u	500	92.7	1.0
		Chromium, Total	193	2.8	200	94.9	1.0
		Copper, Total	250	4.5	250	98.1	1.0
		Iron, Total	1040	84.6	1000	95.2	1.0
		Potassium, Total	2090000	2070000	25000	78.0*	40.0
		Magnesium, Total	41800	18900	25000	91.5	1.0
		Manganese, Total	506	19.4	500	97.4	1.0
		Sodium, Total	692000	672000	25000	79.3*	40.0
		Nickel, Total	483	24.3	500	91.7	1.0
		Antimony, Total	499	3.7	500	99.0	1.0
		Vanadium, Total	481	2.0	500	95.8	1.0
		Zinc, Total	516	9.6	500	101.2	1.0

Lionville Lababoratory, Inc.

INORGANICS PRECISION REPORT 09/08/01

CLIENT: TNUHANFORD B00-063 H1454 LVL LOT #: 0108L501

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B12KF2	Mercury, Total	0.10u	0.10u	NC	1.0

Lionville Lababoratory, Inc.

INORGANICS PRECISION REPORT 09/08/01

CLIENT: TNUHANFORD B00-063 H1454 LVL LOT #: 0108L501

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	B12KF3	Silver, Total	0.50u	0.50u	NC	1.0
		Aluminum, Total	117	106	10.2	1.0
		Barium, Total	12.6	12.1	4.0	1.0
		Beryllium, Total	0.31	0.27	13.8	1.0
		Calcium, Total	4210	4130	1.8	1.0
		Cadmium, Total	0.30u	0.30u	NC	1.0
		Cobalt, Total	0.90u	0.90u	NC	1.0
		Chromium, Total	2.8	2.2	24.0	1.0
		Copper, Total	4.5	4.2	6.9	1.0
		Iron, Total	84.6	80.4	5.1	1.0
		Potassium, Total	2070000	2040000	1.7	40.0
		Magnesium, Total	18900	18700	1.2	1.0
		Manganese, Total	19.4	19.1	1.6	1.0
		Sodium, Total	672000	658000	2.0	40.0
		Nickel, Total	24.3	24.2	0.41	1.0
		Antimony, Total	3.7	2.9	24.2	1.0
		Vanadium, Total	2.0	1.9	5.1	1.0
		Zinc, Total	9.6	8.2	15.7	1.0

Lionville Lababoratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 09/08/01

CLIENT: TNUHANFORD B00-063 H1454 LVL LOT #: 0108L501

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	01L0545-LC1	Silver, LCS	489	500	UG/L	97.8
		Aluminum, LCS	5160	5000	UG/L	103.3
		Barium, LCS	4850	5000	UG/L	97.1
		Beryllium, LCS	250	250	UG/L	100.1
		Calcium, LCS	24600	25000	UG/L	98.5
		Cadmium, LCS	246	250	UG/L	98.4
		Cobalt, LCS	2500	2500	UG/L	99.9
		Chromium, LCS	495	500	UG/L	99.0
		Copper, LCS	1260	1250	UG/L	100.5
		Iron, LCS	4990	5000	UG/L	99.8
		Potassium, LCS	26800	25000	UG/L	107.0
		Magnesium, LCS	25700	25000	UG/L	102.8
		Manganese, LCS	768	750	UG/L	102.4
		Sodium, LCS	25400	25000	UG/L	101.6
		Nickel, LCS	1990	2000	UG/L	99.3
		Antimony, LCS	3020	3000	UG/L	100.6
		Vanadium, LCS	2520	2500	UG/L	100.9
		Zinc, LCS	999	1000	UG/L	99.9
LCS1	01C0256-LC1	Mercury, LCS	5.0	5.0	UG/L	99.3
LCS1	01C0262-LC1	Mercury, LCS	4.8	5.0	UG/L	96.3

Lionville Laboratory Use Only
0108L501

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI 23

Client: TRU - Hanford B00-a03
Est. Final Proj. Sampling Date:
Project #: 11343-6006-001-9999-00
Project Contact/Phone #:
Lionville Laboratory Project Manager: OJ
QC: Spec Del: Std TAT: 30 day
Date Rec'd: 8-8-01 Date Due: 9-7-01

		ABC	DE	FGHI				J							
Refrigerator #		1	5	5	1				5						
#/Type Container	Liquid	3V	2AG	4AG	1				1AG						
	Solid														
Volume	Liquid	40	1L	1L	1				500						
	Solid														
Preservatives		HCl	-	-	1				HNO3						
ANALYSES REQUESTED		ORGANIC							INORG						
		VOA	BNA	Pest/PCB	Herb				Metal	CN					

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	0024H	0025H	0008H	OHBGK			Met①						
001	B12K F2			W	8/6/01	0803	✓	✓	✓	✓			✓						
002	3					0843	✓	✓	✓	✓			✓						
003	4					0843	✓	✓	✓	✓			✓						
004	1					0915	✓												
005	5					0925	✓	✓	✓	✓			✓						
006	6					0953	✓	✓	✓	✓			✓						
007	7					1025	✓	✓	✓	✓			✓						

Lionville Laboratory Use Only

Special Instructions: Saf B00-a03

Run Matrix QC

Met① = Al, Ag, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, Sb, V, Zn, Hg

DATE/REVISIONS:
1.
2.
3. 4235 7954 6233 3.1
4. 4235 7954 6211 4.9 — 4235 7954 6266 4.8
5. 4235 7954 6255 3.8
6.

Lionville Laboratory 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) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal 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. 3.2 °C

Relinquished by	Received by	Date	Time
[illegible]	D. [illegible]	8/8/01	0930

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL		

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:
4235 7954 6222

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-063-5	Page 1 of 1

Collector: Fahlberg/Bowers	Company Contact: W Thompson	Telephone No.: 372-9597	Project Coordinator: SHEA, DW
Price Code: 7N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: MODU TANK - Annual Sampling of Purgewater	Sampling Location: 200 East	SAF No.: B00-063	
Ice Chest No.: Cooler #2 Thru 4	Field Logbook No.: EL 1517-2	COA: HGWLTM3510	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A010320	Bill of Lading/Air Bill No.: 42357454 - SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT 8/7/01

Special Handling and/or Storage

Preservation	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C	Cool 4C								
Type of Container	aG	aG	aGs*	aG								
No. of Container(s)	1	2	3	4								
Volume	500mL	1000mL	40mL	1000mL								
SAMPLE ANALYSIS	ICP Metals - 6010A (TAL); Mercury - 7470 - (CV)	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	Pesticides - 8081; Herbicides - 8150A								
Sample No.	Matrix *	Sample Date	Sample Time									
B12KF2	WATER	8.6.01	0803	X	X	X	X					
B12KF3	WATER	8.6.01	0843	X	X	X	X					
B12KF4	WATER	8.6.01	0843	X	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By	Date/Time
Relinquished By	R. Fahlberg / R Fahlberg	8.6.01 1200	Stored in Ref 2-B	8-6-01 1200
Relinquished By	Removed from Ref 2B 3728	8.7.01 0900	R Thorer	8.7.01 0900
Relinquished By	R Thorer	8.7.01 0900	FED EX	
Relinquished By	Fed Ex	8.8.01 0930	D. Johnson	8.8.01 0930
Relinquished By			Received By	
Relinquished By			Received By	

SPECIAL INSTRUCTIONS

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 8/6/01
Collector not available to relenquish samples on 8/7/01 for shipment.

RT 8/7/01

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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-063-04	Page 1 of 1

Collector: Fahlberg/Bowers	Company Contact: W Thompson	Telephone No.: 372-9597	Project Coordinator: SHEA, DW
Price Code: 7N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: MODU TANK - Annual Sampling of Purgewater	Sampling Location: 200 East	SAF No.: B00-063	
Ice Chest No.: Cooler # 2 Thru 7	Field Logbook No.: EL 1517-2	COA: HGWLTM3510	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A010320	Bill of Lading/Air Bill No.: 4235754 - See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT 8/7/01

Special Handling and/or Storage

Preservation	HCl to pH <2 Cool 4C										
Type of Container	aGs*										
No. of Container(s)	3										
Volume	40mL										
SAMPLE ANALYSIS	VOA - 8260A (TCL)										

Sample No.	Matrix *	Sample Date	Sample Time									
B12KF1	WATER	8.6.01	0615	X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg / R. Fahlberg	1200 8.6.01	Stored in Ref 2B	1200 8.6.01
Removed from Ref 2B 3728	0700 8.7.01	R. Thoren	0900 8.7.01
R. Thoren	0900 8.7.01	FED EX	
FED EX	8.8.01 0930	D. Smith	8.8.01 0930

SPECIAL INSTRUCTIONS

Samples stored in Ref.#2B at the 3728 Shipping Facility on 8/6/01. Collector not available to relenquish samples on 8/7/01 for shipment.

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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-063-06	Page 1 of 1

Collector: Fahlberg/Bowers	Company Contact: W Thompson	Telephone No.: 372-9597	Project Coordinator: SHEA, DW
Project Designation: MODU TANK - Annual Sampling of Purgewater	Sampling Location: 200 East		SAF No.: B00-063
Ice Chest No.: Cooler # 2 Thru 7	Field Logbook No.: EL 1517-2	COA: HGWLTM3510	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A010320		Bill of Lading/Air Bill No.: 42357954 - SEE OSPC

Price Code: 7N

Air Quality ☐

Data Turnaround: 45 Days

26

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT 8.7.01

Special Handling and/or Storage

SAMPLE ANALYSIS													
Preservation				HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C	Cool 4C						
Type of Container				aG	aG	aGs*	aG						
No. of Container(s)				1	2	3	4						
Volume				500mL	1000mL	40mL	1000mL						
				ICP Metals - 6010A (TAL); Mercury - 7470 - (CV)	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	Pesticides - 8081; Herbicides - 8150A						
Sample No.	Matrix *	Sample Date	Sample Time										
B12KF5	WATER	8.6.01	0925	X	X	X	X						
B12KF6	WATER	8.6.01	0953	X	X	X	X						
B12KF7	WATER	8.6.01	1025	X	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg / R. Fahlberg	8.6.01 1200	~~Received By~~ Stored in Ref 2.B	8.6.01 1200
Relinquished By: Removed from Ref 2.B 3728	8.7.01 0400	Received By: R Thoren	8.7.01 0400
Relinquished By: R Thoren	8.7.01 0400	Received By: FED EX	Date/Time
Relinquished By: FED EX	8.8.01 0930	Received By: Tkppel	8.8.01 0930
Relinquished By: FED EX	8.8.01 0.D58.8.01	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 8/6/01. Collector not available to relenquish samples on 8/7/01 for shipment.

