H1381

0055854

JUL 2001 RECEIVED

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-084 H1381

DATE RECEIVED: 06/13/01 LVL LOT # :0106L036

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B120Y1						
% SOLIDS	001	S	01L%S072	06/11/01	06/14/01	06/15/01
% SOLIDS	001 REP	S	01L%S072	06/11/01	06/14/01	06/15/01
OIL & GREASE BY GRAV	001	S	01LOG025	06/11/01	07/12/01	07/12/01
OIL AND GREASE BY GR	001 REP	S	01LOG025	06/11/01	07/12/01	07/12/01
OIL AND GREASE BY GR	001 MS	S	01LOG025	06/11/01	07/12/01	07/12/01
B120Y5						
% SOLIDS	002	S	01L%S072	06/11/01	06/14/01	06/15/01
OIL & GREASE BY GRAV	002	S	01LOG025	06/11/01	07/12/01	07/12/01
B120Y6						
% SOLIDS	003	S	01L%S072	06/11/01	06/14/01	06/15/01
OIL & GREASE BY GRAV	003	S	01LOG025	06/11/01	07/12/01	07/12/01
B121H2						
% SOLIDS	004	S	01L%S072	06/11/01	06/14/01	06/15/01
B120Y2						
% SOLIDS	005	S	01L%S072	06/11/01	06/14/01	06/15/01
OIL & GREASE BY GRAV	005	S	01LOG025	06/11/01	07/12/01	07/12/01
B120Y3						
% SOLIDS	006	S	01L%S072	06/11/01	06/14/01	06/15/01
OIL & GREASE BY GRAV	006	S	01LOG025	06/11/01	07/12/01	07/12/01
B120Y4						
% SOLIDS	007	S	01L%S072	06/11/01	06/14/01	06/15/01
OIL & GREASE BY GRAV	007	S	01LOG025	06/11/01	07/12/01	07/12/01

LAB QC:

OIL & GREASE BY GRAV	MB1	S	01LOG025	N/A	07/12/01	07/12/01

RECEIVED NOV 15 2001

EDMC

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-084 H1381

DATE RECEIVED: 06/13/01 LVL LOT # :0106L036

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
OIL AND GREASE BY GR	MB1 BS	S	01LOG025	N/A	07/12/01	07/12/01
OIL AND GREASE BY GR	MB1 BSD	S	01LOG025	N/A	07/12/01	07/12/01

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B01-084 H1381
LVL#: 0106L036

W.O.#: 11343-606-001-9999-00
Date Received: 06-13-01

INORGANIC NARRATIVE

1. This narrative covers the analyses of 7 soil samples.

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

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

4. The cooler temperatures were recorded on the chain of custody.

5. The method blank for Oil and Grease was within the method criteria.

6. The Laboratory Control Samples (LCS) for Oil and Grease were within the laboratory control limits.

7. The matrix spike recovery for Oil and Grease was within the 75-125% control limits.

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

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

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

Iain Daniels
Deputy Laboratory Manager
Lionville Laboratory Incorporated

07-23-01
Date

njp\i06-036

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 14 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

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

Other: **Method:**

Other: **Method**

L-WI-034/B-01/01

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.

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 07/18/01

CLIENT: TNUHANFORD B01-084 H1381 LVL LOT #: 0106L036

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B120Y1	% Solids	88.0		%	0.01	1.0
		Oil & Grease Gravimetri	152	u	MG/KG	152	1.0
-002	B120Y5	% Solids	96.5		%	0.01	1.0
		Oil & Grease Gravimetri	152		MG/KG	138	1.0
-003	B120Y6	% Solids	97.0		%	0.01	1.0
		Oil & Grease Gravimetri	219		MG/KG	137	1.0
-004	B121H2	% Solids	98.2		%	0.01	1.0
-005	B120Y2	% Solids	83.5		%	0.01	1.0
		Oil & Grease Gravimetri	367		MG/KG	160	1.0
-006	B120Y3	% Solids	86.7		%	0.01	1.0
		Oil & Grease Gravimetri	154		MG/KG	154	1.0
-007	B120Y4	% Solids	93.3		%	0.01	1.0
		Oil & Grease Gravimetri	357		MG/KG	143	1.0

Lionville Lababoratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 07/18/01

CLIENT: TNUHANFORD B01-084 H1381 LVL LOT #: 0106L036

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	01LOG025-MB1	Oil & Grease Gravimetri	133	u	MG/KG	133	1.0

Lionville Lababoratory, Inc.

INORGANICS ACCURACY REPORT 07/18/01

CLIENT: TNUHANFORD B01-084 H1381 LVL LOT #: 0106L036

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT		SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B120Y1	Oil & Grease Gravimetr	7250	152	u	8360	86.7	1.0
BLANK10	01LOG025-MB1	Oil & Grease Gravimetr	6720	133	u	7360	91.3	1.0
		Oil & Grease - Grav N	6830	133	u	7470	91.4	1.0

Lionville Lababoratory, Inc.

INORGANICS PRECISION REPORT 07/18/01

CLIENT: TNUHANFORD B01-084 H1381 LVL LOT #: 0106L036

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B120Y1	% Solids	88.0	88.8	0.95	1.0
		Oil & Grease Gravimetri	152 u	152	NC	1.0

Lionville Laboratory Use Only

01060036

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TNV-HANFORD #B01-084

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 6-13-01 Date Due 7-13-01

		A	B						C		D					
Refrigerator #		1	4						4		4					
#Type Container	Liquid															
	Solid	1AG	1AG						1AG		1AG					
Volume	Liquid															
	Solid	250	250						1L		250					
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN	Oil + Grease					
		Lionville Laboratory Use Only														
		8260HH	8270SX						Met(1)		1664GR					

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected												
001	B12041			S	6-11-01	0735	X	X						X		X		
002	B12045				6-11-01	1357	X	X						X		X		
003	B12046				6-11-01	1636	X	X						X		X		
004	B12142				6-11-01	1518	X	X										
005	B12042				6-11-01	0850	X	X						X		X		
006	B12043				6-11-01	0940	X	X						X		X		
007	B12044				6-11-01	1053	X	X						X		X		

Special Instructions: See B01-084

Run Matrix QC

DATE/REVISIONS:

1. Rec'd 1 cooler @ 0915
2. Rec'd 1 cooler @ 1500
3. Met(1) Al, Ag, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K,
4. Mg, Mn, Na, Ni, Sb, V, Zn, Pb, Hg
5.
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. 5° °C

Relinquished by	Received by	Date	Time
1-4 FedEx	[signature]	6-13-01	9:15
5-7 FedEx	T Brogard	6-13-01	1500

Relinquished by	Received by	Date	Time

COMPOSITE WASTE

ORIGINAL REWRITTEN

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

NOTES:

4235 7954 5831

4235 7954 5842 -7.5A

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B01-084-15	Page 1 of 1

Collector: Fahlberg	Company Contact: C W Miller	Telephone No.: 372-9274	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: Z-9 Trench Well Deepening and Characterization - Soil	Sampling Location: 200- Z- 9	SAF No.: B01-084	
Ice Chest No.: ER-8 / ERC FS-002	Field Logbook No.: EL 1517-1	COA: R20ZP2DP61	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A010325	Bill of Lading/Air Bill No.: 42357454-5631 & 5042	

POSSIBLE SAMPLE HAZARDS/REMARKS
<2000 pCi/g Per BHI-01509

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None					
Type of Container	aG	aG	aG	aG	aG					
No. of Container(s)	1	1	1	1	1					
Volume	250mL	250mL	250mL	500mL	1000mL					
SAMPLE ANALYSIS	Oil & Grease - 413.1	See item (1) in Special Instructions.	VOA - 8260A (TCL)	See item (2) in Special Instructions.	See item (3) in Special Instructions.					

Sample No.	Matrix *	Sample Date	Sample Time									
B120Y3 Rec'd @ 1500	SOIL	6-11-01	0940	X	X	X	X					
B120Y4	SOIL	6-11-01	1653	X	X	X	X					
B120Y5 Rec'd @	SOIL	6-11-01	1357	X	X	X	X					
B120Y6 0915	SOIL	6-11-01	1636	X	X	X	X					

RT 6-11-01

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: R. Fahlberg / R. Fahlberg	Date/Time: 6-11-01 1800	Received By: STORED IN Ref 2-C	Date/Time: 6-11-01 1800
Relinquished By: REMOVED FROM Ref 2C 3728	Date/Time: 6-12-01 0900	Received By: R V R Thorer	Date/Time: 6/12/01 0400
Relinquished By: R V R Thorer	Date/Time: 6/12/01 0400	Received By: FED EX	Date/Time:
Relinquished By: FED EX	Date/Time: 6-13-01 9:15	Received By: Carlos Hernandez	Date/Time: 6-13-01 9:15
Relinquished By: FED EX	Date/Time: 6-13-01 1500	Received By: T Rappel	Date/Time: 6-13-01 1500
Relinquished By:	Date/Time:	Received By:	Date/Time:

SPECIAL INSTRUCTIONS
See SAF Comment Concerning Pu Analysis

(1) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {Tributyl phosphate}
(2) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) {Lead}; Mercury - 7470 - (CV)
~~(3) Gamma Spectroscopy (Cesium-137, Cobalt-60); Gamma Spec - Add-on (Antimony-125); Isotopic Plutonium, Americium-241, Neptunium-237, Plutonium-241, Strontium-89,90 - Total Sr~~

RT 6-12-01

Samples stored in Ref.# 2C at the 3728 Shipping Facility on 6/11/01.
Collector not available to relenquish samples on 6/12/01 for shipment.
RT 6/12/01

Matrix *
S=Soil
SD=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		B01-084-21	Page 1 of 1
Collector: Fahlberg	Company Contact: C W Miller	Telephone No.: 372-9274	Project Coordinator: TRENT, SJ	Price Code: 8N; Air Quality ☐	Data Turnaround: 45 Days
Project Designation: Z-9 Trench Well Deepening and Characterization - Soil	Sampling Location: 200-Z-9		SAF No.: B01-084	
Ice Chest No.: ER-8 / ERC-FS-002	Field Logbook No.: EL1517-2	COA: R20ZP2DP61	Method of Shipment: Fed EX	
Shipped To: TMA/RECRA	Offsite Property No.: A010325		Bill of Lading/Air Bill No.: 4235 7454 - 5031 45042	

POSSIBLE SAMPLE HAZARDS/REMARKS
12000 pCi/g per BHI-01509

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None								
Type of Container	aG	aG	aG								
No. of Container(s)	1	1	1								
Volume	120mL	250mL	500mL								
SAMPLE ANALYSIS	VOA - 8260A (TCL)	See item (1) in Special Instructions.	See item (2) in Special Instructions. R.T. 6-11-01								

Sample No.	Matrix *	Sample Date	Sample Time									
~~B12540~~	~~SOIL~~											
B121H2	Soil	6-11-01	1518	X	X							

6-11-01 RT

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By	Date/Time
Relinquished By: R. Fahlberg / R. Fahlberg		6-11-01 1800	Received By: Stored in Ref 2-C	6-11-01 1800
Relinquished By: Removed from Ref 2-C 3728		6/12/01 0900	Received By: R Thorem	6/12/01 0900
Relinquished By: R Thorem		6/12/01 0900	Received By: FED EX	
Relinquished By: FED EX		6-13-01 9:15 1500	Received By: Carlos Harvey	6-13-01 9:15
Relinquished By		Date/Time 6-13-01	Received By	Date/Time 6-13-01
Relinquished By		Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
See SAF Comment Concerning Pu Analysis

(1) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {Tributyl phosphate}
(2) ~~Gamma Spectroscopy (Cesium-137, Cobalt-60); Gamma Spec. Add-on (Antimony-125); Isotopic Plutonium; Americium-241; Neptunium-237; Plutonium-241; Strontium-89,90~~ Total Sr

RT 6-12-01

Samples stored in Ref.# 2C at the 3728 Shipping Facility on 6/11/01. Collector not available to relenquish samples on 6/12/01 for shipment. RT 6/12/01

Matrix *
S=Soil
SD=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

B01-084-05

Collector: Fahlberg	Company Contact: C W Miller	Telephone No.: 372-9274	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days	Air Quality:	
Project Designation: Z-9 Trench Well Deepening and Characterization - Soil	Sampling Location: 200- Z- 9		SAF No.: B01-084
Ice Chest No.: ER-8 / ERC FS002	Field Logbook No.: EL 1517-1	COA: R20ZP2DP61	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A010325		Bill of Lading/Air Bill No.: 42357954 5031 & 5042

POSSIBLE SAMPLE HAZARDS/REMARKS: <200 ppb Per BHI-0501

Special Handling and/or Storage

SAMPLE ANALYSIS	Oil & Grease - 413.1	See item (1) in Special Instructions	VOA - 8260A (TCL)	See item (2) in Special Instructions	See item (3) in Special Instructions
Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
Type of Container	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1
Volume	250mL	250mL	250mL	500mL	1000mL

RF 6-11-01

Sample No.	Matrix *	Sample Date	Sample Time					
~~B120X0~~	~~SOIL~~							
~~B120Y0~~	~~SOIL~~							
B120Y1 Rec'd @ 0915	SOIL	6-11-01	0735	X	X	X	X	
B120Y2 Rec'd @ 1500	SOIL	6-11-01	0850	X	X	X	X	

C 8-01

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg / R. Fahlberg	6-11-01 1800	STORED IN Ref 2-C	6-11-01 1800
Removed from Ref 2C 3728	6/12/01 0400	R. Thoren	6/12/01 0400
R. Thoren	6/12/01 0400	FEDEX	
FED Ex	6-13-01 9:15	Carla Hernandez	6-13-01 9:15
FED Ex	6-13-01 1500	T Rippe	6-13-01 1500

Sign/Print Names

SPECIAL INSTRUCTIONS

See SAF Comment Concerning Pu Analysis

(1) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (Add-On) (Tributyl phosphate)
(2) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Lead); Mercury - 7470 - (CV)
~~(3) Gamma Spectroscopy (Cesium-137, Cobalt-60); Gamma Spec. Add-on (Antimony-125); Isotopic Plutonium; Americium-241; Neptunium-237; Plutonium-241; Strontium-89,90 – Total Sr~~

RT 6-12-01

Samples stored in Ref.# 2C at the 3728 Shipping Facility on 6/11/01
Collector not available to relenquish samples on 6/12/01 for shipment.

RT 6/12/01

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)

Figure 1. Sample Check-in List

Date/Time Received: 6-13-01 0915 + 1500

SDG#: 01061 036

Work Order Number: - SAF# B01-084

Shipping Container ID: Chain of Custody # B01-084-15,05,21

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 5°C 7.5°C
5. Vermiculite/packing materials is Wet [ ] Dry [✓]
6. Number of samples in shipping container: 26
7. Sample holding times exceeded? Yes [ ] No [✓]

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

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

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

Rec'd 1 cooler at 0915 (4235795450 31)

Rec'd 1 cooler at 1500 (4235795450 42)

Sample Custodian/Laboratory: TKappel / LVLI Date: 6-13-01

Telephoned to: _____ On _____ By _____

JUL 2001
RECEIVED

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-084 H1381

DATE RECEIVED: 06/13/01 LVL LOT # :0106L036

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B120Y1						
SILVER, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
SILVER, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
SILVER, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
ALUMINUM, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
ALUMINUM, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
ALUMINUM, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
BARIUM, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
BARIUM, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
BARIUM, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
BERYLLIUM, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
BERYLLIUM, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
BERYLLIUM, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
CALCIUM, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
CALCIUM, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
CALCIUM, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
CADMIUM, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
CADMIUM, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
CADMIUM, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
COBALT, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
COBALT, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
COBALT, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
CHROMIUM, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
CHROMIUM, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
CHROMIUM, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
COPPER, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
COPPER, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
COPPER, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
IRON, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
IRON, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
IRON, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
MERCURY, TOTAL	001	S	01C0191	06/11/01	06/27/01	06/27/01
MERCURY, TOTAL	001 REP	S	01C0191	06/11/01	06/27/01	06/27/01
MERCURY, TOTAL	001 MS	S	01C0191	06/11/01	06/27/01	06/27/01
POTASSIUM, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
POTASSIUM, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-084 H1381

DATE RECEIVED: 06/13/01 LVL LOT # :0106L036

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
POTASSIUM, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
MAGNESIUM, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
MAGNESIUM, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
MAGNESIUM, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
MANGANESE, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
MANGANESE, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
MANGANESE, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
SODIUM, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
SODIUM, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
SODIUM, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
NICKEL, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
NICKEL, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
NICKEL, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
LEAD, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
LEAD, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
LEAD, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
ANTIMONY, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
ANTIMONY, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
ANTIMONY, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
VANADIUM, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
VANADIUM, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
VANADIUM, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
ZINC, TOTAL	001	S	01L0393	06/11/01	07/05/01	07/06/01
ZINC, TOTAL	001 REP	S	01L0393	06/11/01	07/05/01	07/06/01
ZINC, TOTAL	001 MS	S	01L0393	06/11/01	07/05/01	07/06/01
B120Y5						
SILVER, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
ALUMINUM, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
BARIUM, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
BERYLLIUM, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
CALCIUM, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
CADMIUM, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
COBALT, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
CHROMIUM, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
COPPER, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
IRON, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-084 H1381

DATE RECEIVED: 06/13/01 LVL LOT # :0106L036

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	002	S	01C0191	06/11/01	06/27/01	06/27/01
POTASSIUM, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
MAGNESIUM, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
MANGANESE, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
SODIUM, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
NICKEL, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
LEAD, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
ANTIMONY, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
VANADIUM, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
ZINC, TOTAL	002	S	01L0393	06/11/01	07/05/01	07/06/01
B120Y6						
SILVER, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
ALUMINUM, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
BARIUM, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
BERYLLIUM, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
CALCIUM, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
CADMIUM, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
COBALT, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
CHROMIUM, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
COPPER, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
IRON, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
MERCURY, TOTAL	003	S	01C0191	06/11/01	06/27/01	06/27/01
POTASSIUM, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
MAGNESIUM, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
MANGANESE, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
SODIUM, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
NICKEL, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
LEAD, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
ANTIMONY, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
VANADIUM, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
ZINC, TOTAL	003	S	01L0393	06/11/01	07/05/01	07/06/01
B120Y2						
SILVER, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
ALUMINUM, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-084 H1381

DATE RECEIVED: 06/13/01 LVL LOT # :0106L036

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BARIUM, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
BERYLLIUM, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
CALCIUM, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
CADMIUM, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
COBALT, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
CHROMIUM, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
COPPER, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
IRON, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
MERCURY, TOTAL	005	S	01C0191	06/11/01	06/27/01	06/27/01
POTASSIUM, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
MAGNESIUM, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
MANGANESE, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
SODIUM, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
NICKEL, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
LEAD, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
ANTIMONY, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
VANADIUM, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
ZINC, TOTAL	005	S	01L0393	06/11/01	07/05/01	07/06/01
B120Y3						
SILVER, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
ALUMINUM, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
BARIUM, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
BERYLLIUM, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
CALCIUM, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
CADMIUM, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
COBALT, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
CHROMIUM, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
COPPER, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
IRON, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
MERCURY, TOTAL	006	S	01C0191	06/11/01	06/27/01	06/27/01
POTASSIUM, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
MAGNESIUM, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
MANGANESE, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
SODIUM, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
NICKEL, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
LEAD, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-084 H1381

DATE RECEIVED: 06/13/01 LVL LOT # :0106L036

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ANTIMONY, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
VANADIUM, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
ZINC, TOTAL	006	S	01L0393	06/11/01	07/05/01	07/06/01
B120Y4						
SILVER, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
ALUMINUM, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
BARIUM, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
BERYLLIUM, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
CALCIUM, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/09/01
CADMIUM, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
COBALT, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
CHROMIUM, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
COPPER, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
IRON, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
MERCURY, TOTAL	007	S	01C0191	06/11/01	06/27/01	06/27/01
POTASSIUM, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
MAGNESIUM, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
MANGANESE, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
SODIUM, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
NICKEL, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
LEAD, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
ANTIMONY, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
VANADIUM, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01
ZINC, TOTAL	007	S	01L0393	06/11/01	07/05/01	07/06/01

LAB QC:

SILVER LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
SILVER, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
ALUMINUM LABORTORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
ALUMINUM, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
BARIUM LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
BARIUM, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
BERYLLIUM LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
BERYLLIUM, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
CALCIUM LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-084 H1381

DATE RECEIVED: 06/13/01 LVL LOT # :0106L036

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CALCIUM, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
CADMIUM LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
CADMIUM, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
COBALT LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
COBALT, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
CHROMIUM LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
CHROMIUM, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
COPPER LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
COPPER, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
IRON LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
IRON, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
MERCURY LABORATORY	LC1 BS	S	01C0191	N/A	06/27/01	06/27/01
MERCURY, TOTAL	MB1	S	01C0191	N/A	06/27/01	06/27/01
POTASSIUM LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
POTASSIUM, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
MAGNESIUM LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
MAGNESIUM, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
MANGANESE LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
MANGANESE, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
SODIUM LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
SODIUM, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
NICKEL LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
NICKEL, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
LEAD LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
LEAD, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
ANTIMONY LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
ANTIMONY, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
VANADIUM LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
VANADIUM, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01
ZINC LABORATORY	LC1 BS	S	01L0393	N/A	07/05/01	07/06/01
ZINC, TOTAL	MB1	S	01L0393	N/A	07/05/01	07/06/01

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B01-084
LVL#: 0106L036
SDG/SAF#: H1381/B01-084

W.O.#: 11343-606-001-9999-00
Date Received: 06-13-01

METALS CASE NARRATIVE

1. This narrative covers the analyses of 6 soil samples

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

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 (80-120% for Mercury).

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

7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

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

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

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

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
B120Y1	Aluminum	20,000	106.8
	Antimony	200	105.9

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 24 pages.

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12. The duplicate analyses for 2 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.

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

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

for Iain Daniels
Deputy Laboratory Manager
Lionville Laboratory Incorporated

07-21-01
Date

jjw/m06-036

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Recra Lot#: 01062036

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

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

Other:_____ Method:_____

L-WI-033/M-11/99

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

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

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

4. Flame AA.

5. Graphite Furnace AA.

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

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 07/10/01

CLIENT: TNUHANFORD B01-084 H1381 LVL LOT #: 0106L036

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B120Y1	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Aluminum, Total	8020	MG/KG	1.4	1.0
		Barium, Total	88.9	MG/KG	0.02	1.0
		Beryllium, Total	0.46	MG/KG	0.02	1.0
		Calcium, Total	12100	MG/KG	0.92	1.0
		Cadmium, Total	0.05	MG/KG	0.03	1.0
		Cobalt, Total	7.4	MG/KG	0.09	1.0
		Chromium, Total	13.1	MG/KG	0.10	1.0
		Copper, Total	16.2	MG/KG	0.08	1.0
		Iron, Total	16700	MG/KG	1.8	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	1880	MG/KG	4.0	1.0
		Magnesium, Total	6170	MG/KG	1.0	1.0
		Manganese, Total	326	MG/KG	0.01	1.0
		Sodium, Total	146	MG/KG	0.19	1.0
		Nickel, Total	13.3	MG/KG	0.14	1.0
		Lead, Total	8.5	MG/KG	0.30	1.0
		Antimony, Total	0.22 u	MG/KG	0.22	1.0
		Vanadium, Total	28.5	MG/KG	0.08	1.0
		Zinc, Total	42.5	MG/KG	0.03	1.0
-002	B120Y5	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	6580	MG/KG	1.3	1.0
		Barium, Total	92.0	MG/KG	0.02	1.0
		Beryllium, Total	0.46	MG/KG	0.02	1.0
		Calcium, Total	20400	MG/KG	0.81	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Cobalt, Total	10.1	MG/KG	0.08	1.0
		Chromium, Total	17.9	MG/KG	0.09	1.0
		Copper, Total	21.1	MG/KG	0.07	1.0
		Iron, Total	23900	MG/KG	1.6	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	809	MG/KG	3.6	1.0
		Magnesium, Total	5490	MG/KG	0.89	1.0
		Manganese, Total	382	MG/KG	0.01	1.0
		Sodium, Total	510	MG/KG	0.17	1.0
		Nickel, Total	17.0	MG/KG	0.12	1.0
		Lead, Total	3.5	MG/KG	0.26	1.0
		Antimony, Total	0.19 u	MG/KG	0.19	1.0
		Vanadium, Total	69.5	MG/KG	0.07	1.0

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 07/10/01

CLIENT: TNUHANFORD B01-084 H1381 LVL LOT #: 0106L036

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	B120Y5	Zinc, Total	48.9	MG/KG	0.03	1.0

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 07/10/01

CLIENT: TNUHANFORD B01-084 H1381 LVL LOT #: 0106L036

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	B120Y6	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	7120	MG/KG	1.3	1.0
		Barium, Total	99.2	MG/KG	0.02	1.0
		Beryllium, Total	0.79	MG/KG	0.02	1.0
		Calcium, Total	5210	MG/KG	0.83	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Cobalt, Total	9.1	MG/KG	0.08	1.0
		Chromium, Total	60.6	MG/KG	0.09	1.0
		Copper, Total	19.1	MG/KG	0.07	1.0
		Iron, Total	26900	MG/KG	1.6	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	979	MG/KG	3.6	1.0
		Magnesium, Total	4600	MG/KG	0.90	1.0
		Manganese, Total	331	MG/KG	0.01	1.0
		Sodium, Total	721	MG/KG	0.17	1.0
		Nickel, Total	37.4	MG/KG	0.12	1.0
		Lead, Total	3.8	MG/KG	0.27	1.0
		Antimony, Total	0.19 u	MG/KG	0.19	1.0
		Vanadium, Total	83.6	MG/KG	0.07	1.0
		Zinc, Total	49.3	MG/KG	0.03	1.0
-005	B120Y2	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Aluminum, Total	7600	MG/KG	1.5	1.0
		Barium, Total	72.4	MG/KG	0.02	1.0
		Beryllium, Total	0.40	MG/KG	0.02	1.0
		Calcium, Total	9920	MG/KG	0.97	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Cobalt, Total	6.6	MG/KG	0.1	1.0
		Chromium, Total	16.4	MG/KG	0.11	1.0
		Copper, Total	17.2	MG/KG	0.08	1.0
		Iron, Total	15400	MG/KG	1.9	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	1950	MG/KG	4.2	1.0
		Magnesium, Total	6130	MG/KG	1.1	1.0
		Manganese, Total	221	MG/KG	0.01	1.0
		Sodium, Total	157	MG/KG	0.20	1.0
		Nickel, Total	16.2	MG/KG	0.14	1.0
		Lead, Total	7.0	MG/KG	0.31	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Vanadium, Total	24.8	MG/KG	0.08	1.0

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 07/10/01

CLIENT: TNUHANFORD B01-084 H1381 LVL LOT #: 0106L036

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	B120Y2	Zinc, Total	38.6	MG/KG	0.04	1.0

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 07/10/01

CLIENT: TNUHANFORD B01-084 H1381 LVL LOT #: 0106L036

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	B120Y3	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Aluminum, Total	8170	MG/KG	1.5	1.0
		Barium, Total	85.2	MG/KG	0.02	1.0
		Beryllium, Total	0.44	MG/KG	0.02	1.0
		Calcium, Total	51400	MG/KG	0.93	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Cobalt, Total	7.2	MG/KG	0.09	1.0
		Chromium, Total	16.3	MG/KG	0.10	1.0
		Copper, Total	20.8	MG/KG	0.08	1.0
		Iron, Total	17100	MG/KG	1.8	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	1600	MG/KG	4.1	1.0
		Magnesium, Total	6780	MG/KG	1.0	1.0
		Manganese, Total	289	MG/KG	0.01	1.0
		Sodium, Total	217	MG/KG	0.20	1.0
		Nickel, Total	16.9	MG/KG	0.14	1.0
		Lead, Total	6.2	MG/KG	0.30	1.0
		Antimony, Total	0.22 u	MG/KG	0.22	1.0
		Vanadium, Total	43.4	MG/KG	0.08	1.0
		Zinc, Total	36.7	MG/KG	0.03	1.0
-007	B120Y4	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	4400	MG/KG	1.3	1.0
		Barium, Total	96.4	MG/KG	0.02	1.0
		Beryllium, Total	0.38	MG/KG	0.02	1.0
		Calcium, Total	109000	MG/KG	16.9	20.0
		Cadmium, Total	0.09	MG/KG	0.03	1.0
		Cobalt, Total	8.8	MG/KG	0.08	1.0
		Chromium, Total	36.4	MG/KG	0.09	1.0
		Copper, Total	17.4	MG/KG	0.07	1.0
		Iron, Total	22000	MG/KG	1.6	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	548	MG/KG	3.7	1.0
		Magnesium, Total	8330	MG/KG	0.92	1.0
		Manganese, Total	291	MG/KG	0.01	1.0
		Sodium, Total	411	MG/KG	0.18	1.0
		Nickel, Total	23.9	MG/KG	0.12	1.0
		Lead, Total	2.7	MG/KG	0.27	1.0
		Antimony, Total	0.20 u	MG/KG	0.20	1.0
		Vanadium, Total	46.3	MG/KG	0.07	1.0

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 07/10/01

CLIENT: TNUHANFORD B01-084 H1381 LVL LOT #: 0106L036

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	B120Y4	Zinc, Total	36.2	MG/KG	0.03	1.0

Lionville Lababoratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 07/10/01

CLIENT: TNUHANFORD B01-084 H1381 LVL LOT #: 0106L036

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	01L0393-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	1.3 u	MG/KG	1.3	1.0
		Barium, Total	0.04	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Calcium, Total	1.6	MG/KG	0.81	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Cobalt, Total	0.08 u	MG/KG	0.08	1.0
		Chromium, Total	0.09 u	MG/KG	0.09	1.0
		Copper, Total	0.07 u	MG/KG	0.07	1.0
		Iron, Total	1.6 u	MG/KG	1.6	1.0
		Potassium, Total	3.5 u	MG/KG	3.5	1.0
		Magnesium, Total	0.88 u	MG/KG	0.88	1.0
		Manganese, Total	0.03	MG/KG	0.01	1.0
		Sodium, Total	2.4	MG/KG	0.17	1.0
		Nickel, Total	0.12 u	MG/KG	0.12	1.0
		Lead, Total	0.26 u	MG/KG	0.26	1.0
		Antimony, Total	0.19 u	MG/KG	0.19	1.0
		Vanadium, Total	0.07 u	MG/KG	0.07	1.0
		Zinc, Total	0.05	MG/KG	0.03	1.0
BLANK1	01C0191-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Lababoratory, Inc.