RT 8.7.01

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)

Lionville Laboratory, Inc.
HBGX ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-063 H1454

DATE RECEIVED: 08/08/01 LVL LOT # :0108L501

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B12KF2	001	W	01LE0946	08/06/01	08/13/01	08/15/01
B12KF3	002	W	01LE0946	08/06/01	08/13/01	08/15/01
B12KF4	003	W	01LE0946	08/06/01	08/13/01	08/15/01
B12KF5	005	W	01LE0946	08/06/01	08/13/01	08/15/01
B12KF6	006	W	01LE0946	08/06/01	08/13/01	08/15/01
B12KF6	006 MS	W	01LE0946	08/06/01	08/13/01	08/15/01
B12KF7	007	W	01LE0946	08/06/01	08/13/01	08/15/01

LAB QC:

PBLKNM	MB1	W	01LE0946	N/A	08/13/01	08/15/01
PBLKNM	MB1 BS	W	01LE0946	N/A	08/13/01	08/15/01

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU HANFORD B00-063
LVL#: 0108L501
SDG/SAF#: H1454/B00-063

W.O.#: 11343-606-001-9999-00
Date Received: 08-08-2001

HERBICIDE

Six (6) water samples were collected on 08-06-2001.

The samples and their associated QC samples were extracted on 08-13-2001 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 08-15-2001. The extraction and analysis procedure was based on method 8151.

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

1. The cooler temperature has been recorded on the chain-of-custody.
2. The required holding times for extraction and analysis have been met.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria. The matrix spike duplicate was lost during extraction. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. The CCV analyzed on the primary column at 11:49:28 on 08-15-2001 was low for the target compounds 2,4-D, Silvex, 2,4,5-T, 2,4-DB and Dichloroprop. All quantitation were reported from confirmation column. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
9. 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
Deputy Laboratory Manager
Lionville Laboratory Incorporated

08-31-01
Date

SEP 2001
RECEIVED

som\r:\group\data\herb\08L-501.her

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 10 pages.

208 Welsh Pool Road • Exton, PA 19341-1313 • (610) 280-3000 • Fax (610) 280-3041

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 01EX0136

Initiator: Bernard Foley Batch: 01081501 Parameter: OHBG
Date: 8/14/01 Samples: BS 8/28/01 LCS LCSD Matrix: W
Client: TNU Method: SW846/MCAWW/CLP/ Prep Batch: 01LE0946

1. Reason for SDR

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

b. General Discrepancy

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

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

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

approximately 1/2 of extract was lost prior to boilidown. flask containing extract was broken when attempting to breakup sodium sulfate

2. Known or Probable Causes(s)

analyst error.

3. Discussion and Proposed Action Other Description: Associated Batch has an MS/D + BS. BS 8/28/01

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

narrate

4. Project Manager Instructions...signature/date: 8/14/01

✓ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: 8/30/01 Other Explanation:

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

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

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
1	X Project Mgr: Stone/Johnson/Haslett	2	X GC/LC: Kiger
__	X Technical Mgr: Wesson/Daniels	__	__ MS: Rychlak/Layman
__	X QA (file): Alberts	__	__ Log-in: Keppel
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Beegle/Kiger	__	__ Other: _____

L-WI-006/E-01/01

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 016-0348

Initiator: Bryce Santoro Batch: 01081501 Parameter: OHBGX
Date: 8/27/01 Samples: all Matrix: Water
Client: TNV Method: SW846/MCAWW/CLP/ Prep Batch: 01LE0146

1. Reason for SDR

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

b. General Discrepancy

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

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

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

① ccv's low on primary side prior to samples. ccv's on confirmation side are fine. Quantitation of hits and spikes done from confirmation side data when necessary.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description:

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

4. Project Manager Instructions...signature/date: [signature] 8/27/01

__ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
✓ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: [signature] 8/27/01 Other Explanation:

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

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

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
✓	X Project Mgr: Stone/Johnson/Haslett	__	__ GC/LC: Kiger
__	X Technical Mgr: Wesson/Daniels	__	__ MS: Rychlak/Layman
__	X QA (file): Alberts	__	__ Log-in: Keppel
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Beegle/Kiger	__	__ Other: _____

L-WI-006/E-01/01

GLOSSARY OF HERBICIDE DATA

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

E = Indicates that the compound was detected beyond the calibration range.

I = Interference.

SUFFIXES

BS = Indicates blank spike in which reagent grade water is spiked with the matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

ABBREVIATIONS

D = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Reported.

SP = Indicates spiked compound.

Lionville Laboratory, Inc.

Herbicides, Special List

Report Date: 08/28/01 14:21

RFW Batch Number: 0108L501 Client: TNUHANFORD B00-063 H1454 Work Order: 11343606001 Page: 1

	Cust ID:	B12KF2	B12KF3	B12KF4	B12KF5	B12KF6	B12KF6
Sample Information	RFW#:	001	002	003	005	006	006 MS
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate:	DCAA	107 %	118 %	120 %	111 %	124 %	115 %
Dalapon		5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	79 %
Dicamba		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	110 %
Dichloroprop		5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	97 %
2,4-D		1.0 U	3.0	3.0	3.1	3.3	83 %
2,4,5-TP (Silvex)		0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	102 %
2,4,5-T		0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	115 %
2,4-DB		5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	98 %
Dinoseb		0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	47 %

	Cust ID:	B12KF7	PBLKNM	PBLKNM BS
Sample Information	RFW#:	007	01LE0946-MB1	01LE0946-MB1
	Matrix:	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L
Surrogate:	DCAA	122 %	104 %	109 %
Dalapon		5.1 U	5.0 U	69 %
Dicamba		2.0 U	2.0 U	104 %
Dichloroprop		5.1 U	5.0 U	98 %
2,4-D		3.3	1.0 U	97 %
2,4,5-TP (Silvex)		0.51 U	0.50 U	109 %
2,4,5-T		0.51 U	0.50 U	110 %
2,4-DB		5.1 U	5.0 U	98 %
Dinoseb		0.51 U	0.50 U	61 %

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

Lionville Laboratory Use Only
0108L501

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TMU: Hanford B00-0603
Est. Final Proj. Sampling Date:
Project #: 11343-6006-001-9999-00
Project Contact/Phone #:
Lionville Laboratory Project Manager: OJ
QC: Spec Del: Std TAT: 30 day
Date Rec'd: 8-8-01 Date Due: 9-7-01

		ABC	DE	FGHI	J
Refrigerator #		1	5	5-1	5
#/Type Container	Liquid	3V	2AG	4AG-1	1AG
	Solid				
Volume	Liquid	40	1L	1L-1	500
	Solid				
Preservatives		HCl	-	- -1	HNO3

ANALYSES REQUESTED →

ORGANIC				INORG	
VOA	BNA	Pest/PCB	Herb	Metal	CN

Lionville Laboratory Use Only

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	0624H	0625H	0608H	OHBGX	Met①
001	B12KF2			W	B1001	0803	✓	✓	✓	✓	✓
002	3					0843	✓	✓	✓	✓	✓
003	4					0843	✓	✓	✓	✓	✓
004	1					0615	✓				
005	5					0925	✓	✓	✓	✓	✓
006	6					0953	✓	✓	✓	✓	✓
007	7					1025	✓	✓	✓	✓	✓
	0608H ✓										
	OHBGX K										

Special Instructions: Saf B00-0603

Run Matrix QC

Met①: Al, Ag, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, Sb, V-, Zn, Hg

DATE/REVISIONS:

1.
2.
3. 4235 7954 6233 3.1
4. 4235 7954 6211 4.9 — 4235 7954 6266 4.8
5. 4235 7954 6255 3.8
6.

Relinquished by	Received by	Date	Time
Gleason	D. Amin	8/8/01	0930

Relinquished by	Received by	Date	Time
COMPOSITE	ORIGINAL		

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

Lionville Laboratory Use Only

Samples were:
1) Shipped ✓ or
Hand Delivered ___
Airbill # ___
See Back
2) Ambient or (Chilled)
3) Received in Good Condition (Y) or N
4) Samples Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

Tamper Resistant Seal 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. 3.2 °C

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-063-5	Page 1 of 1

Collector Fahlberg/Bowers	Company Contact W Thompson	Telephone No. 372-9597	Project Coordinator SHEA, DW
Price Code 7N	Data Turnaround 45 Days	Air Quality ☐	
Project Designation MODU TANK - Annual Sampling of Purgewater	Sampling Location 200 East		SAF No. B00-063
Ice Chest No. Cooler #2 Thru 4	Field Logbook No. EL 1517-2	COA HGWLTM3510	Method of Shipment Fed EX
Shipped To TMA/RECRA	Offsite Property No. A010320		Bill of Lading/Air Bill No. 42357454 - SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS
Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT 8/7/01

Special Handling and/or Storage

Preservation	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C	Cool 4C								
Type of Container	aG	aG	aGs*	aG								
No. of Container(s)	1	2	3	4								
Volume	500mL	1000mL	40mL	1000mL								
SAMPLE ANALYSIS	ICP Metals - 6010A (TAL); Mercury - 7470 - (CV)	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	Pesticides - 8081; Herbicides - 8150A								
Sample No.	Matrix *	Sample Date	Sample Time									
B12KF2	WATER	8.6.01	0803	X	X	X	X					
B12KF3	WATER	8.6.01	0843	X	X	X	X					
B12KF4	WATER	8.6.01	0843	X	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	Matrix *
Relinquished By R. Fahlberg / R Fahlberg Date/Time 1200 8.6.01	Received By Stored in Ref. 2-B Date/Time 1200 8-6-01	Samples stored in Ref.# 2B at the 3728 Shipping Facility on 8/6/01 Collector not available to relenquish samples on 8/7/01 for shipment. RT 8/7/01	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
Relinquished By Remote Truck Date/Time 0900 Ref 2B 3728 8.7.01	Received By R Thoren Date/Time 0900 8.7.01		
Relinquished By R Thoren Date/Time 0900 8.7.01	Received By FED EX Date/Time		
Relinquished By FED EX 8.8.01 0930	Received By D. Lyman Date/Time 8.8.01 0930		
Relinquished By Date/Time	Received By Date/Time		
Relinquished By Date/Time	Received By Date/Time		

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-063-04	Page 1 of 1

Collector Fahlberg/Bowers	Company Contact W Thompson	Telephone No. 372-9597	Project Coordinator SHEA, DW
Project Designation MODU TANK - Annual Sampling of Purgewater	Sampling Location 200 East		SAF No. B00-063
Ice Chest No. Cooler # 2 Thru 7	Field Logbook No. EL 1517-2	COA HGWLTM3510	Method of Shipment Fed EX
Shipped To TMA/RECRA	Offsite Property No. A010320		Bill of Lading/Air Bill No. 4235754 - See OSPC

Price Code 7N

Data Turnaround 45 Days

Air Quality ☐

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples did not originate in radiological controlled area. No total activity associated with sample/samples. FT 8/7/01

Special Handling and/or Storage

Preservation	HCl to pH <2 Cool 4C										
Type of Container	aGs*										
No. of Container(s)	3										
Volume	40mL										
SAMPLE ANALYSIS	VOA - 8260A (TCL)										
Sample No. / Matrix * / Sample Date / Sample Time											
B12KF1 / WATER / 8.6.01 / 0615	X										

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg / R. Fahlberg	1200 8.6.01	~~Received By~~ Stored in Ref 2B	1200 8.6.01
Removed from Ref 2B 3728	0900 8.7.01	R. R Thorn	0900 8.7.01
R. R Thorn	0900 8.7.01	FED EX	
Fed Ex	8.8.01 0930	D. Smith	8.8.01 0930

SPECIAL INSTRUCTIONS

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 8/6/01. Collector not available to relenquish samples on 8/7/01 for shipment.