INORGANICS ACCURACY REPORT 07/10/01

CLIENT: TNUHANFORD B01-084 H1381 LVL LOT #: 0106L036

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B120Y1	Silver, Total	5.3	0.11u	5.7	93.0	1.0
		Aluminum, Total	8720	8020	227	305.9*	1.0
		Barium, Total	304	88.9	227	94.6	1.0
		Beryllium, Total	5.8	0.46	5.7	93.7	1.0
		Calcium, Total	14600	12100	2840	86.9*	1.0
		Cadmium, Total	5.2	0.05	5.7	90.3	1.0
		Cobalt, Total	59.4	7.4	56.8	91.5	1.0
		Chromium, Total	34.8	13.1	22.7	95.6	1.0
		Copper, Total	43.0	16.2	28.4	94.4	1.0
		Iron, Total	16800	16700	114	97.9*	1.0
		Mercury, Total	0.18	0.02u	0.18	100	1.0
		Potassium, Total	4750	1880	2840	101.0	1.0
		Magnesium, Total	8820	6170	2840	93.4	1.0
		Manganese, Total	383	326	56.8	100.5*	1.0
		Sodium, Total	2930	146	2840	97.9	1.0
		Nickel, Total	66.3	13.3	56.8	93.3	1.0
		Lead, Total	60.6	8.5	56.8	91.7	1.0
		Antimony, Total	35.5	0.22u	56.8	62.5	1.0
		Vanadium, Total	81.5	28.5	56.8	93.3	1.0
		Zinc, Total	95.0	42.5	56.8	92.4	1.0

Lionville Lababoratory, Inc.

INORGANICS PRECISION REPORT 07/10/01

CLIENT: TNUHANFORD B01-084 H1381 LVL LOT #: 0106L036

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B120Y1	Silver, Total	0.11u	0.11u	NC	1.0
		Aluminum, Total	8020	9530	17.2	1.0
		Barium, Total	88.9	96.2	7.9	1.0
		Beryllium, Total	0.46	0.56	20.3	1.0
		Calcium, Total	12100	12100	0.31	1.0
		Cadmium, Total	0.05	0.04	22.2	1.0
		Cobalt, Total	7.4	7.9	6.5	1.0
		Chromium, Total	13.1	15.6	17.4	1.0
		Copper, Total	16.2	16.7	3.0	1.0
		Iron, Total	16700	19100	13.2	1.0
		Mercury, Total	0.02u	0.02u	NC	1.0
		Potassium, Total	1880	2080	9.8	1.0
		Magnesium, Total	6170	6640	7.3	1.0
		Manganese, Total	326	346	6.1	1.0
		Sodium, Total	146	166	12.5	1.0
		Nickel, Total	13.3	14.7	10	1.0
		Lead, Total	8.5	8.6	1.2	1.0
		Antimony, Total	0.22u	0.22u	NC	1.0
		Vanadium, Total	28.5	33.1	14.9	1.0
		Zinc, Total	42.5	45.8	7.5	1.0

Lionville Lababoratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 07/10/01

CLIENT: TNUHANFORD B01-084 H1381 LVL LOT #: 0106L036

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	01L0393-LC1	Silver, LCS	47.5	50.0	MG/KG	95.0
		Aluminum, LCS	485	500	MG/KG	96.9
		Barium, LCS	483	500	MG/KG	96.5
		Beryllium, LCS	24.3	25.0	MG/KG	97.2
		Calcium, LCS	2400	2500	MG/KG	96.0
		Cadmium, LCS	24.3	25.0	MG/KG	97.2
		Cobalt, LCS	246	250	MG/KG	98.4
		Chromium, LCS	49.9	50.0	MG/KG	99.8
		Copper, LCS	122	125	MG/KG	97.8
		Iron, LCS	496	500	MG/KG	99.2
		Potassium, LCS	2390	2500	MG/KG	95.7
		Magnesium, LCS	2400	2500	MG/KG	95.8
		Manganese, LCS	75.7	75.0	MG/KG	100.9
		Sodium, LCS	2320	2500	MG/KG	92.9
		Nickel, LCS	193	200	MG/KG	96.7
		Lead, LCS	239	250	MG/KG	95.5
		Antimony, LCS	286	300	MG/KG	95.4
		Vanadium, LCS	253	250	MG/KG	101.2
		Zinc, LCS	95.5	100	MG/KG	95.5
LCS1	01C0191-LC1	Mercury, LCS	2.5	2.5	MG/KG	102.3

Lionville Laboratory Use Only
01061036

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TNV-HANFORD #B01-084
Est. Final Proj. Sampling Date
Project # 11343-6006-001-9999-00
Project Contact/Phone #
Lionville Laboratory Project Manager OJ
QC Spc Del Std TAT 30 day

Date Rec'd 6-13-01 Date Due 7-13-01

		A	B						C		D					
Refrigerator #		1	4						4		4					
#/Type Container	Liquid															
	Solid	1AG	1AG						1AG		1AG					
Volume	Liquid															
	Solid	250	250						1L		250					
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN	Oil + Grease					
		Lionville Laboratory Use Only														
		02HH	02ESX						MET(1)		IOGGR					

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	02HH	02ESX						MET(1)		IOGGR					
001	B12041			S	6-11-01	0735	X	X						X		X					
002	B12045				6-11-01	1357	X	X						X		X					
003	B12046				6-11-01	1636	X	X						X		X					
004	B12142				6-11-01	1518	X	X													
005	B12042				6-11-01	0850	X	X						X		X					
006	B12043				6-11-01	0940	X	X						X		X					
007	B12044				6-11-01	1053	X	X						X		X					

Special Instructions: See B01-084

Run Matrix QC

DATE/REVISIONS:
1. Rec'd 1 cooler @ 0915
2. Rec'd 1 cooler @ 1500
3. Met(1) Al, Ag, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K,
4. Mg, Mn, Na, Ni, Sb, V, Zn, Pb, Hg
5.
6.

Relinquished by	Received by	Date	Time
FedEx	[signature]	6-13-01	9:15
FedEx	TKoppel	6-13-01	1500

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

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. 5° °C

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

4235 7954 5831

4235 7954 5842 -7.50

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B01-084-05 | Page 1 of 2

Collector: Fahlberg	Company Contact: C W Miller	Telephone No.: 372-9274	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days	Air Quality:	
Project Designation: Z-9 Trench Well Deepening and Characterization - Soil	Sampling Location: 200-Z-9	SAF No.: B01-084	
Ice Chest No.: ER-8 / ERC FS002	Field Logbook No.: EL 1517-1	COA: R20ZP2DP61	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A010325	Bill of Lading/Air Bill No.: 42357954 5031 & 5042	

POSSIBLE SAMPLE HAZARDS/REMARKS: <200pCi/g Per BHI-0501

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None						
Type of Container	aG	aG	aG	aG	aG						
No. of Container(s)	1	1	1	1	1						
Volume	250mL	250mL	250mL	500mL	1000mL						
SAMPLE ANALYSIS	Oil & Grease - 413.1	See item (1) in Special Instructions.	VOA - 8260A (TCL)	See item (2) in Special Instructions.	See item (3) in Special Instructions.						

RF 6.11.01

Sample No.	Matrix *	Sample Date	Sample Time										
~~B120X9~~	~~SOIL~~												
~~B120Y0~~	~~SOIL~~												
B120Y1 Rec'd @ 0915	SOIL	6.11.01	0735	X	X	X	X						
B120Y2 Rec'd @ 1500	SOIL	6.11.01	0850	X	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By: R. Fahlberg / R. Fahlberg	Received By: STORED IN Ref 2.C	6.11.01 1800
Relinquished By: Removed from Ref 2C 3728	Received By: R T Thoren	6/12/01 0400
Relinquished By: R T Thoren	Received By: FEDEX	6/12/01 0400
Relinquished By: FED Ex	Received By: Carla Hornung	6-13-01 9:15
Relinquished By: FedEx	Received By: TKepple	6-13-01 1500
Relinquished By:	Received By:	

SPECIAL INSTRUCTIONS

See SAF Comment Concerning Pu Analysis

(1) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (Add-On) (Tributyl phosphate)
(2) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Lead); Mercury - 7470 - (CV)
~~(3) Gamma Spectroscopy (Cesium-137, Cobalt-60); Gamma Spec - Add-on (Antimony-125); Isotopic Plutonium; Americium-241; Neptunium-237; Plutonium-241; Strontium-89,90 – Total Sr~~

RT 6-12-01

Samples stored in Ref. #2C at the 3728 Shipping Facility on 6/11/01
Collector not available to relenquish samples on 6/12/01 for shipment.

FT 6/12/01

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		B01-084-21	Page 1 of 1
Collector: Fahlberg	Company Contact: C W Miller	Telephone No.: 372-9274	Project Coordinator: TRENT, SJ	Price Code: 8N
Project Designation: Z-9 Trench Well Deepening and Characterization - Soil	Sampling Location: 200-Z-9		SAF No.: B01-084	Air Quality ☐
Ice Chest No.: ER-2 / ERC-FS-002	Field Logbook No.: EL1517-2	COA: R20ZP2DP61	Method of Shipment: Fed EX	
Shipped To: TMA/RECRA	Offsite Property No.: A010325		Bill of Lading/Air Bill No.: 4235 7954 - 5031 4 5042	

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
<2000 pCi/g per BHI-01509

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None								
Type of Container	aG	aG	aG								
No. of Container(s)	1	1	1								
Volume	120mL	250mL	500mL								
SAMPLE ANALYSIS	VOA - 8260A (TCL)	See item (1) in Special Instructions.	See item (2) in Special Instructions. R.F. 6.11.01								

Sample No.	Matrix *	Sample Date	Sample Time									
~~B12340~~	~~SOIL~~											
B121H2	Soil	6.11.01	1518	X	X							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: R. Fahlberg / R. Fahlberg, Date/Time: 6.11.01 1800	Received By: Stored in Ref 2-C, Date/Time: 6.11.01 1800		
Relinquished By: Removed from Ref 2-C 3728, Date/Time: 6/12/01 0900	Received By: R Thorent, Date/Time: 6/12/01 0900		
Relinquished By: R Thorent, Date/Time: 6/12/01 0900	Received By: FED EX, Date/Time:		
Relinquished By: FED Ex, Date/Time: 6.13.01 9:15 1500	Received By: Carlos Hernandez, Date/Time: 6.13.01 9:15 1500		
Relinquished By: Date/Time: 6.13.01	Received By: Date/Time: 6.13.01		
Relinquished By: Date/Time:	Received By: Date/Time:		

SPECIAL INSTRUCTIONS
See SAF Comment Concerning Pu Analysis

(1) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (Add-On) (Tributyl phosphate)
(2) ~~Gamma Spectroscopy (Cesium-137, Cobalt-60); Gamma Spec - Add-on (Antimony-125); Isotopic Plutonium; Americium-241; Neptunium-237; Plutonium-241; Strontium-89,90 - Total Sr~~

RT 6.12.01

Samples stored in Ref.# 2A at the 3728 Shipping Facility on 6/11/01. Collector not available to relenquish samples on 6/12/01 for shipment. RT 6/12/01

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	B01-084-15	Page 1 of 1

Collector: Fahlberg	Company Contact: C W Miller	Telephone No.: 372-9274	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: Z-9 Trench Well Deepening and Characterization - Soil	Sampling Location: 200-Z-9	SAF No.: B01-084	
Ice Chest No.: ER-8 / ERC FS-002	Field Logbook No.: EL 1517-1	COA: R20ZP2DP61	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A010325	Bill of Lading/Air Bill No.: 4235 7454 5631 & 5042	

POSSIBLE SAMPLE HAZARDS/REMARKS
<2000 pCi/g Per BHI-01509

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None					
Type of Container	aG	aG	aG	aG	aG					
No. of Container(s)	1	1	1	1	1					
Volume	250mL	250mL	250mL	500mL	1000mL					
SAMPLE ANALYSIS	Oil & Grease - 413.1	See item (1) in Special Instructions.	VOA - 8260A (TCL)	See item (2) in Special Instructions.	See item (3) in Special Instructions. TC 6-11-01					
Sample No.	Matrix *	Sample Date	Sample Time							
B120Y3, Rec'd @ 1500	SOIL	6-11-01	0940	X	X	X	X			
B120Y4	SOIL	6-11-01	1653	X	X	X	X			
B120Y5 Rec'd @ 0915	SOIL	6-11-01	1357	X	X	X	X			
B120Y6	SOIL	6-11-01	1636	X	X	X	X			

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By	Date/Time
Relinquished By	R. Fahlberg / R. Fahlberg	6-11-01 1800	Received By (STORED IN) Rec'd 2-C	6-11-01 1800
Relinquished By Removed from Rec'd 2C 3728		6-12-01 0900	Received By R Thorer	6/12/01 0900
Relinquished By R Thorer		6/12/01 0900	Received By FED EX	
Relinquished By FED EX		6-13-01 9:15	Received By Carlos Hernandez	6-13-01 9:15
Relinquished By FED EX		6-13-01 1500	Received By T Rippel	6-13-01 1500
Relinquished By			Received By	

SPECIAL INSTRUCTIONS
See SAF Comment Concerning Pu Analysis

(1) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {Tributyl phosphate}
(2) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) {Lead}; Mercury - 7470 - (CV)
~~(2) Gamma Spectroscopy (Cesium-137, Cobalt-60); Gamma Spec - Add-on (Antimony-125); Isotopic Plutonium, Americium-241, Neptunium-237, Plutonium-241, Strontium-89,90 -- Total Sr~~

RT 6-12-01

Samples stored in Ref.# 2C at the 3728 Shipping Facility on 6/11/01.
Collector not available to relenquish samples on 6/12/01 for shipment.
RT 6/12/01

Matrix *
S=Soil
SD=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.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-084 H1381

DATE RECEIVED: 06/13/01 LVL LOT # :0106L036

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B120Y1	001	S	01LE0698	06/11/01	06/14/01	06/30/01
B120Y5	002	S	01LE0698	06/11/01	06/14/01	06/30/01
B120Y6	003	S	01LE0698	06/11/01	06/14/01	07/02/01
B121H2	004	S	01LE0698	06/11/01	06/14/01	07/02/01
B120Y2	005	S	01LE0698	06/11/01	06/14/01	07/02/01
B120Y3	006	S	01LE0698	06/11/01	06/14/01	07/02/01
B120Y4	007	S	01LE0698	06/11/01	06/14/01	07/02/01
B120Y4	007 MS	S	01LE0698	06/11/01	06/14/01	07/02/01
B120Y4	007 MSD	S	01LE0698	06/11/01	06/14/01	07/02/01

LAB QC:

SBLKAE						
SBLKAE	MB1	S	01LE0698	N/A	06/14/01	06/29/01
SBLKAE	MB1 BS	S	01LE0698	N/A	06/14/01	06/29/01

JUL 2001
RECEIVED

LIONVILLE LABORATORY INC.

Client: TNU-HANFORD B01-084
RFW #: 0106L036
SDG/SAF #: H1381/B01-084

W.O. #: 11343-606-001-9999-00
Date Received: 06-13-2001

SEMIVOLATILE

Seven (7) soil samples were collected on 06-11-2001.

The samples and their associated QC samples were extracted on 06-14-2001 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL and Tributylphosphate Semivolatile target compounds on 06-29,30-2001 and 07-02-2001.

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 temperatures upon receipt have been recorded on the chain-of-custody.

2. Samples were extracted and analyzed within holding times.

3. Non-target compounds were detected in the samples.

4. All surrogate recoveries were within EPA QC limits.

5. One (1) of twenty-two (22) matrix spike recoveries was outside EPA QC limits.

6. All blank spike recoveries were within EPA QC limits.

7. Internal standard area and retention time criteria were met.

8. "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

7/13/01
Date

som\gorup\data\bna\tnu-hanford-0106-036.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 2 1 pages.

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

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
DONVILLE 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.

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, Special List — Report Date: 07/03/01 14:37

RFW Batch Number: **0106L036** — Client: **TNUHANFORD B01-084 H1381** — Work Order: 11343606001 — Page: 1a

	Cust ID:	B120Y1		B120Y5		B120Y6		B121H2		B120Y2		B120Y3	
Sample Information	RFW#:	001		002		003		004		005		006	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	69	%	64	%	81	%	82	%	66	%	72	%
	2-Fluorobiphenyl	64	%	60	%	69	%	75	%	55	%	58	%
	p-Terphenyl-d14	79	%	73	%	82	%	86	%	88	%	82	%
	Phenol-d5	62	%	61	%	72	%	76	%	57	%	67	%
	2-Fluorophenol	56	%	57	%	67	%	69	%	54	%	62	%
	2,4,6-Tribromophenol	57	%	60	%	64	%	71	%	65	%	63	%
			fl		fl		fl		fl		fl		fl
Phenol		380	U	340	U	340	U	330	U	400	U	380	U
bis(2-Chloroethyl)ether		380	U	340	U	340	U	330	U	400	U	380	U
2-Chlorophenol		380	U	340	U	340	U	330	U	400	U	380	U
1,3-Dichlorobenzene		380	U	340	U	340	U	330	U	400	U	380	U
1,4-Dichlorobenzene		380	U	340	U	340	U	330	U	400	U	380	U
1,2-Dichlorobenzene		380	U	340	U	340	U	330	U	400	U	380	U
2-Methylphenol		380	U	340	U	340	U	330	U	400	U	380	U
2,2'-oxybis(1-Chloropropane)		380	U	340	U	340	U	330	U	400	U	380	U
4-Methylphenol		380	U	340	U	340	U	330	U	400	U	380	U
N-Nitroso-Di-n-propylamine		380	U	340	U	340	U	330	U	400	U	380	U
Hexachloroethane		380	U	340	U	340	U	330	U	400	U	380	U
Nitrobenzene		380	U	340	U	340	U	330	U	400	U	380	U
Isophorone		380	U	340	U	340	U	330	U	400	U	380	U
2-Nitrophenol		380	U	340	U	340	U	330	U	400	U	380	U
2,4-Dimethylphenol		380	U	340	U	340	U	330	U	400	U	380	U
bis(2-Chloroethoxy)methane		380	U	340	U	340	U	330	U	400	U	380	U
2,4-Dichlorophenol		380	U	340	U	340	U	330	U	400	U	380	U
1,2,4-Trichlorobenzene		380	U	340	U	340	U	330	U	400	U	380	U
Naphthalene		380	U	340	U	340	U	330	U	400	U	380	U
4-Chloroaniline		380	U	340	U	340	U	330	U	400	U	380	U
Hexachlorobutadiene		380	U	340	U	340	U	330	U	400	U	380	U
4-Chloro-3-methylphenol		380	U	340	U	340	U	330	U	400	U	380	U
2-Methylnaphthalene		380	U	340	U	340	U	330	U	400	U	380	U
Hexachlorocyclopentadiene		380	U	340	U	340	U	330	U	400	U	380	U
2,4,6-Trichlorophenol		380	U	340	U	340	U	330	U	400	U	380	U
2,4,5-Trichlorophenol		950	U	850	U	860	U	830	U	1000	U	960	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0106L036 Client: TNUHANFORD B01-084 H1381 Work Order: 11343606001 Page: 1b

Cust ID:	B120Y1		B120Y5		B120Y6		B121H2		B120Y2		B120Y3	
RFW#:	001		002		003		004		005		006	
2-Chloronaphthalene	380	U	340	U	340	U	330	U	400	U	380	U
2-Nitroaniline	950	U	850	U	860	U	830	U	1000	U	960	U
Dimethylphthalate	380	U	340	U	340	U	330	U	400	U	380	U
Acenaphthylene	380	U	340	U	340	U	330	U	400	U	380	U
2,6-Dinitrotoluene	380	U	340	U	340	U	330	U	400	U	380	U
3-Nitroaniline	950	U	850	U	860	U	830	U	1000	U	960	U
Acenaphthene	380	U	340	U	340	U	330	U	400	U	380	U
2,4-Dinitrophenol	950	U	850	U	860	U	830	U	1000	U	960	U
4-Nitrophenol	950	U	850	U	860	U	830	U	1000	U	960	U
Dibenzofuran	380	U	340	U	340	U	330	U	400	U	380	U
2,4-Dinitrotoluene	380	U	340	U	340	U	330	U	400	U	380	U
Diethylphthalate	380	U	340	U	340	U	330	U	400	U	380	U
4-Chlorophenyl-phenylether	380	U	340	U	340	U	330	U	400	U	380	U
Fluorene	380	U	340	U	340	U	330	U	400	U	380	U
4-Nitroaniline	950	U	850	U	860	U	830	U	1000	U	960	U
4,6-Dinitro-2-methylphenol	950	U	850	U	860	U	830	U	1000	U	960	U
N-Nitrosodiphenylamine (1)	380	U	340	U	340	U	330	U	400	U	380	U
4-Bromophenyl-phenylether	380	U	340	U	340	U	330	U	400	U	380	U
Hexachlorobenzene	380	U	340	U	340	U	330	U	400	U	380	U
Pentachlorophenol	950	U	850	U	860	U	830	U	1000	U	960	U
Phenanthrene	380	U	340	U	340	U	330	U	400	U	380	U
Anthracene	380	U	340	U	340	U	330	U	400	U	380	U
Carbazole	380	U	340	U	340	U	330	U	400	U	380	U
Di-n-Butylphthalate	380	U	340	U	340	U	330	U	400	U	380	U
Fluoranthene	380	U	340	U	340	U	330	U	400	U	380	U
Pyrene	380	U	340	U	340	U	330	U	400	U	380	U
Butylbenzylphthalate	380	U	340	U	340	U	330	U	400	U	380	U
3,3'-Dichlorobenzidine	380	U	340	U	340	U	330	U	400	U	380	U
Benzo(a)anthracene	380	U	340	U	340	U	330	U	400	U	380	U
Chrysene	380	U	340	U	340	U	330	U	400	U	380	U
bis(2-Ethylhexyl)phthalate	380	U	340	U	340	U	1700		400	U	36	J
Di-n-Octyl phthalate	380	U	340	U	340	U	330	U	400	U	380	U
Benzo(b)fluoranthene	380	U	340	U	340	U	330	U	400	U	380	U
Benzo(k)fluoranthene	380	U	340	U	340	U	330	U	400	U	380	U
Benzo(a)pyrene	380	U	340	U	340	U	330	U	400	U	380	U
Indeno(1,2,3-cd)pyrene	380	U	340	U	340	U	330	U	400	U	380	U
Dibenzo(a,h)anthracene	380	U	340	U	340	U	330	U	400	U	380	U
Benzo(g,h,i)perylene	380	U	340	U	340	U	330	U	400	U	380	U
Tributylphosphate	380	U	340	U	340	U	330	U	400	U	380	U

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, Special List

Report Date: 07/03/01 14:37

RFW Batch Number: **0106L036** Client: **TNUHANFORD B01-084 H1381** Work Order: 11343606001 Page: 2a

	Cust ID:	B120Y4		B120Y4		B120Y4		SBLKAE		SBLKAE BS	
Sample Information	RFW#:	007		007 MS		007 MSD		01LE0698-MB1		01LE0698-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	79	%	77	%	94	%	72	%	72	%
	2-Fluorobiphenyl	67	%	72	%	83	%	73	%	74	%
	p-Terphenyl-d14	87	%	86	%	97	%	95	%	95	%
	Phenol-d5	74	%	68	%	86	%	73	%	71	%
	2-Fluorophenol	67	%	65	%	83	%	70	%	73	%
	2,4,6-Tribromophenol	70	%	72	%	80	%	74	%	72	%
			fl		fl		fl		fl		fl
Phenol		350	U	67	%	86	%	330	U	71	%
bis(2-Chloroethyl)ether		350	U	350	U	360	U	330	U	330	U
2-Chlorophenol		350	U	67	%	87	%	330	U	72	%
1,3-Dichlorobenzene		350	U	350	U	360	U	330	U	330	U
1,4-Dichlorobenzene		350	U	61	%	78	%	330	U	67	%
1,2-Dichlorobenzene		350	U	350	U	360	U	330	U	330	U
2-Methylphenol		350	U	350	U	360	U	330	U	330	U
2,2'-oxybis(1-Chloropropane)		350	U	350	U	360	U	330	U	330	U
4-Methylphenol		350	U	350	U	360	U	330	U	330	U
N-Nitroso-Di-n-propylamine		350	U	80	%	99	%	330	U	64	%
Hexachloroethane		350	U	350	U	360	U	330	U	330	U
Nitrobenzene		350	U	350	U	360	U	330	U	330	U
Isophorone		350	U	350	U	360	U	330	U	330	U
2-Nitrophenol		350	U	350	U	360	U	330	U	330	U
2,4-Dimethylphenol		350	U	350	U	360	U	330	U	330	U
bis(2-Chloroethoxy)methane		350	U	350	U	360	U	330	U	330	U
2,4-Dichlorophenol		350	U	350	U	360	U	330	U	330	U
1,2,4-Trichlorobenzene		350	U	67	%	85	%	330	U	73	%
Naphthalene		350	U	350	U	360	U	330	U	330	U
4-Chloroaniline		350	U	350	U	360	U	330	U	330	U
Hexachlorobutadiene		350	U	350	U	360	U	330	U	330	U
4-Chloro-3-methylphenol		350	U	80	%	89	%	330	U	65	%
2-Methylnaphthalene		350	U	350	U	360	U	330	U	330	U
Hexachlorocyclopentadiene		350	U	350	U	360	U	330	U	330	U
2,4,6-Trichlorophenol		350	U	350	U	360	U	330	U	330	U
2,4,5-Trichlorophenol		890	U	880	U	890	U	830	U	830	U

*= Outside of EPA CLP QC limits.

Cust ID:	B120Y4		B120Y4		B120Y4		SBLKAE		SBLKAE BS	
RFW#:	007		007 MS		007 MSD		01LE0698-MB1		01LE0698-MB1	
2-Chloronaphthalene	350	U	350	U	360	U	330	U	330	U
2-Nitroaniline	890	U	880	U	890	U	830	U	830	U
Dimethylphthalate	350	U	350	U	360	U	330	U	330	U
Acenaphthylene	350	U	350	U	360	U	330	U	330	U
2,6-Dinitrotoluene	350	U	350	U	360	U	330	U	330	U
3-Nitroaniline	890	U	880	U	890	U	830	U	830	U
Acenaphthene	350	U	77	%	88	%	330	U	71	%
2,4-Dinitrophenol	890	U	880	U	890	U	830	U	830	U
4-Nitrophenol	890	U	77	%	89	%	830	U	56	%
Dibenzofuran	350	U	350	U	360	U	330	U	330	U
2,4-Dinitrotoluene	350	U	79	%	92 *	%	330	U	60	%
Diethylphthalate	350	U	350	U	360	U	330	U	330	U
4-Chlorophenyl-phenylether	350	U	350	U	360	U	330	U	330	U
Fluorene	350	U	350	U	360	U	330	U	330	U
4-Nitroaniline	890	U	880	U	890	U	830	U	830	U
4,6-Dinitro-2-methylphenol	890	U	880	U	890	U	830	U	830	U
N-Nitrosodiphenylamine (1)	350	U	350	U	360	U	330	U	330	U
4-Bromophenyl-phenylether	350	U	350	U	360	U	330	U	330	U
Hexachlorobenzene	350	U	350	U	360	U	330	U	330	U
Pentachlorophenol	890	U	61	%	73	%	830	U	69	%
Phenanthrene	350	U	350	U	360	U	330	U	330	U
Anthracene	350	U	350	U	360	U	330	U	330	U
Carbazole	350	U	350	U	360	U	330	U	330	U
Di-n-Butylphthalate	350	U	350	U	360	U	330	U	330	U
Fluoranthene	350	U	350	U	360	U	330	U	330	U
Pyrene	350	U	82	%	94	%	330	U	91	%
Butylbenzylphthalate	350	U	350	U	360	U	330	U	330	U
3,3'-Dichlorobenzidine	350	U	350	U	360	U	330	U	330	U
Benzo(a)anthracene	350	U	350	U	360	U	330	U	330	U
Chrysene	350	U	350	U	360	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	37	J	40	J	33	J	330	U	330	U
Di-n-Octyl phthalate	350	U	350	U	360	U	330	U	330	U
Benzo(b)fluoranthene	350	U	350	U	360	U	330	U	330	U
Benzo(k)fluoranthene	350	U	350	U	360	U	330	U	330	U
Benzo(a)pyrene	350	U	350	U	360	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	350	U	350	U	360	U	330	U	330	U
Dibenzo(a,h)anthracene	350	U	350	U	360	U	330	U	330	U
Benzo(g,h,i)perylene	350	U	350	U	360	U	330	U	330	U
Tributylphosphate	350	U	350	U	360	U	330	U	330	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.