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-063-06	Page 1 of 1

Collector: Fahlberg/Bowers	Company Contact: W Thompson	Telephone No.: 372-9597	Project Coordinator: SHEA, DW
Price Code: 7N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: MODU TANK - Annual Sampling of Purgewater	Sampling Location: 200 East	SAF No.: B00-063	
Ice Chest No.: Cooler # 2 Thru 7	Field Logbook No.: EL 1517-2	COA: HGWLTM3510	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A010320	Bill of Lading/Air Bill No.: 42357954 - SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT 8.7.01

Special Handling and/or Storage

Preservation	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C	Cool 4C						
Type of Container	aG	aG	aGs*	aG						
No. of Container(s)	1	2	3	4						
Volume	500mL	1000mL	40mL	1000mL						
SAMPLE ANALYSIS	ICP Metals - 6010A (TAL); Mercury - 7470 - (CV)	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	Pesticides - 8081; Herbicides - 8150A						

Sample No.	Matrix *	Sample Date	Sample Time										
B12KF5	WATER	8.6.01	0925	X	X	X	X						
B12KF6	WATER	8.6.01	0953	X	X	X	X						
B12KF7	WATER	8.6.01	1025	X	X	X	X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg / R. Fahlberg	1200 8.6.01	Stored in Ref 2.B.	1200 8.6.01
Removed from Ref 2.B 3728	0400 8.7.01	R Thoren	0400 8.7.01
R Thoren	0400 8.7.01	FED EX	
FedEx	8.8.01 0930	Tkppl	8.8.01 0930
~~FedEx 8.8.01~~	~~0930~~		

SPECIAL INSTRUCTIONS

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 8/6/01. Collector not available to relenquish samples on 8/7/01 for shipment.

RT 8.7.01

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

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-063 H1454

DATE RECEIVED: 08/08/01 LVL LOT # :0108L501

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B12KF2	001	W	01LE0937	08/06/01	08/09/01	08/31/01
B12KF2	001 MS	W	01LE0937	08/06/01	08/09/01	08/31/01
B12KF2	001 MSD	W	01LE0937	08/06/01	08/09/01	08/31/01
B12KF3	002	W	01LE0937	08/06/01	08/09/01	08/31/01
B12KF4	003	W	01LE0937	08/06/01	08/09/01	08/31/01
B12KF5	005	W	01LE0937	08/06/01	08/09/01	09/01/01
B12KF6	006	W	01LE0937	08/06/01	08/09/01	09/01/01
B12KF7	007	W	01LE0937	08/06/01	08/09/01	09/01/01

LAB QC:

PBLKND	MB1	W	01LE0937	N/A	08/09/01	08/31/01
PBLKND	MB1 BS	W	01LE0937	N/A	08/09/01	08/31/01

gw 09-06-01

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU HANFORD B00-063
LVL#: 0108L477
SDG/SAF#: H1454/ B00-063

W.O.#: 11343-606-001-9999-00
Date Received: 08-08-01

PESTICIDE/PCB

The set of samples consisted of six (6) water samples collected on 08-06-01.

The samples and their associated QC samples were extracted on 08-09-01 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 08-31-01 and 09-01-01. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8081 for Pesticides and Aroclors.

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

1. The cooler temperature has been recorded on the chain-of-custody.
2. All required holding times for extraction and analysis have been met.
3. The method blank was below the reporting limits for all target compounds.
4. One (1) of twenty (20) surrogate recoveries was outside QC limits; however, the surrogate recovery acceptance criteria were met (i.e., no more than one outlier per sample).
5. One (1) of six (6) blank spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
6. Five (5) of twelve (12) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. 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 designee, as verified by the following signature.

by

Iain Daniels
Deputy Laboratory Manager
Lionville Laboratory Incorporated

09-07-01
Date

SEP 2001 RECEIVED

pef\r:\group\data\pest\08L-501.pes

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 12 pages.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 01GL354

Initiator: M. Kobel
Date: 9/3/01
Client: TNU
Batch: 01081501
Samples: MS, MSD, BS
Method: SW846/MCAWW/CLP/
Parameter: 0608H
Matrix: water
Prep Batch: 01LE0737

1. Reason for SDR

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

b. General Discrepancy

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

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

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

① low recoveries in MSD (see attached). 4,4'-DDE present in MSD @ 0.20 ppb due to DDT breaking down

② low gamma-BHC recoveries in MS and BS. Both @ 55% (QC limit is 56%.)

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

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

Other Description:

Major problem appears to be related to the MSD. Report and Narrate.

4. Project Manager Instructions...signature/date: [signature] 9/3/01

__ Concur with Proposed Action
✓ Disagree with Proposed Action; See Instruction
✓ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: [signature] 9/3/01

Other Explanation:

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

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

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
✓	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
__	X Project Mgr: Stone/Johnson/Haslett	__	__ GC/LC: Kiger
__	X Technical Mgr: Wesson/Daniels	__	__ MS: Rychlak/Layman
__	X QA (file): Alberts	__	__ Log-in: Keppel
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Beegle/Kiger	__	__ Other: _____

L-WI-006/E-01/01

GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP = Indicates Spiked Compound.

GLOSSARY OF PESTICIDE/PCB DATA

P = This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".

D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.

C = This flag applies to a compound that has been confirmed by GC/MS.

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 09/03/01 09:37

RFW Batch Number: **0108L501** Client: **TNUHANFORD B00-063 H1454** Work Order: 11343606001 Page: 1

6

	Cust ID:	B12KF2		B12KF2		B12KF2		B12KF3		B12KF4		B12KF5	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		005	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
Surrogate:	Decachlorobiphenyl	58	%	73	%	4 *	%	46	%	60	%	60	%
	Tetrachloro-m-xylene	75	%	70	%	75	%	55	%	58	%	48	%
			fl		fl		fl		fl		fl		fl
Alpha-BHC		0.050	U	0.050	U	0.050	U	0.050	U	0.050	U	0.050	U
Beta-BHC		0.050	U	0.050	U	0.050	U	0.050	U	0.050	U	0.050	U
Delta-BHC		0.050	U	0.050	U	0.050	U	0.050	U	0.050	U	0.050	U
gamma-BHC (Lindane)		0.050	U	55 *	%	0 *	%	0.050	U	0.050	U	0.050	U
Heptachlor		0.050	U	50	%	5 *	%	0.050	U	0.050	U	0.050	U
Aldrin		0.050	U	55	%	50	%	0.050	U	0.050	U	0.050	U
Heptachlor epoxide		0.050	U	0.050	U	0.050	U	0.050	U	0.050		0.050	U
Endosulfan I		0.050	U	0.050	U	0.050	U	0.050	U	0.050	U	0.050	U
Dieldrin		0.10	U	86	%	58	%	0.10	U	0.10	U	0.10	U
4,4'-DDE		0.10	U	0.10	U	0.20		0.10	U	0.10	U	0.10	U
Endrin		0.10	U	76	%	10 *	%	0.10	U	0.10	U	0.10	U
Endosulfan II		0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
4,4'-DDD		0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
Endosulfan sulfate		0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
4,4'-DDT		0.10	U	64	%	0 *	%	0.10	U	0.10	U	0.10	U
Methoxychlor		0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
Endrin ketone		0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
Endrin aldehyde		0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
alpha-Chlordane		0.050	U	0.050	U	0.050	U	0.050	U	0.050	U	0.050	U
gamma-Chlordane		0.050	U	0.050	U	0.050	U	0.050	U	0.050	U	0.050	U
Toxaphene		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Aroclor-1016		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor-1221		2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Aroclor-1232		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor-1242		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor-1248		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor-1254		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor-1260		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U

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

09.06.01

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 09/03/01 09:37

RFW Batch Number: 0108L501 Client: TNUHANFORD B00-063 H1454 Work Order: 11343606001 Page: 2

	Cust ID:	B12KF6	B12KF7	PBLKND	PBLKND BS
Sample Information	RFW#:	006	007	01LE0937-MB1	01LE0937-MB1
	Matrix:	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L
Surrogate:	Decachlorobiphenyl	70 %	55 %	33 %	91 %
	Tetrachloro-m-xylene	62 %	52 %	55 %	85 %
Alpha-BHC		0.050 U	0.050 U	0.050 U	0.050 U
Beta-BHC		0.050 U	0.050 U	0.050 U	0.050 U
Delta-BHC		0.050 U	0.050 U	0.050 U	0.050 U
gamma-BHC (Lindane)		0.050 U	0.050 U	0.050 U	55 * %
Heptachlor		0.050 U	0.050 U	0.050 U	60 %
Aldrin		0.050 U	0.050 U	0.050 U	65 %
Heptachlor epoxide		0.050 U	0.050 U	0.050 U	0.050 U
Endosulfan I		0.050 U	0.050 U	0.050 U	0.050 U
Dieldrin		0.10 U	0.10 U	0.10 U	80 %
4,4'-DDE		0.10 U	0.10 U	0.10 U	0.10 U
Endrin		0.10 U	0.10 U	0.10 U	72 %
Endosulfan II		0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDD		0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan sulfate		0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT		0.10 U	0.10 U	0.10 U	46 %
Methoxychlor		0.50 U	0.50 U	0.50 U	0.50 U
Endrin ketone		0.10 U	0.10 U	0.10 U	0.10 U
Endrin aldehyde		0.10 U	0.10 U	0.10 U	0.10 U
alpha-Chlordane		0.050 U	0.050 U	0.050 U	0.050 U
gamma-Chlordane		0.050 U	0.050 U	0.050 U	0.050 U
Toxaphene		5.0 U	5.0 U	5.0 U	5.0 U
Aroclor-1016		1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1221		2.0 U	2.0 U	2.0 U	2.0 U
Aroclor-1232		1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1242		1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1248		1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1254		1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1260		1.0 U	1.0 U	1.0 U	1.0 U

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

Lionville Laboratory Use Only
0108L501

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI LIONVILLE LABORATORY INC

Client: TMU- Hanford B00-a03
Est. Final Proj. Sampling Date:
Project #: 11343-6006-001-9999-00
Project Contact/Phone #:
Lionville Laboratory Project Manager: OJ
QC: Spec Del: Std TAT: 30 day
Date Rec'd: 8-8-01 Date Due: 9-7-01

		ABC	DE	FGHI				J							
Refrigerator #		1	5	5	7			5							
#/Type Container	Liquid	3V	2AG	4AG	7			1AG							
	Solid														
Volume	Liquid	40	1L	1L	7			500							
	Solid														
Preservatives		HCl	-	-	7			HNO3							
ANALYSES REQUESTED →		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb			Metal	CN						
		Lionville Laboratory Use Only													
		0624H	0625H	0608H	OHBGK			Met①							

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	0624H	0625H	0608H	OHBGK				Met①							
001	B12KF2			W	8/8/01	0803	✓	✓	✓	✓				✓							
002	3					0843	✓	✓	✓	✓				✓							
003	4					0843	✓	✓	✓	✓				✓							
004	1					0615	✓														
005	5					0925	✓	✓	✓	✓				✓							
006	6					0953	✓	✓	✓	✓				✓							
007	7					1025	✓	✓	✓	✓				✓							

Special Instructions: Saf B00-a03

Run Matrix QC

Met①: Al, Ag, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, Sb, V, Zn, Hg

DATE/REVISIONS:

1.
2.
3. 4235 7954 6233 3.1
4. 4235 7954 6211 4.9 — 4235 7954 6266 4.8
5. 4235 7954 6255 3.8
6.