B120Y1

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

Client: TNUHANFORD B01-084 H1381

Matrix: (soil/water) SOIL

Lab Sample ID: 0106L036-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C063014

Level: (low/med) LOW

Date Received: 06/13/01

% Moisture: 12 decanted: (Y/N)__

Date Extracted: 06/14/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/30/01

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/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.250	200	JB
2.	UNKNOWN	19.912	200	J
3.	ALKANE	23.210	200	J
4.	ALKANE	25.308	200	J
5.	UNKNOWN	25.456	400	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B120Y5

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

Client: TNUHANFORD B01-084 H1381

Matrix: (soil/water) SOIL

Lab Sample ID: 0106L036-002

Sample wt/vol: 30.3 (g/mL) G

Lab File ID: C063015

Level: (low/med) LOW

Date Received: 06/13/01

% Moisture: 3 decanted: (Y/N)__

Date Extracted: 06/14/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/30/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.250	100	JB
2.	ALKANE	23.219	70	J

11

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B120Y6

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

Client: TNUHANFORD B01-084 H1381

Matrix: (soil/water) SOIL

Lab Sample ID: 0106L036-003

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C070205

Level: (low/med) LOW

Date Received: 06/13/01

% Moisture: 3 decanted: (Y/N)__

Date Extracted: 06/14/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 07/02/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.241	200	JB
2.	ALKANE	23.150	80	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B121H2

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

Client: TNUHANFORD B01-084 H1381

Matrix: (soil/water) SOIL

Lab Sample ID: 0106L036-004

Sample wt/vol: 30.8 (g/mL) G

Lab File ID: C070206

Level: (low/med) LOW

Date Received: 06/13/01

% Moisture: 2 decanted: (Y/N)__

Date Extracted: 06/14/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 07/02/01

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/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.241	200	JB
2.	ALKANE	22.105	10	J
3.	ALKANE	23.158	100	J
4.	UNKNOWN	25.212	100	J
5.	UNKNOWN	25.360	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B120Y2

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

Client: TNUHANFORD B01-084 H1381

Matrix: (soil/water) SOIL

Lab Sample ID: 0106L036-005

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C070207

Level: (low/med) LOW

Date Received: 06/13/01

% Moisture: 16 decanted: (Y/N)__

Date Extracted: 06/14/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 07/02/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

14

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B120Y3

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

Client: TNUHANFORD B01-084 H1381

Matrix: (soil/water) SOIL

Lab Sample ID: 0106L036-006

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C070208

Level: (low/med) LOW

Date Received: 06/13/01

% Moisture: 13 decanted: (Y/N)__

Date Extracted: 06/14/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 07/02/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.249	100	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B120Y4

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

Client: TNUHANFORD B01-084 H1381

Matrix: (soil/water) SOIL

Lab Sample ID: 0106L036-007

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: C070209

Level: (low/med) LOW

Date Received: 06/13/01

% Moisture: 7 decanted: (Y/N)__

Date Extracted: 06/14/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 07/02/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.241	100	JB
2.	ORGANIC ACID	20.730	70	J
3.	UNKNOWN	26.770	70	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKAE

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

Client: TNUHANFORD B01-084 H1381

Matrix: (soil/water) SOIL

Lab Sample ID: 01LE0698-MB1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D062910

Level: (low/med) LOW

Date Received: 06/14/01

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

Date Extracted: 06/14/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/29/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.601	300	J

Lionville Laboratory Use Only
01061036

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

Client TNV-HANFORD #B01-084
Est. Final Proj. Sampling Date
Project # 11343-6060-001-9999-00
Project Contact/Phone #
Lionville Laboratory Project Manager OJ
QC Spec Del Std TAT 30 day

Date Rec'd 6-13-01 Date Due 7-13-01

		A	B	C	D
Refrigerator #		1	4	4	4
#/Type Container	Liquid				
	Solid	1AG	1AG	1AG	1AG
Volume	Liquid				
	Solid	250	250	1L	250
Preservatives					
ANALYSES REQUESTED →		ORGANIC: VOA	ORGANIC: BNA	ORGANIC: Pest/PCB	ORGANIC: Herb
		INORG: Metal	INORG: CN	Oil & Grease	
Lionville Laboratory Use Only		02HH	02CSX	Met (1)	IOGGR

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	02HH	02CSX	Met (1)	IOGGR
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	001	B12041			S	6-11-01	0735	X	X	X	X
	002	B12045				6-11-01	1357	X	X	X	X
	003	B12046				6-11-01	1636	X	X	X	X
	004	B121H2				6-11-01	1518	X	X		
	005	B12042				6-11-01	0850	X	X	X	X
	006	B12043				6-11-01	0940	X	X	X	X
	007	B12044				6-11-01	1053	X	X	X	X

Special Instructions: SAP B01-084

Run Matrix QC

DATE/REVISIONS:

1. Rec'd 1 cooler @ 0915
2. Rec'd 1 cooler @ 1500
3. Met (1) Al, Ag, Ba, Br, Ca, Cd, Co, Cr, Cu, Fe, K,
4. Mg, Mn, Na, Ni, Sb, V, Zn, Pb, Hg
5.
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. 5° °C

Relinquished by	Received by	Date	Time
1-4 FedEx	[signature]	6-13-01	9:15
5-7 FedEx	TBoppel	6-13-01	1500

Relinquished by	Received by	Date	Time

COMPOSITE WASTE

ORIGINAL REWRITTEN

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

4235 7954 5831

4235 7954 5842 - 7.5A

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B01-084-15	Page 1 of 1

Collector: Fahlberg	Company Contact: C W Miller	Telephone No.: 372-9274	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: Z-9 Trench Well Deepening and Characterization - Soil	Sampling Location: 200- Z- 9	SAF No.: B01-084	
Ice Chest No.: ER-8 / ERCFS-002	Field Logbook No.: EL 1517-1	COA: R20ZP2DP61	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: 010325	Bill of Lading/Air Bill No.: 4235 7454 5631 & 5042	

POSSIBLE SAMPLE HAZARDS/REMARKS
<2000 pCi/g Per BHI-01509

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None					
Type of Container	aG	aG	aG	aG	aG					
No. of Container(s)	1	1	1	1	1					
Volume	250mL	250mL	250mL	500mL	1000mL					
SAMPLE ANALYSIS	Oil & Grease - 413.1	See item (1) in Special Instructions.	VOA - 8260A (TCL)	See item (2) in Special Instructions.	See item (3) in Special Instructions.					

Sample No.	Matrix *	Sample Date	Sample Time										
B120Y3 Rec'd @ 1500	SOIL	6-11-01	0940	X	X	X	X						
B120Y4	SOIL	6-11-01	1653	X	X	X	X						
B120Y5 Rec'd @	SOIL	6-11-01	1357	X	X	X	X						
B120Y6 0915	SOIL	6-11-01	1636	X	X	X	X						

RT 6-11-01

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg / R. Fahlberg	6-11-01 1800	STORED IN Ref 2-C	6-11-01 1800
Relinquished By: REMOVED FROM Ref 2C 3728	Date/Time 0900 6-12-01	Received By: R Thorne	Date/Time 0900 6/12/01
Relinquished By: R Thorne	Date/Time 0900 6/12/01	Received By: FED EX	Date/Time
Relinquished By: FED EX	Date/Time 6-13-01 9:15	Received By: Carlos Hernandez	Date/Time 6-13-01 9:15
Relinquished By: FEDEX	Date/Time 6-13-01 1500	Received By: T Rippel	Date/Time 6-13-01 1500
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

See SAF Comment Concerning Pu Analysis

(1) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {Tributyl phosphate}
(2) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) {Lead}; Mercury - 7470 - (CV)
~~(3) Gamma Spectroscopy (Cesium-137, Cobalt-60); Gamma Spec - Add-on (Antimony-125); Isotopic Plutonium, Americium-241, Neptunium-237, Plutonium-241, Strontium-89,90 - Total Sr~~

RT 6-12-01

Samples stored in Ref.# 2C at the 3728 Shipping Facility on 6/11/01. Collector not available to relenquish samples on 6/12/01 for shipment.

RT 6/12/01

Matrix *
S=Soil
SD=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	B01-084-21	Page 1 of 1

Collector: Fahlberg	Company Contact: C W Miller — Telephone No.: 372-9274	Project Coordinator: TRENT, SJ	Price Code: 8N — Data Turnaround: 45 Days
Project Designation: Z-9 Trench Well Deepening and Characterization - Soil	Sampling Location: 200-Z-9	SAF No.: B01-084	Air Quality ☐
Ice Chest No.: ER-2 / ERC-FS-002	Field Logbook No.: EL1517-2 — COA: R20ZP2DP61	Method of Shipment: Fed EX	
Shipped To: TMA/RECRA	Offsite Property No.: A010325	Bill of Lading/Air Bill No.: 4235 7454 - 5031 & 5042	

POSSIBLE SAMPLE HAZARDS/REMARKS
L2000 pCi/g per BHI-01509

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None
Type of Container	aG	aG	aG
No. of Container(s)	1	1	1
Volume	120mL	250mL	500mL
SAMPLE ANALYSIS	VOA - 8260A (TCL)	See item (1) in Special Instructions.	See item (2) in Special Instructions. R.F. 6.11.01

Sample No.	Matrix *	Sample Date	Sample Time			
~~B12540~~	~~SOIL~~					
B121H2	Soil	6.11.01	1518	X	X	

RF 6.11.01

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: R. Fahlberg	Date/Time: 1800 6.11.01	Received By: Stored in Ref 2-C	Date/Time: 1800 6.11.01
Relinquished By: Removed from Ref 2-C 3728	Date/Time: 0900 6/12/01	Received By: R Thorey	Date/Time: 0900 6/12/01
Relinquished By: R Thorey	Date/Time: 0900 6/12/01	Received By: FED EX	Date/Time:
Relinquished By: FED EX	Date/Time: 6.13.01 9:15 1500	Received By: Carlos Hernandez	Date/Time: 1500 6.13.01 9:15
Relinquished By:	Date/Time: 6.13.01	Received By:	Date/Time: 6.13.01
Relinquished By:	Date/Time:	Received By:	Date/Time:

SPECIAL INSTRUCTIONS
See SAF Comment Concerning Pu Analysis

(1) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {Tributyl phosphate}
(2) ~~Gamma Spectroscopy (Cesium-137, Cobalt-60); Gamma Spec - Add-on (Antimony-125); Isotopic Plutonium; Americium-241; Neptunium-237; Plutonium-241; Strontium-89,90 -- Total Sr~~

RT 6-12-01

Samples stored in Ref.# 2C at the 3728 Shipping Facility on 6/11/01.
Collector not available to relenquish samples on 6/12/01 for shipment.
RT 6/12/01

Matrix *
S=Soil
SD=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

B01-084-05

Collector: Fahlberg	Company Contact: C W Miller	Telephone No.: 372-9274	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days	Air Quality: ☐	
Project Designation: Z-9 Trench Well Deepening and Characterization - Soil	Sampling Location: 200- Z- 9		SAF No.: B01-084
Ice Chest No.: ER-8 / ERC FS002	Field Logbook No.: EL 1517-1	COA: R20ZP2DP61	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A010325		Bill of Lading/Air Bill No.: 42357954 5031 & 5042

POSSIBLE SAMPLE HAZARDS/REMARKS: <200 pCi/g Per BHI-0501

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None						
Type of Container	aG	aG	aG	aG	aG						
No. of Container(s)	1	1	1	1	1						
Volume	250mL	250mL	250mL	500mL	1000mL						
SAMPLE ANALYSIS	Oil & Grease - 413.1	See item (1) in Special Instructions	VOA - 8260A (TCL)	See item (2) in Special Instructions	See item (3) in Special Instructions RF 6.11.01						
Sample No.	Matrix *	Sample Date	Sample Time								
~~B120X0~~	~~SOIL~~										
~~B120Y0~~	~~SOIL~~										
B120Y1 Prec'd @0915	SOIL	6-11-01	0735	X	X	X	X				
B120Y2 Prec'd @1500	SOIL	6-11-01	0850	X	X	X	X				

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By: R. Fahlberg	R. Fahlberg	6-11-01 1800
Received By: STORED IN Ref 2-C		6-11-01 1800
Relinquished By: Removed from Ref 2C 3728		6/12/01 0400
Received By: R Thoren		6/12/01 0400
Relinquished By: R Thoren		6/12/01 0400
Received By: FEDEX		
Relinquished By: FED EX		6-13-01 9:15
Received By: Carla Hernandez		6-13-01 9:15
Relinquished By: Fed Ex		6-13-01 1500
Received By: T Rippel		6-13-01 1500
Relinquished By		
Received By		

SPECIAL INSTRUCTIONS

See SAF Comment Concerning Pu Analysis

(1) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {Tributyl phosphate}
(2) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) {Lead}; Mercury - 7470 - (CV)
~~(3) Gamma Spectroscopy {Cesium-137, Cobalt-60}; Gamma Spec. Add-on {Antimony-125}; Isotopic Plutonium; Americium-241; Neptunium-237; Plutonium-241; Strontium-89,90 -- Total Sr~~

RT 6-12-01

Samples stored in Ref. 2C at the 3728 Shipping Facility on 6/11/01
Collector not available to relenquish samples on 6/12/01 for shipment.

RT 6/12/01

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.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-084 H1381

RFW LOT # :0106L036

CLIENT ID	RFW #	MTX	PREP #	COLLECTN	DATE REC	EXT/PREP	ANALYSIS
B120Y1	001	S	01LVX172	06/11/01	06/13/01	N/A	06/18/01
B120Y5	002	S	01LVX172	06/11/01	06/13/01	N/A	06/18/01
B120Y5	002 MS	S	01LVH240	06/11/01	06/13/01	N/A	06/20/01
B120Y5	002 MSD	S	01LVH240	06/11/01	06/13/01	N/A	06/20/01
B120Y6	003	S	01LVX172	06/11/01	06/13/01	N/A	06/18/01
B121H2	004	S	01LVH240	06/11/01	06/13/01	N/A	06/20/01
B120Y2	005	S	01LVH240	06/11/01	06/13/01	N/A	06/20/01
B120Y3	006	S	01LVX172	06/11/01	06/13/01	N/A	06/18/01
B120Y4	007	S	01LVH240	06/11/01	06/13/01	N/A	06/20/01
LAB QC:							
VBLKFH	MB1	S	01LVX172	N/A	N/A	N/A	06/17/01
VBLKFH	MB1 BS	S	01LVX172	N/A	N/A	N/A	06/17/01
VBLKCW	MB1	S	01LVH240	N/A	N/A	N/A	06/20/01
VBLKCW	MB1 BS	S	01LVH240	N/A	N/A	N/A	06/20/01

JUL 2001
RECEIVED

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B01-084
RFW #: 0106L036
SDG/SAF #: H1381/B01-084

W.O. #: 11343-606-001-9999-00
Date Received: 06-13-01

GC/MS VOLATILE

The set of samples consisted of seven (7) soil samples collected on 06-11-01.

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 06-17,18,20-01.

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

1. All cooler temperatures upon receipt have been recorded on the chain-of-custody.
2. The samples were analyzed within required holding time.
3. Non-target compounds were 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 RPDs were within EPA QC limits.
7. All blank spike recoveries were within EPA QC limits.
8. The method blanks contained the common laboratory contaminants Methylene Chloride and/or Acetone at levels less than 2x the CRQL.
9. Internal standard area and retention time criteria were met.
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

7/23/01
Date

pef\group\data\voa\tnu-hanford\0106-036.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 24 pages.

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.

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.

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.
Volatiles by GC/MS, HSL List
Report Date: 07/15/01 21:24

RFW Batch Number: 0106L036 Client: TNUHANFORD B01-084 H1381 Work Order: 11343606001 Page: 1a

	Cust ID:	B120Y1		B120Y5		B120Y5		B120Y5		B120Y6		B121H2	
Sample Information	RFW#:	001		002		002 MS		002 MSD		003		004	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	0.909		0.980		0.980		0.980		0.962		0.980	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Toluene-d8	95	%	101	%	95	%	99	%	96	%	99	%
	Bromofluorobenzene	80	%	82	%	96	%	99	%	81	%	106	%
	1,2-Dichloroethane-d4	64	%	65	%	92	%	92	%	65	%	94	%
		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		6	B	7	B	19	B	18	B	6	B	16	B
Acetone		10	U	9	J	12	B	16	B	10	U	5	JB
Carbon Disulfide		5	U	5	U	5	U	5	U	5	U	5	U
1,1-Dichloroethene		5	U	5	U	84	%	80	%	5	U	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	5	J	7	J	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	82	%	82	%	5	U	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	97	%	96	%	5	U	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	105	%	105	%	5	U	5	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0106L036 Client: TNUHANFORD B01-084 H1381 Work Order: 11343606001 Page: 1b

Cust ID:	B120Y1	B120Y5	B120Y5	B120Y5	B120Y6	B121H2
RFW#:	001	002	002 MS	002 MSD	003	004
Chlorobenzene	5 U	5 U	96 %	97 %	5 U	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: 07/15/01 21:24

RFW Batch Number: 0106L036 Client: **TNUHANFORD B01-084 H1381** Work Order: 11343606001 Page: 2a

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	Cust ID:	B120Y2		B120Y3		B120Y4		VBLKFH		VBLKFH BS		VBLKCW	
Sample Information	RFW#:	005		006		007		01LVX172-MB1		01LVX172-MB1		01LVH240-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Toluene-d8	96	%	105	%	102	%	122	%	103	%	96	%
	Bromofluorobenzene	102	%	86	%	103	%	97	%	85	%	105	%
	1,2-Dichloroethane-d4	91	%	65	%	93	%	76	%	68	%	92	%
			fl		fl		fl		fl		fl		fl
Chloromethane		12	U	12	U	11	U	10	U	10	U	10	U
Bromomethane		12	U	12	U	11	U	10	U	10	U	10	U
Vinyl Chloride		12	U	12	U	11	U	10	U	10	U	10	U
Chloroethane		12	U	12	U	11	U	10	U	10	U	10	U
Methylene Chloride		24	B	9	B	21	B	7		7	B	3	J
Acetone		12	U	12	U	19	B	10	U	10	U	6	J
Carbon Disulfide		6	U	6	U	6	U	5	U	5	U	5	U
1,1-Dichloroethene		6	U	6	U	6	U	5	U	82	%	5	U
1,1-Dichloroethane		6	U	6	U	6	U	5	U	5	U	5	U
1,2-Dichloroethene (total)		6	U	6	U	6	U	5	U	5	U	5	U
Chloroform		5	J	5	J	6	U	5	U	5	U	5	U
1,2-Dichloroethane		6	U	6	U	6	U	5	U	5	U	5	U
2-Butanone		12	U	12	U	7	J	10	U	10	U	10	U
1,1,1-Trichloroethane		6	U	6	U	6	U	5	U	5	U	5	U
Carbon Tetrachloride		2	J	9		6	U	5	U	5	U	5	U
Bromodichloromethane		6	U	6	U	6	U	5	U	5	U	5	U
1,2-Dichloropropane		6	U	6	U	6	U	5	U	5	U	5	U
cis-1,3-Dichloropropene		6	U	6	U	6	U	5	U	5	U	5	U
Trichloroethene		6	U	6	U	6	U	5	U	86	%	5	U
Dibromochloromethane		6	U	6	U	6	U	5	U	5	U	5	U
1,1,2-Trichloroethane		6	U	6	U	6	U	5	U	5	U	5	U
Benzene		6	U	6	U	6	U	5	U	88	%	5	U
Trans-1,3-Dichloropropene		6	U	6	U	6	U	5	U	5	U	5	U
Bromoform		6	U	6	U	6	U	5	U	5	U	5	U
4-Methyl-2-pentanone		12	U	12	U	11	U	10	U	10	U	10	U
2-Hexanone		12	U	12	U	11	U	10	U	10	U	10	U
Tetrachloroethene		6	U	6	U	6	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane		6	U	6	U	6	U	5	U	5	U	5	U
Toluene		6	U	6	U	6	U	5	U	99	%	5	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0106L036 Client: TNUHANFORD B01-084 H1381 Work Order: 11343606001 Page: 2b

Cust ID:	B120Y2	B120Y3	B120Y4	VBLKFH	VBLKFH BS	VBLKCW
RFW#:	005	006	007	01LVX172-MB1	01LVX172-MB1	01LVH240-MB1
Chlorobenzene	6 U	6 U	6 U	5 U	92 %	5 U
Ethylbenzene	6 U	6 U	6 U	5 U	5 U	5 U
Styrene	6 U	6 U	6 U	5 U	5 U	5 U
Xylene (total)	6 U	6 U	6 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

Cust ID: **VBLKCW BS**

Sample Information

RFW#: **01LVH240-MB1**
Matrix: SOIL
D.F.: 1.00
Units: ug/Kg

Surrogate Recovery	Toluene-d8	97	%
	Bromofluorobenzene	108	%
	1,2-Dichloroethane-d4	93	%

==========fl==========fl==========fl==========fl==========fl==========fl

Chloromethane	10	U
Bromomethane	10	U
Vinyl Chloride	10	U
Chloroethane	10	U
Methylene Chloride	10	B
Acetone	5	JB
Carbon Disulfide	5	U
1,1-Dichloroethene	80	%
1,1-Dichloroethane	5	U
1,2-Dichloroethene (total)	5	U
Chloroform	5	U
1,2-Dichloroethane	5	U
2-Butanone	10	U
1,1,1-Trichloroethane	5	U
Carbon Tetrachloride	5	U
Bromodichloromethane	5	U
1,2-Dichloropropane	5	U
cis-1,3-Dichloropropene	5	U
Trichloroethene	83	%
Dibromochloromethane	5	U
1,1,2-Trichloroethane	5	U
Benzene	96	%
Trans-1,3-Dichloropropene	5	U
Bromoform	5	U
4-Methyl-2-pentanone	10	U
2-Hexanone	10	U
Tetrachloroethene	5	U
1,1,2,2-Tetrachloroethane	5	U
Toluene	103	%

*= Outside of EPA CLP QC limits.

Cust ID: **VBLKCW BS**

RFW#: **01LVH240-MB1**

Chlorobenzene	99	%
Ethylbenzene	5	U
Styrene	5	U
Xylene (total)	5	U

*= Outside of EPA CLP QC limits.

11

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B120Y1

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0106L036-001

Sample wt/vol: 5.50 (g/mL) G Lab File ID: x061733

Level: (low/med) LOW Date Received: 06/13/01

% Moisture: not dec. 12 Date Analyzed: 06/18/01

Column: (pack/cap) CAP Dilution Factor: 0.909

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B120Y5

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0106L036-002

Sample wt/vol: 5.10 (g/mL) G Lab File ID: x061734

Level: (low/med) LOW Date Received: 06/13/01

% Moisture: not dec. 3 Date Analyzed: 06/18/01

Column: (pack/cap) CAP Dilution Factor: 0.980

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B120Y6

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0106L036-003

Sample wt/vol: 5.20 (g/mL) G Lab File ID: x061735

Level: (low/med) LOW Date Received: 06/13/01

% Moisture: not dec. 3 Date Analyzed: 06/18/01

Column: (pack/cap) CAP Dilution Factor: 0.962

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B121H2

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0106L036-004

Sample wt/vol: 5.10 (g/mL) G Lab File ID: h062007

Level: (low/med) LOW Date Received: 06/13/01

% Moisture: not dec. 2 Date Analyzed: 06/20/01

Column: (pack/cap) CAP Dilution Factor: 0.980

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	22.263	8	J
2.	UNKNOWN	24.543	5	J
3.	UNKNOWN	25.866	9	J

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B120Y2

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0106L036-005

Sample wt/vol: 5.00 (g/mL) G Lab File ID: h062008

Level: (low/med) LOW Date Received: 06/13/01

% Moisture: not dec. 16 Date Analyzed: 06/20/01

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 811972	NORFLURANE	2.630	30	NJ
2.	SILOXANE	22.257	8	J

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B120Y3

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0106L036-006

Sample wt/vol: 5.00 (g/mL) G Lab File ID: x061738

Level: (low/med) LOW Date Received: 06/13/01

% Moisture: not dec. 13 Date Analyzed: 06/18/01

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B120Y4

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0106L036-007

Sample wt/vol: 5.00 (g/mL) G Lab File ID: h062009

Level: (low/med) LOW Date Received: 06/13/01

% Moisture: not dec. 7 Date Analyzed: 06/20/01

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 811972	NORFLURANE	2.616	20	NJ
2.	SILOXANE	22.263	10	J

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKFH

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 01LVX172-MB1

Sample wt/vol: 5.00 (g/mL) G Lab File ID: x061727

Level: (low/med) LOW Date Received: 06/17/01

% Moisture: not dec. 0 Date Analyzed: 06/17/01

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKCW

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 01LVH240-MB1

Sample wt/vol: 5.00 (g/mL) G Lab File ID: h062005

Level: (low/med) LOW Date Received: 06/20/01

% Moisture: not dec. 0 Date Analyzed: 06/20/01

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

Lionville Laboratory Use Only

01061036

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNV-HANFORD #B01-084

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: 6-13-01 Date Due: 7-13-01

		A	B						C		D					
Refrigerator #		1	4						4		4					
#/Type Container	Liquid															
	Solid	1AG	1AG						1AG		1AG					
Volume	Liquid															
	Solid	250	250						1L		250					
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN	Oil + Grease					
		Lionville Laboratory Use Only														
		8260HH	8270SX						Met (1)		1664GR					

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected												
001	B12041			S	6-11-01	0735	X	X					X		X			
002	B12045				6-11-01	1357	X	X					X		X			
003	B12046				6-11-01	1636	X	X					X		X			
004	B12142				6-11-01	1518	X	X										
005	B12042				6-11-01	0850	X	X					X		X			
006	B12043				6-11-01	0940	X	X					X		X			
007	B12044				6-11-01	1053	X	X					X		X			

Special Instructions: See B01-084

Run Matrix QC

DATE/REVISIONS:

1. Rec'd 1 cooler @ 0915
2. Rec'd 1 cooler @ 1500
3. Met (1) Al, Ag, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K,
4. Mg, Mn, Na, Ni, Sb, V, Zn, Pb, Hg
5.
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'd (Y) or N

Cooler Temp. 5° °C

	Relinquished by	Received by	Date	Time
1-4	FedEx	[signature]	6-13-01	9:15
5-7	FedEx	TKrupel	6-13-01	1500

Relinquished by	Received by	Date	Time

COMPOSITE WASTE

ORIGINAL REWRITTEN

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

NOTES:

4235 7954 5831

4235 7954 5842 - 7.59

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B01-084-15	Page 1 of 1
Collector: Fahlberg	Company Contact: C W Miller	Telephone No.: 372-9274	Project Coordinator: TRENT, SJ	Price Code: 8N
Project Designation: Z-9 Trench Well Deepening and Characterization - Soil	Sampling Location: 200- Z- 9		SAF No.: B01-084	Air Quality ☐
Ice Chest No.: ER-8 / ERCFS-002	Field Logbook No.: EL 1517-1	COA: R20ZP2DP61	Method of Shipment: Fed EX	Data Turnaround: 45 Days
Shipped To: TMA/RECRA	Offsite Property No.: A010325		Bill of Lading/Air Bill No.: 4235 7454 5031 & 5042	

POSSIBLE SAMPLE HAZARDS/REMARKS

<2000 pCi/g Per BHI-01509

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None					
Type of Container	aG	aG	aG	aG	aG					
No. of Container(s)	1	1	1	1	1					
Volume	250mL	250mL	250mL	500mL	1000mL					
SAMPLE ANALYSIS	Oil & Grease - 413.1	See item (1) in Special Instructions.	VOA - 8260A (TCL)	See item (2) in Special Instructions.	See item (3) in Special Instructions. TC 6-11-01					

Sample No.	Matrix *	Sample Date	Sample Time									
B120Y3, Rec'd @ 1500	SOIL	6-11-01	0940	X	X	X	X					
B120Y4	SOIL	6-11-01	1653	X	X	X	X					
B120Y5 Rec'd @ 0915	SOIL	6-11-01	1357	X	X	X	X					
B120Y6	SOIL	6-11-01	1636	X	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By: R. Fahlberg / R. Fahlberg		6-11-01 1800
Received By: STORED IN Ref 2-C		6-11-01 1800
Relinquished By: REMOVED FROM Ref 2C 3728		6-12-01 0400
Received By: R Thorer		6/12/01 0400
Relinquished By: R Thorer		6/12/01 0400
Received By: FED EX		
Relinquished By: FED EX		6-13-01 9:15
Received By: Carlos Hernandez		6-13-01 9:15
Relinquished By: FEDEX		6-13-01 1500
Received By: T Rappe		6-13-01 1500
Relinquished By:		
Received By:		

SPECIAL INSTRUCTIONS

See SAF Comment Concerning Pu Analysis

(1) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {Tributyl phosphate}
(2) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) {Lead}; Mercury - 7470 - (CV)
~~(3) Gamma Spectroscopy (Cesium-137, Cobalt-60); Gamma Spec - Add-on (Antimony-125); Isotopic Plutonium, Americium-241, Neptunium-237, Plutonium-241, Strontium-90.00 - Total Sr~~

RT 6-12-01

Samples stored in Ref.# 2C at the 3728 Shipping Facility on 6/11/01. Collector not available to relenquish samples on 6/12/01 for shipment.