Relinquished by	Received by	Date	Time
Fedex	D. Johnson	8/8/01	0930

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL		

Discrepancies Between Samples Labels and COC Record? Y or (N)
NOTES:
4235 7954 6222

Lionville Laboratory 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) Samples Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

Tamper Resistant Seal 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. 3.2 °C

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-063-5	Page 1 of 1

Collector Fahlberg/Bowers	Company Contact W Thompson	Telephone No. 372-9597	Project Coordinator SHEA, DW
Price Code 7N	Data Turnaround 45 Days	Air Quality ☐	
Project Designation MODU TANK - Annual Sampling of Purgewater	Sampling Location 200 East	SAF No. B00-063	
Ice Chest No. Cooler #2 Thru 4	Field Logbook No. EL 1517-2	COA HGWLTM3510	Method of Shipment Fed EX
Shipped To TMA/RECRA	Offsite Property No. A010320	Bill of Lading/Air Bill No. 4235795 4 - SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT 8/7/01

Special Handling and/or Storage

Preservation	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C	Cool 4C							
Type of Container	aG	aG	aGs*	aG							
No. of Container(s)	1	2	3	4							
Volume	500mL	1000mL	40mL	1000mL							
SAMPLE ANALYSIS	ICP Metals - 6010A (TAL); Mercury - 7470 - (CV)	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	Pesticides - 8081; Herbicides - 8150A							
Sample No.	Matrix *	Sample Date	Sample Time								
B12KF2	WATER	8.6.01	0803	X	X	X	X				
B12KF3	WATER	8.6.01	0843	X	X	X	X				
B12KF4	WATER	8.6.01	0843	X	X	X	X				

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By R. Fahlberg / R Fahlberg	Date/Time 1200 8.6.01	Received By Stored in Ref 2-B	Date/Time 1200 8-6-01
Relinquished By Removed from Ref 2B 3728	Date/Time 0900 8.7.01	Received By R Thoren	Date/Time 0900 8.7.01
Relinquished By R Thoren	Date/Time 0900 8.7.01	Received By FED EX	Date/Time
Relinquished By Fed Ex	Date/Time 8.8.01 0930	Received By D. Johnson	Date/Time 8.8.01 0930
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 8/6/01
Collector not available to relenquish samples on 8/7/01 for shipment.

RT 8/7/01

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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-063-04	Page 1 of 1

Collector Fahlberg/Bowers	Company Contact W Thompson	Telephone No. 372-9597	Project Coordinator SHEA, DW	Price Code 7N	Data Turnaround 45 Days
Project Designation MODU TANK - Annual Sampling of Purgewater	Sampling Location 200 East		SAF No. B00-063	Air Quality ☐	
Ice Chest No. Cooler # 2 Thru 7	Field Logbook No. EL 1517-2	COA HGWLTM3510	Method of Shipment Fed EX		
Shipped To TMA/RECRA	Offsite Property No. A010320		Bill of Lading/Air Bill No. 4235 7154 - See OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT 8/7/01

Special Handling and/or Storage

Preservation	HCl to pH <2 Cool 4C											
Type of Container	aGs*											
No. of Container(s)	3											
Volume	40mL											
SAMPLE ANALYSIS	VOA - 8260A (TCL)											
Sample No.	Matrix *	Sample Date	Sample Time									
B12KF1	WATER	8.6.01	0615	X								

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By: R. Fahlberg / R. Fahlberg Date/Time 1200	~~Received By~~ Stored in Ref 2 B Date/Time 1200 8.6.01	Samples stored in Ref.#2B at the 3728 Shipping Facility on 8/6/01. Collector not available to relenquish samples on 8/7/01 for shipment.
Relinquished By: Removed from Ref 2B 3728 Date/Time 0900 8.7.01	Received By: R. Thoren Date/Time 0900 8.7.01	
Relinquished By: R. Thoren Date/Time 0900 8.7.01	Received By: FED EX Date/Time	
Relinquished By: Fed Ex Date/Time 8.8.01 0930	Received By: D. Smith Date/Time 8.8.01 0930	
Relinquished By: Date/Time	Received By: Date/Time	
Relinquished By: Date/Time	Received By: Date/Time	

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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-063-06	Page 1 of 1

Collector: Fahlberg/Bowers	Company Contact: W Thompson	Telephone No.: 372-9597	Project Coordinator: SHEA, DW
Project Designation: MODU TANK - Annual Sampling of Purgewater	Sampling Location: 200 East		SAF No.: B00-063
Ice Chest No.: Cooler # 2 Thru 7	Field Logbook No.: EL 1517-2	COA: HGWLTM3510	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A010320		Bill of Lading/Air Bill No.: 42357954 - SEE OSPC

Price Code: 7N

Data Turnaround: 45 Days

Air Quality: ☐

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT 8.7.01

Special Handling and/or Storage

Preservation	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C	Cool 4C								
Type of Container	aG	aG	aGs*	aG								
No. of Container(s)	1	2	3	4								
Volume	500mL	1000mL	40mL	1000mL								
SAMPLE ANALYSIS	ICP Metals - 6010A (TAL); Mercury - 7470 - (CV)	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	Pesticides - 8081; Herbicides - 8150A								
Sample No.	Matrix *	Sample Date	Sample Time									
B12KF5	WATER	8.6.01	0925	X	X	X	X					
B12KF6	WATER	8.6.01	0953	X	X	X	X					
B12KF7	WATER	8.6.01	1025	X	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By: R. Fahl / R. Fahlberg Date/Time: 1200 8.6.01	Received By: Stored in Ref 2-B Date/Time: 1200 8.6.01	Samples stored in Ref.# 2B at the 3728 Shipping Facility on 8/6/01. Collector not available to relenquish samples on 8/7/01 for shipment. RT 8.7.01
Relinquished By: Removed from Ref 2-B 3728 Date/Time: 0400 8.7.01	Received By: R Thorer Date/Time: 0400 8.7.01	
Relinquished By: R Thorer Date/Time: 0400 8-7-01	Received By: FED EX Date/Time:	
Relinquished By: Fed Ex 8.8.01 Date/Time: 0930	Received By: Tkppl 8.8.01 Date/Time: 0930	
Relinquished By: ~~Fed Ex 8.8.01 Date/Time: 0930~~	Received By: Date/Time:	
Relinquished By: Date/Time:	Received By: Date/Time:	

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)

Figure 1. Sample Check-in List

Date/Time Received: 8-8-01 / 0930

SDG#: 01081501

Work Order Number: _____ SAF# _____

Shipping Container ID: SML523 ERC00005 / ERC99-065 -038 -045 -039 Chain of Custody # _____

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 3.8°, 4.8°, 4.9°, 3.1°, 3.2°, 2°
5. Vermiculite/packing materials is Wet [ ] Dry [✓]
6. Number of samples in shipping container: 63
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ____ tape
   - ____ hazard labels
   - ✓ custody seals
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ leaking
   - ____ broken
   - ____ have air bubbles

10. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Thippil / LVLI Date: 8-8-01

Telephoned to: _____ On _____ By _____

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-063 H1454

DATE RECEIVED: 08/08/01 LVL LOT # :0108L501

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B12KF2	001	W	01LE0938	08/06/01	08/09/01	08/13/01
B12KF3	002	W	01LE0938	08/06/01	08/09/01	08/13/01
B12KF4	003	W	01LE0938	08/06/01	08/09/01	08/13/01
B12KF4	003 MS	W	01LE0938	08/06/01	08/09/01	08/13/01
B12KF4	003 MSD	W	01LE0938	08/06/01	08/09/01	08/13/01
B12KF5	005	W	01LE0938	08/06/01	08/09/01	08/14/01
B12KF6	006	W	01LE0938	08/06/01	08/09/01	08/14/01
B12KF7	007	W	01LE0938	08/06/01	08/09/01	08/14/01

LAB QC:

SBLKDM	MB1	W	01LE0938	N/A	08/09/01	08/13/01
SBLKDM	MB1 BS	W	01LE0938	N/A	08/09/01	08/13/01

LIONVILLE LABORATORY INC.

Client: TNU-HANFORD B00-063
LVL #: 0108L501
SDG/SAF #: H1454/B00-063

W.O. #: 11343-606-001-9999-00
Date Received: 08-08-2001

SEMIVOLATILE

Six (6) water samples were collected on 08-06-2001.

The samples and their associated QC samples were extracted on 08-09-2001 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 08-13,14-2001.

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

1. The cooler temperature upon receipt has been recorded on the chain-of-custody.
2. Samples were extracted and analyzed within required holding times.
3. Non-target compounds were detected in the samples.
4. Sample B12KF7 required a 2-fold dilution due to high levels of non-target compounds.
5. Three (3) of sixty (60) surrogate recoveries were outside EPA QC limits. The out of criteria surrogate recoveries of sample B12KF4 were slightly low; however, the matrix spike analyses yielded surrogate recoveries that were within criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
6. Three (3) of twenty-two (22) matrix spike recoveries were outside EPA QC limits.
7. All blank spike recoveries were within EPA QC limits.
8. The method blank contained the common laboratory contaminants Di-n-butylphthalate, Bis(2-Ethylhexyl)phthalate and the target compound Phenol at levels less than the CRQL.
9. Internal standard area criteria were not met for sample B12KF4 MS. The analysis of associated B12KF4 MSD fulfills the reanalysis requirement.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

J. Michael Taylor
President
Lionville Laboratory Incorporated

9/7/01
Date

SEP 2001 RECEIVED

som\gorup\data\bna\tnu-hanford-0108-501.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 21 pages.