RT 6/12/01

Matrix *
S=Soil
SD=Sediment
SO=Solid
S=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wp=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	B01-084-21	Page 1 of 1

Collector: Fahlberg	Company Contact: C W Miller	Telephone No.: 372-9274	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: Z-9 Trench Well Deepening and Characterization - Soil	Sampling Location: 200-Z-9	SAF No.: B01-084	
Ice Chest No.: ER-8 / ERC-F5-002	Field Logbook No.: EL1517-2	COA: R20ZP2DP61	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A010325	Bill of Lading/Air Bill No.: 4235 7954 - 5031 45042	

POSSIBLE SAMPLE HAZARDS/REMARKS
L2000 pCi/g per BHI-0509

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None								
Type of Container	aG	aG	aG								
No. of Container(s)	1	1	1								
Volume	120mL	250mL	500mL								
SAMPLE ANALYSIS	VOA - 8260A (TCL)	See item (1) in Special Instructions.	See item (2) in Special Instructions. R.T. 6.11.01								

Sample No.	Matrix *	Sample Date	Sample Time										
~~B12540~~	~~SOIL~~												
B121H2	Soil	6.11.01	1518	X	X								

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg / R. Fahlberg	6.11.01 1800	Stored in Ref 2.C	6.11.01 1800
Removed from Ref 2C 3728	6/12/01 0400	R Thorer	6/12/01 0400
R Thorer	6/12/01 0400	FED EX	
FED Ex	6.13.01 9:15 1500	Carlos Hernandez	6.13.01 9:15
	6.13.01		6.13.01

SPECIAL INSTRUCTIONS
See SAF Comment Concerning Pu Analysis

(1) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {Tributyl phosphate}
(2) ~~Gamma Spectroscopy (Cesium-137, Cobalt-60); Gamma Spec - Add-on (Antimony-125); Isotopic Plutonium; Americium-241; Neptunium-237; Plutonium-241; Strontium-89,90 -- Total Sr~~

RT 6.12.01

Samples stored in Ref.# 2C at the 3728 Shipping Facility on 6/11/01. Collector not available to relenquish samples on 6/12/01 for shipment.
RT 6/12/01

Matrix *
S=Soil
SD=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)

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B01-084-05 | Page 1 of 1

Collector: Fahlberg	Company Contact: C W Miller	Telephone No.: 372-9274	Project Coordinator: TRENT. SJ
Price Code: 8N	Data Turnaround: 45 Days	Air Quality: ☐	
Project Designation: Z-9 Trench Well Deepening and Characterization - Soil	Sampling Location: 200- Z- 9		SAF No.: B01-084
Ice Chest No.: ER-8 / ERC FS002	Field Logbook No.: EL 1517-1	COA: R20ZP2DP61	Method of Shipment: Fed EX
Shipped To: TMA/RECRA	Offsite Property No.: A010325		Bill of Lading/Air Bill No.: 42357954 5031 & 5042

POSSIBLE SAMPLE HAZARDS/REMARKS: <2000pCi/g Per BHI-0501

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None						
Type of Container	aG	aG	aG	aG	aG						
No. of Container(s)	1	1	1	1	1						
Volume	250mL	250mL	250mL	500mL	1000mL						
SAMPLE ANALYSIS	Oil & Grease - 413.1	See item (1) in Special Instructions	VOA - 8260A (TCL)	See item (2) in Special Instructions	See item (3) in Special Instructions. RP 6.11.01						

Sample No.	Matrix *	Sample Date	Sample Time											
~~B120X0~~	~~SOIL~~													
~~B120Y0~~	~~SOIL~~													
B120Y1 Prec'd @0915	SOIL	6.11.01	0735	X	X	X	X							
B120Y2 Prec'd @1500	SOIL	6.11.01	0850	X	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By	Date/Time
Relinquished By: R. Fahlberg	R. Fahlberg	6.11.01 1800	Received By: STORED IN Ref 2.C	6.11.01 1800
Relinquished By: Removed from Ref 2C 3728		6/12/01 0400	Received By: R Thoren	6/12/01 0400
Relinquished By: R Thoren		6/12/01 0400	Received By: FEDEX	
Relinquished By: FED Ex		6-13-01 9:15	Received By: Carlos Hernandez	6-13-01 9:15
Relinquished By: FED Ex		6-13-01 1500	Received By: T Hoppe	6-13-01 1500
Relinquished By			Received By	

SPECIAL INSTRUCTIONS

See SAF Comment Concerning Pu Analysis

(1) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) (Tributyl phosphate)
(2) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Lead); Mercury - 7470 - (CV)
~~(3) Gamma Spectroscopy (Cesium-137, Cobalt-60); Gamma Spec. Add-on (Antimony-125); Isotopic Plutonium; Americium-241; Neptunium-237; Plutonium-241; Strontium-89,90 -- Total Sr~~

RT 6-12-01

Samples stored in Ref.#2C at the 3728 Shipping Facility on 6/11/01
Collector not available to relenquish samples on 6/12/01 for shipment.

RT 6/12/01

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)

1.0 GENERAL

Bechtel Hanford Inc. (BHI) Sample Delivery Group H1381 was composed of seven solid (soil) samples designated under SAF No. B01-084 with a Project Designation of: Z-9 Trench Well Deepening and Characterization – Soil.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist.

2.0 ANALYSIS NOTES

2.1 Total Strontium Analyses

No problems were encountered during the course of the analyses.

2.2 Isotopic Plutonium Analyses

No problems were encountered during the course of the analyses.

2.3 Plutonium-241 Analyses

All Isotopic Plutonium results were less than 1 pCi/gram. No Pu-241 analyses were performed as per SAF No. B01-084.

2.4 Americium-241 Analyses

No problems were encountered during the course of the analyses.

2.5 Neptunium-237 Analyses

All Am-241 results were less than 1 pCi/gram. No Np-237 analyses were performed as per SAF No. B01-084.

2.6 Gamma Spectroscopy Analyses

No problems were encountered during the course of the analyses.

Case Narrative Certification Statement

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

Melissa Mannion

Melissa C. Mannion
Program Manager

7/26/01

Date

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

SDG 7011
Contact Melissa C. Mannion

SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG H1381

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
B120Y1	200-Z-9	SOLID		R106069-01	B01-084	B01-084-05	06/11/01 07:35
B120Y2	200-Z-9	SOLID		R106069-02	B01-084	B01-084-05	06/11/01 08:50
B120Y3	200-Z-9	SOLID		R106069-03	B01-084	B01-084-05	06/11/01 09:40
B120Y4	200-Z-9	SOLID		R106069-04	B01-084	B01-084-05	06/11/01 10:53
B120Y5	200-Z-9	SOLID		R106069-05	B01-084	B01-084-05	06/11/01 13:57
B120Y6	200-Z-9	SOLID		R106069-06	B01-084	B01-084-05	06/11/01 16:36
B121H2	200-Z-9	SOLID		R106069-07	B01-084	B01-084-05	06/11/01 15:18
Method Blank		SOLID		R106069-09	B01-084		
Lab Control Sample		SOLID		R106069-08	B01-084		
Duplicate (R106069-04)	200-Z-9	SOLID		R106069-10	B01-084		06/11/01 10:53

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CS
Version 3.06
Report date 07/26/01

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

SDG 7011
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG H1381

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7011	B01-084-05	B120Y1	SOLID	86.6	1080 g		06/13/01	2	R106069-01	7011-001
		B120Y2	SOLID	82.4	990.7 g		06/13/01	2	R106069-02	7011-002
		B120Y3	SOLID	85.3	1032 g		06/13/01	2	R106069-03	7011-003
		B120Y4	SOLID	92.6	1168 g		06/13/01	2	R106069-04	7011-004
		B120Y5	SOLID	95.8	1381 g		06/13/01	2	R106069-05	7011-005
		B120Y6	SOLID	96.5	1363 g		06/13/01	2	R106069-06	7011-006
		B121H2	SOLID	97.5	848.4 g		06/13/01	2	R106069-07	7011-007
		Method Blank	SOLID						R106069-09	7011-009
		Lab Control Sample	SOLID						R106069-08	7011-008
		Duplicate (R106069-04)	SOLID	92.6	1168 g		06/13/01	2	R106069-10	7011-010

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 07/26/01

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

SDG 7011
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG H1381

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	SOLID	Americium 241 in Soil	6994-021	5.0	7			1	1	1/1		
PU	SOLID	Plutonium, Isotopic in Solids	6994-021	5.0	7			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Soil	6994-021	10.0	7			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6994-021	15.0	7			1	1	1/1		

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.
Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 07/26/01

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

SDG 7011
Contact Melissa C. Mannion

WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG H1381

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
B120Y1			R106069-01	7011-001	AM		07/13/01	07/26/01	MCM	Americium 241 in Soil
200-Z-9		SOLID	06/11/01	7011-001	GAM		06/21/01	07/26/01	MCM	Gamma Scan
B01-084-05	B01-084		06/13/01	7011-001	PU		06/26/01	07/26/01	MCM	Plutonium, Isotopic in Solids
				7011-001	SR		06/22/01	07/26/01	MCM	Total Strontium in Soil
B120Y2			R106069-02	7011-002	AM		07/13/01	07/26/01	MCM	Americium 241 in Soil
200-Z-9		SOLID	06/11/01	7011-002	GAM		06/21/01	07/26/01	MCM	Gamma Scan
B01-084-05	B01-084		06/13/01	7011-002	PU		07/13/01	07/26/01	MCM	Plutonium, Isotopic in Solids
				7011-002	SR		06/22/01	07/26/01	MCM	Total Strontium in Soil
B120Y3			R106069-03	7011-003	AM		07/13/01	07/26/01	MCM	Americium 241 in Soil
200-Z-9		SOLID	06/11/01	7011-003	GAM		06/23/01	07/26/01	MCM	Gamma Scan
B01-084-05	B01-084		06/13/01	7011-003	PU		07/13/01	07/26/01	MCM	Plutonium, Isotopic in Solids
				7011-003	SR		06/22/01	07/26/01	MCM	Total Strontium in Soil
B120Y4			R106069-04	7011-004	AM		07/13/01	07/26/01	MCM	Americium 241 in Soil
200-Z-9		SOLID	06/11/01	7011-004	GAM		06/23/01	07/26/01	MCM	Gamma Scan
B01-084-05	B01-084		06/13/01	7011-004	PU		07/13/01	07/26/01	MCM	Plutonium, Isotopic in Solids
				7011-004	SR		06/22/01	07/26/01	MCM	Total Strontium in Soil
B120Y5			R106069-05	7011-005	AM		07/13/01	07/26/01	MCM	Americium 241 in Soil
200-Z-9		SOLID	06/11/01	7011-005	GAM		06/23/01	07/26/01	MCM	Gamma Scan
B01-084-05	B01-084		06/13/01	7011-005	PU		07/13/01	07/26/01	MCM	Plutonium, Isotopic in Solids
				7011-005	SR		06/22/01	07/26/01	MCM	Total Strontium in Soil
B120Y6			R106069-06	7011-006	AM		07/13/01	07/26/01	MCM	Americium 241 in Soil
200-Z-9		SOLID	06/11/01	7011-006	GAM		06/23/01	07/26/01	MCM	Gamma Scan
B01-084-05	B01-084		06/13/01	7011-006	PU		07/13/01	07/26/01	MCM	Plutonium, Isotopic in Solids
				7011-006	SR		06/22/01	07/26/01	MCM	Total Strontium in Soil
B121H2			R106069-07	7011-007	AM		07/13/01	07/26/01	MCM	Americium 241 in Soil
200-Z-9		SOLID	06/11/01	7011-007	GAM		06/23/01	07/26/01	MCM	Gamma Scan
B01-084-05	B01-084		06/13/01	7011-007	PU		07/13/01	07/26/01	MCM	Plutonium, Isotopic in Solids
				7011-007	SR		06/22/01	07/26/01	MCM	Total Strontium in Soil
Method Blank			R106069-09	7011-009	AM		07/13/01	07/26/01	MCM	Americium 241 in Soil
		SOLID		7011-009	GAM		06/23/01	07/26/01	MCM	Gamma Scan
	B01-084			7011-009	PU		07/13/01	07/26/01	MCM	Plutonium, Isotopic in Solids
				7011-009	SR		06/22/01	07/26/01	MCM	Total Strontium in Soil

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CWS
Version 3.06
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

SDG 7011
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG H1381

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
Lab Control Sample			R106069-08	7011-008	AM		07/16/01	07/26/01	MCM	Americium 241 in Soil
		SOLID		7011-008	GAM		06/23/01	07/26/01	MCM	Gamma Scan
	B01-084			7011-008	PU		07/13/01	07/26/01	MCM	Plutonium, Isotopic in Solids
				7011-008	SR		06/22/01	07/26/01	MCM	Total Strontium in Soil
Duplicate (R106069-04)			R106069-10	7011-010	AM		07/13/01	07/26/01	MCM	Americium 241 in Soil
200-Z-9		SOLID	06/11/01	7011-010	GAM		06/25/01	07/26/01	MCM	Gamma Scan
	B01-084		06/13/01	7011-010	PU		07/13/01	07/26/01	MCM	Plutonium, Isotopic in Solids
				7011-010	SR		06/22/01	07/26/01	MCM	Total Strontium in Soil

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
AM	B01-084	Americium 241 in Soil	AMCMISO_IE_PLATE_AEA	7			1	1	1	10
GAM	B01-084	Gamma Scan	GAMMA_GS	7			1	1	1	10
PU	B01-084	Plutonium, Isotopic in Solids	PUISO_PLATE_AEA	7			1	1	1	10
SR	B01-084	Total Strontium in Soil	SRTOT_SEP_PRECIP_GPC	7			1	1	1	10
TOTALS				28			4	4	4	40

Lab id TMANC
Protocol Hanford
Version Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

R106069-09 Method Blank

METHOD BLANK

SDG	7011	Client/Case no	Hanford	SDG H1381	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R106069-09	Client sample id	Method Blank		
Dept sample id	7011-009	Material/Matrix		SOLID	
		SAF No	B01-084		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	0.148	0.15	0.23	1.0	U	SR
Americium 241	14596-10-2	0	0.024	0.023	1.0	U	AM
Plutonium 238	13981-16-3	-0.019	0.030	0.070	1.0	U	PU
Plutonium 239/240	PU-239/240	0	0.023	0.046	1.0	U	PU
Antimony 125	14234-35-6	U		0.078		U	GAM
Potassium 40	13966-00-2	U		1.1		U	GAM
Cobalt 60	10198-40-0	U		0.063	0.050	U	GAM
Cesium 137	10045-97-3	U		0.036	0.10	U	GAM
Radium 226	13982-63-3	U		0.075	0.10	U	GAM
Radium 228	15262-20-1	U		0.15	0.20	U	GAM
Europium 152	14683-23-9	U		0.088	0.10	U	GAM
Europium 154	15585-10-1	U		0.12	0.10	U	GAM
Europium 155	14391-16-3	U		0.070	0.10	U	GAM
Thorium 228	14274-82-9	U		0.048		U	GAM
Thorium 232	TH-232	U		0.15		U	GAM
Uranium 235	15117-96-1	U		0.12		U	GAM
Uranium 238	U-238	U		4.1		U	GAM
Americium 241	14596-10-2	U		0.036		U	GAM

Z-9 Trench Well Deepening & Chara.

QC-BLANK #38654

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	07/26/01

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

R106069-08

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7011
Contact Melissa C. Mannion

Client/Case no Hanford SDG H1381
Case no No. 630

Lab sample id R106069-08
Dept sample id 7011-008

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No B01-084

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Total Strontium	23.5	0.85	0.23	1.0		SR	22.0	0.88	107	82-118	80-120
Americium 241	19.5	2.5	0.75	1.0		AM	19.1	0.76	102	78-122	80-120
Plutonium 238	24.5	0.78	0.060	1.0		PU	24.8	0.99	99	89-111	80-120
Plutonium 239/240	26.1	0.82	0.037	1.0		PU	26.4	1.1	99	89-111	80-120
Cobalt 60	0.479	0.10	0.080	0.050		GAM	0.596	0.024	80	68-132	80-120
Cesium 137	0.666	0.095	0.072	0.10		GAM	0.611	0.024	109	66-134	80-120

Z-9 Trench Well Deepening & Chara.