208 Welsh Pool Road • Exton, PA 19341-1313 • (610) 280-3000 • Fax (610) 280-3041

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 01MS273

Initiator: John W. Smith Batch: 0108L 501 Parameter: 0625H
Date: 8/15/01 Samples: 003, 003T Matrix: Water
Client: Two Hanford Bor-003 H1454 Method: SW846/MCAWW/CLP/ Prep Batch: 01L20935

1. Reason for SDR

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

b. General Discrepancy

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

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

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

1) Two surrogates fail low in sample -003.
2) Three spikes fail low in -003 MSD.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

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

Other Description:

MS & BS meet criteria. BKgd ~~and~~ RE JWS 8/15/01 is not confirmed by MS/MSD.

Narrate

4. Project Manager Instructions...signature/date: Susan Johnson 9/6/01

✓ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
✓ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: CT 9/6/01

Other Explanation:

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

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

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
__	X Project Mgr: Stone/Johnson/Haslett	__	__ GC/LC: Kiger
__	X Technical Mgr: Wesson/Daniels	__	__ MS: Rychlak/Layman
__	X QA (file): Alberts	__	__ Log-in: Keppel
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Beegle/Kiger	__	__ Other: _____

L-WI-006/E-01/01

GLOSSARY OF BNA DATA

DATA QUALIFIERS

U	=	Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
J	=	Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
B	=	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
E	=	Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
D	=	Identifies all compounds identified in an analysis at a secondary dilution factor.
I	=	Interference.
NQ	=	Result qualitatively confirmed but not able to quantify.
A	=	Indicates that a TIC is a suspected aldol-condensation product.
N	=	Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
X	=	This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
Y	=	Additional qualifiers used as required are explained in the case narrative.

VLI
LIONVILLE LABORATORY INC

GLOSSARY OF BNA DATA

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

LIONVILLE LABORATORY INC

TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quantitation modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quantitation modifications:

MP - Missed Peak: manually added peak not found by automatic quantitation program.

PA - Peak Assignment: quantitation report was changed to reflect correct peak assignment.

RI - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.

SP - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.

CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.

PI - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 08/23/01 11:18

RFW Batch Number: **0108L501** Client: **TNUHANFORD B00-063 H1454** Work Order: 11343606001 Page: 1a

	Cust ID:	B12KF2	B12KF3	B12KF4	B12KF4	B12KF4	B12KF5
Sample Information	RFW#:	001	002	003	003 MS	003 MSD	005
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate Recovery	Nitrobenzene-d5	40 %	58 %	39 %	65 %	42 %	68 %
	2-Fluorobiphenyl	40 * %	52 %	38 * %	55 %	44 %	57 %
	Terphenyl-d14	49 %	46 %	19 * %	36 %	40 %	37 %
	Phenol-d5	34 %	44 %	39 %	43 %	36 %	60 %
	2-Fluorophenol	36 %	49 %	45 %	43 %	39 %	55 %
	2,4,6-Tribromophenol	32 %	31 %	38 %	53 %	49 %	52 %
		fl	fl	fl	fl	fl	fl
Phenol		10 U	10 U	10 U	43 %	36 %	0.5 JB
bis(2-Chloroethyl)ether		10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol		10 U	10 U	10 U	53 %	40 %	10 U
1,3-Dichlorobenzene		10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene		10 U	10 U	10 U	42 %	31 * %	10 U
1,2-Dichlorobenzene		10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol		10 U	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis(1-Chloropropane)		10 U	10 U	10 U	10 U	10 U	10 U
3- and/or 4-Methylphenol		10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine		10 U	10 U	10 U	69 %	35 * %	10 U
Hexachloroethane		10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene		10 U	10 U	10 U	10 U	10 U	10 U
Isophorone		10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol		10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol		10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane		10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol		10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene		10 U	10 U	10 U	47 %	34 * %	10 U
Naphthalene		10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline		10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene		10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol		10 U	10 U	10 U	50 %	44 %	10 U
2-Methylnaphthalene		10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene		10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol		10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol		25 U	25 U	25 U	25 U	25 U	25 U

*= Outside of EPA CLP QC limits.

Cust ID:	B12KF2		B12KF3		B12KF4		B12KF4		B12KF4		B12KF5	
RFW#:	001		002		003		003 MS		003 MSD		005	
2-Chloronaphthalene	10	U	10	U	10	U	10	U	10	U	10	U
2-Nitroaniline	25	U	25	U	25	U	25	U	25	U	25	U
Dimethylphthalate	10	U	10	U	10	U	10	U	10	U	10	U
Acenaphthylene	10	U	10	U	10	U	10	U	10	U	10	U
2,6-Dinitrotoluene	10	U	10	U	10	U	10	U	10	U	10	U
3-Nitroaniline	25	U	25	U	25	U	25	U	25	U	25	U
Acenaphthene	10	U	10	U	10	U	57	%	47	%	10	U
2,4-Dinitrophenol	25	U	25	U	25	U	25	U	25	U	25	U
4-Nitrophenol	25	U	25	U	25	U	32	%	58	%	25	U
Dibenzofuran	10	U	10	U	10	U	10	U	10	U	10	U
2,4-Dinitrotoluene	10	U	10	U	10	U	63	%	49	%	10	U
Diethylphthalate	10	U	10	U	10	U	0.5	J	10	U	10	U
4-Chlorophenyl-phenylether	10	U	10	U	10	U	10	U	10	U	10	U
Fluorene	10	U	10	U	10	U	10	U	10	U	10	U
4-Nitroaniline	25	U	25	U	25	U	25	U	25	U	25	U
4,6-Dinitro-2-methylphenol	25	U	25	U	25	U	25	U	25	U	25	U
N-Nitrosodiphenylamine (1)	10	U	10	U	10	U	10	U	10	U	10	U
4-Bromophenyl-phenylether	10	U	10	U	10	U	10	U	10	U	10	U
Hexachlorobenzene	10	U	10	U	10	U	10	U	10	U	10	U
Pentachlorophenol	25	U	25	U	25	U	42	%	47	%	25	U
Phenanthrene	10	U	10	U	10	U	10	U	10	U	10	U
Anthracene	10	U	10	U	10	U	10	U	10	U	10	U
Carbazole	10	U	10	U	10	U	10	U	10	U	10	U
Di-n-butylphthalate	10	U	10	U	10	U	2	JB	1	JB	1	JB
Fluoranthene	10	U	10	U	10	U	10	U	10	U	10	U
Pyrene	10	U	10	U	10	U	58	%	47	%	10	U
Butylbenzylphthalate	10	U	10	U	10	U	10	U	10	U	10	U
3,3'-Dichlorobenzidine	10	U	10	U	10	U	10	U	10	U	10	U
Benzo(a)anthracene	10	U	10	U	10	U	10	U	10	U	10	U
Chrysene	10	U	10	U	10	U	10	U	10	U	10	U
bis(2-Ethylhexyl)phthalate	0.9	JB	0.8	JB	0.8	JB	2	JB	1	JB	2	JB
Di-n-octyl phthalate	10	U	10	U	10	U	10	U	10	U	10	U
Benzo(b)fluoranthene	10	U	10	U	10	U	10	U	10	U	10	U
Benzo(k)fluoranthene	10	U	10	U	10	U	10	U	10	U	10	U
Benzo(a)pyrene	10	U	10	U	10	U	10	U	10	U	10	U
Indeno(1,2,3-cd)pyrene	10	U	10	U	10	U	10	U	10	U	10	U
Dibenz(a,h)anthracene	10	U	10	U	10	U	10	U	10	U	10	U
Benzo(g,h,i)perylene	10	U	10	U	10	U	10	U	10	U	10	U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 08/23/01 11:18

RFW Batch Number: **0108L501** Client: **TNUHANFORD B00-063 H1454** Work Order: 11343606001 Page: 2a

	Cust ID:	B12KF6		B12KF7		SBLKDM		SBLKDM BS	
Sample Information	RFW#:	006		007		01LE0938-MB1		01LE0938-MB1	
	Matrix:	WATER		WATER		WATER		WATER	
	D.F.:	1.00		2.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L	
Surrogate Recovery	Nitrobenzene-d5	61	%	61	%	77	%	67	%
	2-Fluorobiphenyl	57	%	59	%	68	%	66	%
	Terphenyl-d14	51	%	48	%	86	%	88	%
	Phenol-d5	55	%	48	%	65	%	58	%
	2-Fluorophenol	52	%	54	%	68	%	57	%
	2,4,6-Tribromophenol	55	%	56	%	64	%	64	%
Phenol		0.5	JB	20	U	0.6	J	60	%
bis(2-Chloroethyl)ether		10	U	20	U	10	U	10	U
2-Chlorophenol		10	U	20	U	10	U	62	%
1,3-Dichlorobenzene		10	U	20	U	10	U	10	U
1,4-Dichlorobenzene		10	U	20	U	10	U	48	%
1,2-Dichlorobenzene		10	U	20	U	10	U	10	U
2-Methylphenol		10	U	20	U	10	U	10	U
2,2'-oxybis(1-Chloropropane)		10	U	20	U	10	U	10	U
3- and/or 4-Methylphenol		10	U	20	U	10	U	10	U
N-Nitroso-di-n-propylamine		10	U	20	U	10	U	68	%
Hexachloroethane		10	U	20	U	10	U	10	U
Nitrobenzene		10	U	20	U	10	U	10	U
Isophorone		10	U	20	U	10	U	10	U
2-Nitrophenol		10	U	20	U	10	U	10	U
2,4-Dimethylphenol		10	U	20	U	10	U	10	U
bis(2-Chloroethoxy)methane		10	U	20	U	10	U	10	U
2,4-Dichlorophenol		10	U	20	U	10	U	10	U
1,2,4-Trichlorobenzene		10	U	20	U	10	U	50	%
Naphthalene		10	U	20	U	10	U	10	U
4-Chloroaniline		10	U	20	U	10	U	10	U
Hexachlorobutadiene		10	U	20	U	10	U	10	U
4-Chloro-3-methylphenol		10	U	20	U	10	U	71	%
2-Methylnaphthalene		10	U	20	U	10	U	10	U
Hexachlorocyclopentadiene		10	U	20	U	10	U	10	U
2,4,6-Trichlorophenol		10	U	20	U	10	U	10	U
2,4,5-Trichlorophenol		25	U	50	U	25	U	25	U

*= Outside of EPA CLP QC limits.

Cust ID:	B12KF6		B12KF7		SBLKDM		SBLKDM BS	
RFW#:	006		007		01LE0938-MB1		01LE0938-MB1	
2-Chloronaphthalene	10	U	20	U	10	U	10	U
2-Nitroaniline	25	U	50	U	25	U	25	U
Dimethylphthalate	10	U	20	U	10	U	10	U
Acenaphthylene	10	U	20	U	10	U	10	U
2,6-Dinitrotoluene	10	U	20	U	10	U	10	U
3-Nitroaniline	25	U	50	U	25	U	25	U
Acenaphthene	10	U	20	U	10	U	72	%
2,4-Dinitrophenol	25	U	50	U	25	U	25	U
4-Nitrophenol	25	U	50	U	25	U	55	%
Dibenzofuran	10	U	20	U	10	U	10	U
2,4-Dinitrotoluene	10	U	20	U	10	U	81	%
Diethylphthalate	10	U	20	U	10	U	10	U
4-Chlorophenyl-phenylether	10	U	20	U	10	U	10	U
Fluorene	10	U	20	U	10	U	10	U
4-Nitroaniline	25	U	50	U	25	U	25	U
4,6-Dinitro-2-methylphenol	25	U	50	U	25	U	25	U
N-Nitrosodiphenylamine (1)	10	U	20	U	10	U	10	U
4-Bromophenyl-phenylether	10	U	20	U	10	U	10	U
Hexachlorobenzene	10	U	20	U	10	U	10	U
Pentachlorophenol	25	U	50	U	25	U	25	%
Phenanthrene	10	U	20	U	10	U	10	U
Anthracene	10	U	20	U	10	U	10	U
Carbazole	10	U	20	U	10	U	10	U
Di-n-butylphthalate	0.9	JB	1	JB	2	J	2	JB
Fluoranthene	10	U	20	U	10	U	10	U
Pyrene	10	U	20	U	10	U	81	%
Butylbenzylphthalate	10	U	20	U	10	U	10	U
3,3'-Dichlorobenzidine	10	U	20	U	10	U	10	U
Benzo(a)anthracene	10	U	20	U	10	U	10	U
Chrysene	10	U	20	U	10	U	10	U
bis(2-Ethylhexyl)phthalate	3	JB	2	JB	3	J	5	JB
Di-n-octyl phthalate	10	U	20	U	10	U	10	U
Benzo(b)fluoranthene	10	U	20	U	10	U	10	U
Benzo(k)fluoranthene	10	U	20	U	10	U	10	U
Benzo(a)pyrene	10	U	20	U	10	U	10	U
Indeno(1,2,3-cd)pyrene	10	U	20	U	10	U	10	U
Dibenz(a,h)anthracene	10	U	20	U	10	U	10	U
Benzo(g,h,i)perylene	10	U	20	U	10	U	10	U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B12KF2

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B00-063 H1454

Matrix: (soil/water) WATER

Lab Sample ID: 0108L501-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A081308

Level: (low/med) LOW

Date Received: 08/08/01

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 08/09/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/13/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	21.089	4	JB
2.	UNKNOWN	21.108	5	JB
3.	UNKNOWN	22.193	10	JB
4.	UNKNOWN	22.450	10	JB
5.	UNKNOWN	23.502	4	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B12KF3

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B00-063 H1454

Matrix: (soil/water) WATER

Lab Sample ID: 0108L501-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A081309

Level: (low/med) LOW

Date Received: 08/08/01

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 08/09/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/13/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 10

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	DICHLOROISOCYANATOBENZENE	12.766	1	J
2.	UNKNOWN	19.261	2	J
3.	UNKNOWN	22.195	7	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B12KF4

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B00-063 H1454

Matrix: (soil/water) WATER

Lab Sample ID: 0108L501-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A081310

Level: (low/med) LOW

Date Received: 08/08/01

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 08/09/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/13/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 10

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	20.812	5	JB
2.	UNKNOWN	22.168	8	JB
3.	UNKNOWN	22.187	10	JB
4.	UNKNOWN	22.445	20	JB
5.	UNKNOWN	23.505	6	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B12KF5

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B00-063 H1454

Matrix: (soil/water) WATER

Lab Sample ID: 0108L501-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A081405

Level: (low/med) LOW

Date Received: 08/08/01

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 08/09/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/14/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 10

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	DICHLOROISOCYANATOBENZENE	12.649	2	J
2.	UNKNOWN	20.999	10	JB
3.	UNKNOWN	21.032	10	JB
4.	UNKNOWN	22.126	20	JB
5.	UNKNOWN	22.385	40	JB
6.	UNKNOWN	25.250	9	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B12KF6

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B00-063 H1454

Matrix: (soil/water) WATER

Lab Sample ID: 0108L501-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A081404

Level: (low/med) LOW

Date Received: 08/08/01

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 08/09/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/14/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 10

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	DICHLOROISOCYANATOBENZENE	12.649	4	J
2.	UNKNOWN	17.850	5	J
3.	UNKNOWN	22.132	9	JB
4.	UNKNOWN	22.358	7	JB
5.	UNKNOWN	22.391	10	JB
6.	UNKNOWN	23.418	8	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B12KF7

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B00-063 H1454

Matrix: (soil/water) WATER

Lab Sample ID: 0108L501-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A081406

Level: (low/med) LOW

Date Received: 08/08/01

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 08/09/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/14/01

Injection Volume: 2.0(uL)

Dilution Factor: 2.00

GPC Cleanup: (Y/N) N

pH: 10

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 620-02-0	5-METHYL,2-FURALDEHYDE	6.949	9	JN
2. 624-45-3	METHYL LEVULINATE	7.371	8	JN
3.	UNKNOWN	11.663	8	J
4.	DICHLOROISOCYANATOBENZENE	12.643	3	J
5.	UNKNOWN	12.420	30	J
6.	UNKNOWN	16.685	10	J
7.	UNKNOWN	22.129	10	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKDM

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B00-063 H1454

Matrix: (soil/water) WATER

Lab Sample ID: 01LE0938-MB1

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: A081303

Level: (low/med) LOW

Date Received: 08/09/01

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 08/09/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/13/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	21.102	10	J
2.	UNKNOWN	22.194	40	J
3.	UNKNOWN	22.444	40	J
4.	UNKNOWN	23.504	10	J
5.	UNKNOWN	23.557	20	J

Lionville Laboratory Use Only
0108L501

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI LIONVILLE LABORATORIES, INC.

Client: TMU- Hanford B00-a03
Est. Final Proj. Sampling Date:
Project #: 11343-6006-001-9999-00
Project Contact/Phone #:
Lionville Laboratory Project Manager: OJ
QC: Spec Del: Std TAT: 30 day
Date Rec'd: 8-8-01 Date Due: 9-7-01

		ABC	DE	FGHI				J							
Refrigerator #		1	5	5	4			5							
#/Type Container	Liquid	3V	2AG	4AG	4			1AG							
	Solid														
Volume	Liquid	40	1L	1L	4			500							
	Solid														
Preservatives		HCl	-	-	4			HNO3							
ANALYSES REQUESTED →		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb			Metal	CN						
		Lionville Laboratory Use Only													
		0024H	0025H	0008H	0408GK			met①							

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	VOA	BNA	Pest/PCB	Herb	Metal
001	B12KF2			W	8/8/01	0803	✓	✓	✓	✓	✓
002	3					0843	✓	✓	✓	✓	✓
003	4					0843	✓	✓	✓	✓	✓
004	1					0615	✓				
005	5					0925	✓	✓	✓	✓	✓
006	6					0953	✓	✓	✓	✓	✓
007	7					1025	✓	✓	✓	✓	✓

Special Instructions: Saf B00-a03
Run Matrix QC
Met① = Al, Ag, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, Sb, V-, Zn, Hg

DATE/REVISIONS:
1.
2.
3. 4235 7954 6233 3.1
4. 4235 7954 6211 4.9 — 4235 7954 6266 4.8
5. 4235 7954 6255 3.8
6.

Lionville Laboratory Use Only

Samples were:
1) Shipped ✓ or
Hand Delivered
Airbill #
Sec Bolcu
2) Ambient or Chilled
3) Received in Good Condition (Y) or N
4) Samples Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

Tamper Resistant Seal 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. 3.2 °C

Relinquished by	Received by	Date	Time
Geo Cox	D. Ashton	8/8/01	0930

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL		

Discrepancies Between Samples Labels and COC Record? Y or (N)
NOTES:
4235 7954 6222

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-063-5	Page 1 of 1

Collector: Fahlberg/Bowers	Company Contact: W Thompson	Telephone No.: 372-9597	Project Coordinator: SHEA, DW
Price Code: 7N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: MODU TANK - Annual Sampling of Purgewater	Sampling Location: 200 East	SAF No.: B00-063	
Ice Chest No.: Cooler #2 Thru 4	Field Logbook No.: EL 1517-2	COA: HGWLTM3510	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A010320	Bill of Lading/Air Bill No.: 4235745 4 - SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT 8/7/01

Special Handling and/or Storage

Preservation	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C	Cool 4C							
Type of Container	aG	aG	aGs*	aG							
No. of Container(s)	1	2	3	4							
Volume	500mL	1000mL	40mL	1000mL							
SAMPLE ANALYSIS	ICP Metals - 6010A (TAL); Mercury - 7470 - (CV)	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	Pesticides - 8081; Herbicides - 8150A							
Sample No.	Matrix *	Sample Date	Sample Time								
B12KF2	WATER	8.6.01	0803	X	X	X	X				
B12KF3	WATER	8.6.01	0843	X	X	X	X				
B12KF4	WATER	8.6.01	0843	X	X	X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By: R. Fahlberg / R Fahlberg	8.6.01 1200	Received By: Stored in Ref 2-B	8-6-01 1200
Relinquished By: Removed from Ref 2B 3728	8.7.01 0900	Received By: R Thorey	8.7.01 0900
Relinquished By: R Thorey	8.7.01 0900	Received By: FED EX	
Relinquished By: Fed Ex	8.8.01 0930	Received By: D Lyman	8.8.01 0930
Relinquished By		Received By	
Relinquished By		Received By	

SPECIAL INSTRUCTIONS

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 8/6/01
Collector not available to relenquish samples on 8/7/01 for shipment.

RT 8/7/01

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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-063-04	Page 1 of 1

Collector: Fahlberg/Bowers	Company Contact: W Thompson	Telephone No.: 372-9597	Project Coordinator: SHEA, DW
Price Code: 7N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: MODU TANK - Annual Sampling of Purgewater	Sampling Location: 200 East		SAF No.: B00-063
Ice Chest No.: Cooler # 2 Thru 7	Field Logbook No.: EL 1517-2	COA: HGWLTM3510	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A010320		Bill of Lading/Air Bill No.: 4235754 - See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples did not originate in radiological controlled area. No total activity associated with sample/samples. FT 8/7/01

Special Handling and/or Storage

Preservation	HCl to pH <2 Cool 4C											
Type of Container	aGs*											
No. of Container(s)	3											
Volume	40mL											
SAMPLE ANALYSIS	VOA - 8260A (TCL)											
Sample No.	Matrix *	Sample Date	Sample Time									
B12KF1	WATER	8.6.01	0615	X								

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg	8.6.01 1200	Stored in Ref 2.B	8.6.01 1200
Removed from Ref 2B 3728	8.7.01 0700	R. Thoren	8.7.01 0900
R. Thoren	8.7.01 0900	FED EX	
Fed Ex	8.8.01 0930	D. Smith	8.8.01 0930

Sign/Print Names

SPECIAL INSTRUCTIONS

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 8/6/01. Collector not available to relenquish samples on 8/7/01 for shipment.

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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-063-06	Page 1 of 1

Collector Fahlberg/Bowers	Company Contact W Thompson	Telephone No. 372-9597	Project Coordinator SHEA, DW
Project Designation MODU TANK - Annual Sampling of Purgewater	Sampling Location 200 East		SAF No. B00-063
Ice Chest No. Cooler # 2 Thru 7	Field Logbook No. EL 1517-2	COA HGWLTM3510	Method of Shipment Fed EX
Shipped To TMA/RECRA	Offsite Property No. A010320		Bill of Lading/Air Bill No. 42357954 - SEE OSPC

Price Code 7N

Air Quality ☐

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT 8.7.01

Special Handling and/or Storage

Preservation	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C	Cool 4C
Type of Container	aG	aG	aGs*	aG
No. of Container(s)	1	2	3	4
Volume	500mL	1000mL	40mL	1000mL
SAMPLE ANALYSIS	ICP Metals - 6010A (TAL); Mercury - 7470 - (CV)	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	Pesticides - 8081; Herbicides - 8150A

Sample No.	Matrix *	Sample Date	Sample Time				
B12KF5	WATER	8.6.01	0925	X	X	X	X
B12KF6	WATER	8.6.01	0953	X	X	X	X
B12KF7	WATER	8.6.01	1025	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By: R. Fahlberg / R. Fahlberg 8.6.01 Date/Time 1200	Received By: Stored in Ref 2.B. 8.6.01 Date/Time 1200
Relinquished By: Removed from Ref 2.B 3728 8.7.01 Date/Time 0900	Received By: R Thoren 8.7.01 Date/Time 0900
Relinquished By: R Thoren 8.7.01 Date/Time 0900	Received By: FED EX Date/Time
Relinquished By: FedEx 8.8.01 Date/Time 0930	Received By: T Kappel 8.8.01 Date/Time 0930
Relinquished By: FedEx 8.8.01 Date/Time 0930	Received By: Date/Time
Relinquished By: Date/Time	Received By: Date/Time

SPECIAL INSTRUCTIONS

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 8/6/01. Collector not available to relenquish samples on 8/7/01 for shipment.

RT 8.7.01

Matrix *

S=Soil
SE=Sediment
SO=Solid
S=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
W/=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)

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-063 H1454

DATE RECEIVED: 08/08/01 LVL LOT # :0108L501

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B12KF2	001	W	01LVX323	08/06/01	N/A	08/15/01
B12KF3	002	W	01LVX323	08/06/01	N/A	08/15/01
B12KF4	003	W	01LVX323	08/06/01	N/A	08/15/01
B12KF4	003 MS	W	01LVX326	08/06/01	N/A	08/16/01
B12KF4	003 MSD	W	01LVX326	08/06/01	N/A	08/16/01
B12KF1	004	W	01LVX323	08/06/01	N/A	08/15/01
B12KF5	005	W	01LVX326	08/06/01	N/A	08/16/01
B12KF6	006	W	01LVX326	08/06/01	N/A	08/16/01
B12KF7	007	W	01LVX326	08/06/01	N/A	08/16/01

LAB QC:

VBLKKO	MB1	W	01LVX323	N/A	N/A	08/15/01
VBLKLS	MB1	W	01LVX326	N/A	N/A	08/16/01
VBLKLS	MB1 BS	W	01LVX326	N/A	N/A	08/16/01

LIONVILLE LABORATORY INC.

Client: TNU-HANFORD B00-063
RFW #: 0108L501
SDG/SAF #: H1454/B00-063

W.O. #: 11343-606-001-9999-00
Date Received: 08-08-2001

GC/MS VOLATILE

Seven (7) water samples were collected on 08-06-2001.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260A for TCL Volatile target compounds on 08-15,16-2001.

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

1. The cooler temperature upon receipt has been recorded on the chain-of-custody.
2. Samples were analyzed within required holding time.
3. Non-target compounds were not detected in the samples.
4. All surrogate recoveries were within EPA QC limits.
5. All matrix spike recoveries were within EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. The method blanks contained the common laboratory contaminant Methylene Chloride at levels less than 2x the CRQL.
8. Internal standard area and retention time criteria were met.
9. The pH of several samples exceeded 2.0, indicating that they may not have been properly preserved. A copy of the Sample Prep Records and Sample Discrepancy Report (SDR) has been enclosed.
10. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

J. Michael Taylor
President
Lionville Laboratory Incorporated

9/7/01
Date

SEP 2001 RECEIVED

som\group\data\voa\tnu-hanford\0108-501.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 6 pages.

208 Welsh Pool Road • Exton, PA 19341-1313 • (610) 280-3000 • Fax (610) 280-3041

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 01VT174

Initiator: D. Hampton Batch: 0108L7501 Parameter: 0624
Date: 8/17/01 Samples: -002-003, 005-007 Matrix: W
Client: TAO Hartford Method: SW846/MCAWW/CLP/ Prep Batch:

1. Reason for SDR

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

b. General Discrepancy

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

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

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

samples 002-003, 005-007 had a PH of ≈7.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description:

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

4. Project Manager Instructions...signature/date: [signature] 8/17/01

__ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
✓ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: [signature] 9/4/01 Other Explanation:

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

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

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
2	X Initiator	__	__ Metals: Beegle
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
1	X Project Mgr: Stone/Johnson/Haslett	__	__ GC/LC: Kiger
__	X Technical Mgr: Wesson/Daniels	__	__ MS: Rychlak/Layman
__	X QA (file): Alberts	__	__ Log-in: Keppel
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Beegle/Kiger	__	__ Other: _____

L-WI-006/E-01/01

GLOSSARY OF VOA DATA

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

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GLOSSARY OF VOA DATA

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

D = Identifies all compounds identified in an analysis at a secondary dilution factor.

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.

X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).

Y = Additional qualifiers used as required are explained in the case narrative.

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TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

MP - Missed Peak: manually added peak not found by automatic quan program.

PA - Peak Assignment: quan report was changed to reflect correct peak assignment.

RI - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.

SP - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.

CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.

PI - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

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Lionville Laboratory, Inc.

Volatiles by GC/MS, HSL List

Report Date: 09/05/01 12:13

RFW Batch Number: **0108L501** Client: ***TNUHANFORD B00-063 H1454*** Work Order: 11343606001 Page: 1a

	Cust ID:	B12KF2		B12KF3		B12KF4		B12KF4		B12KF4		B12KF1	
Sample Information	RFW#:	001		002		003		003 MS		003 MSD		004	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Surrogate Recovery	Toluene-d8	95	%	97	%	94	%	94	%	95	%	97	%
	Bromofluorobenzene	105	%	107	%	105	%	104	%	102	%	94	%
	1,2-Dichloroethane-d4	94	%	101	%	102	%	95	%	98	%	96	%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	10	U	10	U	10	U	10	U	10	U
Bromomethane		10	U	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride		10	U	10	U	10	U	10	U	10	U	10	U
Chloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride		4	JB	4	JB	4	JB	3	BJ	4	JB	4	JB
Acetone		10	U	10	U	10	U	10	U	10	U	42	
Carbon Disulfide		5	U	5	U	5	U	5	U	5	U	5	U
1,1-Dichloroethene		5	U	5	U	5	U	95	%	93	%	5	U
1,1-Dichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethene (total)		5	U	5	U	5	U	5	U	5	U	5	U
Chloroform		5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U
1,1,1-Trichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Carbon Tetrachloride		5	U	5	U	5	U	5	U	5	U	5	U
Bromodichloromethane		5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloropropane		5	U	5	U	5	U	5	U	5	U	5	U
cis-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U	5	U
Trichloroethene		5	U	5	U	5	U	102	%	104	%	5	U
Dibromochloromethane		5	U	5	U	5	U	5	U	5	U	5	U
1,1,2-Trichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Benzene		5	U	5	U	5	U	95	%	96	%	5	U
Trans-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U	5	U
Bromoform		5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		10	U	10	U	10	U	10	U	10	U	10	U
Tetrachloroethene		5	U	5	U	5	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Toluene		5	U	5	U	5	U	98	%	97	%	5	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: **0108L501** Client: **TNUHANFORD B00-063 H1454** Work Order: 11343606001 Page: 1b

Cust ID:	B12KF2	B12KF3	B12KF4	B12KF4	B12KF4	B12KF1
RFW#:	001	002	003	003 MS	003 MSD	004
Chlorobenzene	5 U	5 U	5 U	101 %	101 %	5 U
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U	5 U
Xylene (total)	5 U	5 U	5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

Lionville Laboratory, Inc.
Volatiles by GC/MS, HSL List

Report Date: 09/05/01 12:13

RFW Batch Number: **0108L501** Client: **TNUHANFORD B00-063 H1454** Work Order: 11343606001 Page: 2a

	Cust ID:	B12KF5		B12KF6		B12KF7		VBLKKO		VBLKLS		VBLKLS BS	
Sample Information	RFW#:	005		006		007		01LVX323-MB1		01LVX326-MB1		01LVX326-MB1	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Surrogate Recovery	Toluene-d8	99	%	94	%	102	%	94	%	96	%	105	%
	Bromofluorobenzene	92	%	100	%	104	%	98	%	96	%	106	%
	1,2-Dichloroethane-d4	92	%	96	%	101	%	93	%	98	%	97	%
Chloromethane		10	U	10	U	10	U	10	U	10	U	10	U
Bromomethane		10	U	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride		10	U	10	U	10	U	10	U	10	U	10	U
Chloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride		4	JB	4	JB	5	JB	6		4	J	7	B
Acetone		10	U	10	U	10	U	10	U	10	U	10	U
Carbon Disulfide		5	U	5	U	5	U	5	U	5	U	5	U
1,1-Dichloroethene		5	U	5	U	5	U	5	U	5	U	94	%
1,1-Dichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethene (total)		5	U	5	U	5	U	5	U	5	U	5	U
Chloroform		5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U
1,1,1-Trichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Carbon Tetrachloride		5	U	5	U	5	U	5	U	5	U	5	U
Bromodichloromethane		5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloropropane		5	U	5	U	5	U	5	U	5	U	5	U
cis-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U	5	U
Trichloroethene		5	U	5	U	5	U	5	U	5	U	102	%
Dibromochloromethane		5	U	5	U	5	U	5	U	5	U	5	U
1,1,2-Trichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Benzene		5	U	5	U	5	U	5	U	5	U	97	%
Trans-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U	5	U
Bromoform		5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		10	U	10	U	10	U	10	U	10	U	10	U
Tetrachloroethene		5	U	5	U	5	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Toluene		5	U	5	U	5	U	5	U	5	U	107	%

*= Outside of EPA CLP QC limits.

RFW Batch Number: **0108L501** Client: **TNUHANFORD B00-063 H1454** Work Order: 11343606001 Page: 2b

Cust ID:	B12KF5	B12KF6	B12KF7	VBLKKO	VBLKLS	VBLKLS BS
RFW#:	005	006	007	01LVX323-MB1	01LVX326-MB1	01LVX326-MB1
Chlorobenzene	5 U	5 U	5 U	5 U	5 U	99 %
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U	5 U
Xylene (total)	5 U	5 U	5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

Lionville Laboratory Use Only
0108L501

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI Lionville Laboratory Inc

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TMU- Hanford B00-0603
Est. Final Proj. Sampling Date:
Project #: 11343-6006-001-9999-00
Project Contact/Phone #:
Lionville Laboratory Project Manager: OJ
QC: Spec Del: Std TAT: 30 day
Date Rec'd: 8-8-01 Date Due: 9-7-01

		ABC	DE	FGHI				J							
Refrigerator #		1	5	5	1			5							
#/Type Container	Liquid	3V	2AG	4AG	1			1AG							
	Solid														
Volume	Liquid	40	1L	1L	1			500							
	Solid														
Preservatives		HCl	-	-	1			HNO3							
ANALYSES REQUESTED		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb			Metal	CN						
		Lionville Laboratory Use Only													
		0624H	0625H	0608H	OHBGX			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	0624H	0625H	0608H	OHBGX				Met 1							
001	B12KF2			W	8/2/01	0803	✓	✓	✓	✓				✓							
002	3					0843	✓	✓	✓	✓				✓							
003	4					0843	✓	✓	✓	✓				✓							
004	1					0615	✓														
005	5					0925	✓	✓	✓	✓				✓							
006	6					0953	✓	✓	✓	✓				✓							
007	7					1025	✓	✓	✓	✓				✓							

Special Instructions: Saf B00-0603

Run Matrix QC

Met 1 = Al, Ag, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, Sb, V, Zn, Hg

DATE/REVISIONS:
1.
2.
3. 4235 7954 6233 3.1
4. 4235 7954 6211 4.9 — 4235 7954 6266 4.8
5. 4235 7954 6255 3.8
6.

Lionville Laboratory 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) Samples Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

Tamper Resistant Seal 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. 3.2 °C

Relinquished by	Received by	Date	Time
[illegible]	D. [illegible]	8/8/01	0930

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL		

Discrepancies Between Samples Labels and COC Record? Y or (N)
NOTES:
4235 7954 6222

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-063-5	Page 1 of 1

Collector: Fahlberg/Bowers	Company Contact: W Thompson	Telephone No.: 372-9597	Project Coordinator: SHEA, DW
Price Code: 7N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: MODU TANK - Annual Sampling of Purgewater	Sampling Location: 200 East	SAF No.: B00-063	
Ice Chest No.: Cooler #2 Thru 4	Field Logbook No.: EL 1517-2	COA: HGWLTM3510	Method of Shipment: Fed EX
Shipped To: TMA (RECRA)	Offsite Property No.: A010320	Bill of Lading/Air Bill No.: 42357454 - SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT 8/7/01

Special Handling and/or Storage

Preservation	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C	Cool 4C							
Type of Container	aG	aG	aGs*	aG							
No. of Container(s)	1	2	3	4							
Volume	500mL	1000mL	40mL	1000mL							
SAMPLE ANALYSIS	ICP Metals - 6010A (TAL); Mercury - 7470 - (CV)	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	Pesticides - 8081; Herbicides - 8150A							
Sample No.	Matrix *	Sample Date	Sample Time								
B12KF2	WATER	8.6.01	0803	X	X	X	X				
B12KF3	WATER	8.6.01	0843	X	X	X	X				
B12KF4	WATER	8.6.01	0843	X	X	X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By: R. Fahlberg / R Fahlberg	8.6.01 1200	Received By: Stored in Ref 2-B	8-6-01 1200
Relinquished By: Removed from Ref 2B 3728	8.7.01 0900	Received By: R Thorsen	8.7.01 0900
Relinquished By: R Thorsen	8.7.01 0900	Received By: FED EX	
Relinquished By: Fed Ex	8.8.01 0930	Received By: D. Osman	8.8.01 0930
Relinquished By		Received By	
Relinquished By		Received By	

SPECIAL INSTRUCTIONS

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 8/6/01
Collector not available to relenquish samples on 8/7/01 for shipment.

RT 8/7/01

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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-063-04	Page 1 of 1

Collector: Fahlberg/Bowers	Company Contact: W Thompson	Telephone No.: 372-9597	Project Coordinator: SHEA, DW
Price Code: 7N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: MODU TANK - Annual Sampling of Purgewater	Sampling Location: 200 East	SAF No.: B00-063	
Ice Chest No.: Cooler # 2 Thru 7	Field Logbook No.: EL 1517-2	COA: HGWLTM3510	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A01 0320	Bill of Lading/Air Bill No.: 4235754 - See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples did not originate in radiological controlled area. No total activity associated with sample/samples. FT 8/7/01

Special Handling and/or Storage

Preservation	HCl to pH <2 Cool 4C											
Type of Container	aGs*											
No. of Container(s)	3											
Volume	40mL											
SAMPLE ANALYSIS	VOA - 8260A (TCL)											
Sample No.	Matrix *	Sample Date	Sample Time									
B12KF1	WATER	8.6.01	0615	X								

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By: R. Fahlberg / R. Fahlberg Date/Time: 1200 8.6.01	Received By: Stored in Ref 2.B Date/Time: 1200 8.6.01
Relinquished By: Removed from Ref 2B 3728 Date/Time: 0900 8.7.01	Received By: R. Thoren Date/Time: 0900 8.7.01
Relinquished By: R Thoren Date/Time: 0900 8.7.01	Received By: FED EX Date/Time:
Relinquished By: Fed Ex Date/Time: 8.8.01 0930	Received By: D. Smith Date/Time: 8.8.01 0930
Relinquished By: Date/Time:	Received By: Date/Time:
Relinquished By: Date/Time:	Received By: Date/Time:

SPECIAL INSTRUCTIONS

Samples stored in Ref.#2B at the 3728 Shipping Facility on 8/6/01. Collector not available to relenquish samples on 8/7/01 for shipment.

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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-063-06	Page 1 of 1

Collector: Fahlberg/Bowers	Company Contact: W Thompson	Telephone No.: 372-9597	Project Coordinator: SHEA, DW
Price Code: 7N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: MODU TANK - Annual Sampling of Purgewater	Sampling Location: 200 East	SAF No.: B00-063	
Ice Chest No.: Cooler # 2 Thru 7	Field Logbook No.: EL 1517-2	COA: HGWLTM3510	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A010320	Bill of Lading/Air Bill No.: 42357954 - SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT 8.7.01

Special Handling and/or Storage

Preservation	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C	Cool 4C						
Type of Container	aG	aG	aGs*	aG						
No. of Container(s)	1	2	3	4						
Volume	500mL	1000mL	40mL	1000mL						
SAMPLE ANALYSIS	ICP Metals - 6010A (TAL); Mercury - 7470 - (CV)	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	Pesticides - 8081; Herbicides - 8150A						

Sample No.	Matrix *	Sample Date	Sample Time										
B12KF5	WATER	8.6.01	0925	X	X	X	X						
B12KF6	WATER	8.6.01	0953	X	X	X	X						
B12KF7	WATER	8.6.01	1025	X	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By	Date/Time
Relinquished By	R. Fahlberg / R. Fahlberg	8.6.01 1200	Stored in Ref 2-B	8.6.01 1200
Relinquished By	Removed from Ref 2-B 3728	8.7.01 0900	R Thoren	8.7.01 0900
Relinquished By	R Thoren	8.7.01 0900	FED EX	
Relinquished By	FED EX	8.8.01 0930	T Kappel	8.8.01 0930
Relinquished By	FED EX	8.8.01 0 DS 8.8.01		
Relinquished By			Received By	

SPECIAL INSTRUCTIONS

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 8/6/01. Collector not available to relenquish samples on 8/7/01 for shipment.

RT 8.7.01

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)

SAMPLE PREP RECORD

Sheet no.: 1

Extract. Date: 08/15/01 Extraction Batch No: 01LVX323 Analyst: DH Method: N/A

Test: O624 Cleanup Date: Analyst: Client: LVLI H&S

LIMS Report Date: 09/03/01 Solvent: Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solid	C/D FACTOR
0108L458-	LVLI H&S										
005 T	APSU SOLID	7	5	1.0		5		1.0	N	0.0	1.0
006 T	APSU LIQUID	7	5	1.0		5		1.0	N	0.0	1.0
0108L501-	TNUHANFORD B00-063 H1454										
001 H	B12KF2	2	5	1.0		5		1.0	N	0.0	1.0
002 H	B12KF3	7	5	1.0		5		1.0	N	0.0	1.0
003 H	B12KF4	7	5	1.0		5		1.0	N	0.0	1.0
004 H	B12KF1	2	5	1.0		5		1.0	N	0.0	1.0
01LTV033-LB1 T		7	5	1.0		5		1.0	N	0.0	1.0
01LVX323-MB1 H		7	5	1.0		5		1.0	N	0.0	1.0
01LVX323-MB1 T		7	5	1.0		5		1.0	N	0.0	1.0

Comments:
Surrogate:
Spike:

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
				AM	9/3/01

SAMPLE PREP RECORD

Sheet no.: 1

Extract. Date: 08/16/01 Extraction Batch No: 01LVX326 Analyst: DH Method: N/A

Test: O624 Cleanup Date: Analyst: Client: TNUHANFORD B00-063 H1454

LIMS Report Date: 09/03/01 Solvent: Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solid	C/D FACTOR
0108L501-	TNUHANFORD B00-063 H1454										
003 HS	B12KF4	7	5	1.0	1.0	5		1.0	N	0.0	1.0
003 HT	B12KF4	7	5	1.0	1.0	5		1.0	N	0.0	1.0
005 H	B12KF5	7	5	1.0		5		1.0	N	0.0	1.0
006 H	B12KF6	7	5	1.0		5		1.0	N	0.0	1.0
007 H	B12KF7	7	5	1.0		5		1.0	N	0.0	1.0
0108L531-	WSRC WA-01-3-ENVSCR										
002 X	LAW- 1-A- -1CF9C	2	5	1.0		5		1.0	N	0.0	1.0
003 X	LAW- 2-A- -1CF9B	2	5	1.0		5		1.0	N	0.0	1.0
0108L532-	WSRC WA-01-3-ENVSCR										
001 X	DBP- 2- - -1CFCC	2	5	1.0		5		1.0	N	0.0	1.0
002 X	TRP-325-C- -1D091	2	5	1.0		5		1.0	N	0.0	1.0
0108L537-	WSRC WA-01-3-ARP										
011 X	QA - 89-C- -1CBF3	2	5	1.0		5		1.0	N	0.0	1.0
01LVX326-MB1 H		7	5	1.0		5		1.0	N	0.0	1.0
01LVX326-MB1 HS		7	5	1.0	1.0	5		1.0	N	0.0	1.0
01LVX326-MB1 X		7	5	1.0		5		1.0	N	0.0	1.0
01LVX326-MB1 XS		7	5	1.0	1.0	5		1.0	N	0.0	1.0

Comments:
Surrogate:
Spike:

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
					9/3/01