QC-LCS #38953

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 07/26/01

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

R106069-10 B120Y4

DUPLICATE

SDG	7011			Client/Case no	Hanford SDG H1381
Contact	Melissa C. Mannion			Case no	No. 630
DUPLICATE		ORIGINAL			
Lab sample id	R106069-10	Lab sample id	R106069-04	Client sample id	B120Y4
Dept sample id	7011-010	Dept sample id	7011-004	Location/Matrix	200-Z-9 SOLID
		Received	06/13/01	Collected/Weight	06/11/01 10:53 1168 g
% solids	92.6	% solids	92.6	Custody/SAF No	B01-084-05 B01-084

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ PROT TOT LIMIT
Total Strontium	-0.019	0.12	0.21	1.0	U	SR	0.107	0.18	0.33	U	-	
Americium 241	-0.005	0.029	0.047	1.0	U	AM	0.033	0.053	0.081	U	-	
Plutonium 238	-0.018	0.029	0.062	1.0	U	PU	0	0.055	0.21	U	-	
Plutonium 239/240	0	0.022	0.052	1.0	U	PU	0	0.055	0.21	U	-	
Antimony 125	U		0.10		U	GAM	U		0.071	U	-	
Potassium 40	5.62	0.88	0.59			GAM	6.05	0.58	0.39		7	42
Cobalt 60	U		0.055	0.050	U	GAM	U		0.032	U	-	
Cesium 137	U		0.046	0.10	U	GAM	U		0.027	U	-	
Radium 226	1.61	0.11	0.077	0.10		GAM	1.69	0.089	0.063		5	34
Radium 228	0.481	0.21	0.22	0.20		GAM	0.371	0.11	0.12		26	89
Europium 152	U		0.11	0.10	U	GAM	U		0.078	U	-	
Europium 154	U		0.17	0.10	U	GAM	U		0.093	U	-	
Europium 155	U		0.083	0.10	U	GAM	U		0.086	U	-	
Thorium 228	0.361	0.053	0.059			GAM	0.356	0.035	0.040		1	41
Thorium 232	0.481	0.21	0.22			GAM	0.371	0.11	0.12		26	89
Uranium 235	U		0.19		U	GAM	U		0.16	U	-	
Uranium 238	U		7.0		U	GAM	U		4.2	U	-	
Americium 241	U		0.064		U	GAM	U		0.13	U	-	

Z-9 Trench Well Deepening & Chara.

QC-DUP#4 38955

Lab id TMANC
Protocol Hanford
Version Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

R106069-01 **B120Y1**

DATA SHEET

SDG	7011	Client/Case no	Hanford	SDG H1381	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R106069-01	Client sample id	B120Y1		
Dept sample id	7011-001	Location/Matrix	200-Z-9	SOLID	
Received	06/13/01	Collected/Weight	06/11/01 07:35	1080 g	
% solids	86.6	Custody/SAF No	B01-084-05	B01-084	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	-0.068	0.14	0.30	1.0	U	SR
Americium 241	14596-10-2	-0.017	0.041	0.075	1.0	U	AM
Plutonium 238	13981-16-3	0.064	0.13	0.31	1.0	U	PU
Plutonium 239/240	PU-239/240	0.032	0.064	0.25	1.0	U	PU
Antimony 125	14234-35-6	U		0.068		U	GAM
Potassium 40	13966-00-2	16.7	0.67	0.44			GAM
Cobalt 60	10198-40-0	U		0.030	0.050	U	GAM
Cesium 137	10045-97-3	U		0.030	0.10	U	GAM
Radium 226	13982-63-3	0.825	0.072	0.069	0.10		GAM
Radium 228	15262-20-1	1.24	0.17	0.17	0.20		GAM
Europium 152	14683-23-9	U		0.080	0.10	U	GAM
Europium 154	15585-10-1	U		0.11	0.10	U	GAM
Europium 155	14391-16-3	U		0.13	0.10	U	GAM
Thorium 228	14274-82-9	1.23	0.040	0.039			GAM
Thorium 232	TH-232	1.24	0.17	0.17			GAM
Uranium 235	15117-96-1	U		0.11		U	GAM
Uranium 238	U-238	U		3.9		U	GAM
Americium 241	14596-10-2	U		0.11		U	GAM

Z-9 Trench Well Deepening & Chara.

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

R106069-02 B120Y2

DATA SHEET

SDG	7011	Client/Case no	Hanford	SDG H1381	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R106069-02	Client sample id	B120Y2		
Dept sample id	7011-002	Location/Matrix	200-Z-9	SOLID	
Received	06/13/01	Collected/Weight	06/11/01 08:50	990.7 g	
% solids	82.4	Custody/SAF No	B01-084-05	B01-084	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	-0.063	0.15	0.32	1.0	U	SR
Americium 241	14596-10-2	0.009	0.037	0.053	1.0	U	AM
Plutonium 238	13981-16-3	0	0.059	0.23	1.0	U	PU
Plutonium 239/240	PU-239/240	0	0.059	0.23	1.0	U	PU
Antimony 125	14234-35-6	U		0.068		U	GAM
Potassium 40	13966-00-2	16.8	0.66	0.34			GAM
Cobalt 60	10198-40-0	U		0.035	0.050	U	GAM
Cesium 137	10045-97-3	U		0.033	0.10	U	GAM
Radium 226	13982-63-3	1.04	0.074	0.065	0.10		GAM
Radium 228	15262-20-1	1.66	0.15	0.13	0.20		GAM
Europium 152	14683-23-9	U		0.073	0.10	U	GAM
Europium 154	15585-10-1	U		0.12	0.10	U	GAM
Europium 155	14391-16-3	U		0.11	0.10	U	GAM
Thorium 228	14274-82-9	1.43	0.040	0.034			GAM
Thorium 232	TH-232	1.66	0.15	0.13			GAM
Uranium 235	15117-96-1	U		0.15		U	GAM
Uranium 238	U-238	U		4.5		U	GAM
Americium 241	14596-10-2	U		0.042		U	GAM

Z-9 Trench Well Deepening & Chara.

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	07/26/01

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

R106069-03 B120Y3

DATA SHEET

SDG	7011	Client/Case no	Hanford	SDG H1381	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R106069-03	Client sample id	B120Y3		
Dept sample id	7011-003	Location/Matrix	200-Z-9	SOLID	
Received	06/13/01	Collected/Weight	06/11/01 09:40	1032 g	
% solids	85.3	Custody/SAF No	B01-084-05	B01-084	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	-0.052	0.13	0.29	1.0	U	SR
Americium 241	14596-10-2	0.050	0.047	0.066	1.0	U	AM
Plutonium 238	13981-16-3	0	0.065	0.25	1.0	U	PU
Plutonium 239/240	PU-239/240	0.032	0.065	0.25	1.0	U	PU
Antimony 125	14234-35-6	U		0.17		U	GAM
Potassium 40	13966-00-2	9.51	1.5	0.98			GAM
Cobalt 60	10198-40-0	U		0.090	0.050	U	GAM
Cesium 137	10045-97-3	U		0.081	0.10	U	GAM
Radium 226	13982-63-3	0.940	0.19	0.17	0.10		GAM
Radium 228	15262-20-1	1.18	0.34	0.37	0.20		GAM
Europium 152	14683-23-9	U		0.22	0.10	U	GAM
Europium 154	15585-10-1	U		0.24	0.10	U	GAM
Europium 155	14391-16-3	U		0.20	0.10	U	GAM
Thorium 228	14274-82-9	1.09	0.10	0.10			GAM
Thorium 232	TH-232	1.18	0.34	0.37			GAM
Uranium 235	15117-96-1	U		0.30		U	GAM
Uranium 238	U-238	U		11		U	GAM
Americium 241	14596-10-2	U		0.29		U	GAM

Z-9 Trench Well Deepening & Chara.

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

R106069-04 B120Y4

DATA SHEET

SDG	7011	Client/Case no	Hanford	SDG H1381	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R106069-04	Client sample id	B120Y4		
Dept sample id	7011-004	Location/Matrix	200-Z-9	SOLID	
Received	06/13/01	Collected/Weight	06/11/01 10:53	1168 g	
% solids	92.6	Custody/SAF No	B01-084-05	B01-084	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	0.107	0.18	0.33	1.0	U	SR
Americium 241	14596-10-2	0.033	0.053	0.081	1.0	U	AM
Plutonium 238	13981-16-3	0	0.055	0.21	1.0	U	PU
Plutonium 239/240	PU-239/240	0	0.055	0.21	1.0	U	PU
Antimony 125	14234-35-6	U		0.071		U	GAM
Potassium 40	13966-00-2	6.05	0.58	0.39			GAM
Cobalt 60	10198-40-0	U		0.032	0.050	U	GAM
Cesium 137	10045-97-3	U		0.027	0.10	U	GAM
Radium 226	13982-63-3	1.69	0.089	0.063	0.10		GAM
Radium 228	15262-20-1	0.371	0.11	0.12	0.20		GAM
Europium 152	14683-23-9	U		0.078	0.10	U	GAM
Europium 154	15585-10-1	U		0.093	0.10	U	GAM
Europium 155	14391-16-3	U		0.086	0.10	U	GAM
Thorium 228	14274-82-9	0.356	0.035	0.040			GAM
Thorium 232	TH-232	0.371	0.11	0.12			GAM
Uranium 235	15117-96-1	U		0.16		U	GAM
Uranium 238	U-238	U		4.2		U	GAM
Americium 241	14596-10-2	U		0.13		U	GAM

Z-9 Trench Well Deepening & Chara.

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

R106069-05 B120Y5

DATA SHEET

SDG	7011	Client/Case no	Hanford	SDG H1381	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R106069-05	Client sample id	B120Y5		
Dept sample id	7011-005	Location/Matrix	200-Z-9	SOLID	
Received	06/13/01	Collected/Weight	06/11/01 13:57	1381 g	
% solids	95.8	Custody/SAF No	B01-084-05	B01-084	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	0.133	0.15	0.28	1.0	U	SR
Americium 241	14596-10-2	0.011	0.045	0.062	1.0	U	AM
Plutonium 238	13981-16-3	0.051	0.051	0.20	1.0	U	PU
Plutonium 239/240	PU-239/240	0	0.051	0.20	1.0	U	PU
Antimony 125	14234-35-6	U		0.072		U	GAM
Potassium 40	13966-00-2	10.0	0.93	0.36			GAM
Cobalt 60	10198-40-0	U		0.038	0.050	U	GAM
Cesium 137	10045-97-3	U		0.033	0.10	U	GAM
Radium 226	13982-63-3	0.838	0.079	0.066	0.10		GAM
Radium 228	15262-20-1	0.494	0.13	0.14	0.20		GAM
Europium 152	14683-23-9	U		0.080	0.10	U	GAM
Europium 154	15585-10-1	U		0.12	0.10	U	GAM
Europium 155	14391-16-3	U		0.071	0.10	U	GAM
Thorium 228	14274-82-9	0.477	0.038	0.039			GAM
Thorium 232	TH-232	0.494	0.13	0.14			GAM
Uranium 235	15117-96-1	U		0.13		U	GAM
Uranium 238	U-238	U		5.0		U	GAM
Americium 241	14596-10-2	U		0.044		U	GAM

Z-9 Trench Well Deepening & Chara.

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	07/26/01

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

R106069-06 B120Y6

DATA SHEET

SDG	7011	Client/Case no	Hanford	SDG_H1381	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R106069-06	Client sample id	B120Y6		
Dept sample id	7011-006	Location/Matrix	200-Z-9	SOLID	
Received	06/13/01	Collected/Weight	06/11/01 16:36	1363 g	
% solids	96.5	Custody/SAF No	B01-084-05	B01-084	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	0.017	0.13	0.27	1.0	U	SR
Americium 241	14596-10-2	-0.008	0.017	0.032	1.0	U	AM
Plutonium 238	13981-16-3	0	0.048	0.18	1.0	U	PU
Plutonium 239/240	PU-239/240	0.048	0.048	0.18	1.0	U	PU
Antimony 125	14234-35-6	U		0.073		U	GAM
Potassium 40	13966-00-2	9.05	0.90	0.52			GAM
Cobalt 60	10198-40-0	U		0.045	0.050	U	GAM
Cesium 137	10045-97-3	U		0.035	0.10	U	GAM
Radium 226	13982-63-3	0.397	0.084	0.081	0.10		GAM
Radium 228	15262-20-1	0.677	0.19	0.17	0.20		GAM
Europium 152	14683-23-9	U		0.082	0.10	U	GAM
Europium 154	15585-10-1	U		0.15	0.10	U	GAM
Europium 155	14391-16-3	U		0.064	0.10	U	GAM
Thorium 228	14274-82-9	0.470	0.042	0.040			GAM
Thorium 232	TH-232	0.677	0.19	0.17			GAM
Uranium 235	15117-96-1	U		0.11		U	GAM
Uranium 238	U-238	U		5.9		U	GAM
Americium 241	14596-10-2	U		0.048		U	GAM

Z-9 Trench Well Deepening & Chara.

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	07/26/01

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

R106069-07 B121H2

DATA SHEET

SDG	7011	Client/Case no	Hanford	SDG H1381	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R106069-07	Client sample id	B121H2		
Dept sample id	7011-007	Location/Matrix	200-Z-9	SOLID	
Received	06/13/01	Collected/Weight	06/11/01 15:18	848.4 g	
% solids	97.5	Custody/SAF No	B01-084-05	B01-084	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	-0.017	0.13	0.28	1.0	U	SR
Americium 241	14596-10-2	-0.003	0.019	0.024	1.0	U	AM
Plutonium 238	13981-16-3	-0.053	0.053	0.25	1.0	U	PU
Plutonium 239/240	PU-239/240	0.027	0.11	0.20	1.0	U	PU
Antimony 125	14234-35-6	U		0.077		U	GAM
Potassium 40	13966-00-2	13.5	0.82	0.36			GAM
Cobalt 60	10198-40-0	U		0.042	0.050	U	GAM
Cesium 137	10045-97-3	U		0.034	0.10	U	GAM
Radium 226	13982-63-3	0.539	0.073	0.074	0.10		GAM
Radium 228	15262-20-1	0.639	0.18	0.19	0.20		GAM
Europium 152	14683-23-9	U		0.081	0.10	U	GAM
Europium 154	15585-10-1	U		0.13	0.10	U	GAM
Europium 155	14391-16-3	U		0.13	0.10	U	GAM
Thorium 228	14274-82-9	0.515	0.040	0.042			GAM
Thorium 232	TH-232	0.639	0.18	0.19			GAM
Uranium 235	15117-96-1	U		0.16		U	GAM
Uranium 238	U-238	U		4.7		U	GAM
Americium 241	14596-10-2	U		0.32		U	GAM

Z-9 Trench Well Deepening & Chara.

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	07/26/01

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

Test AM	Matrix SOLID
SDG 7011	
Contact Melissa C. Mannion	

METHOD SUMMARY

AMERICIUM 241 IN SOIL

ALPHA SPECTROSCOPY

Client Hanford	
Contract No. 630	
Contract SDG H1381	

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Americium 241	
Preparation batch 6994-021						
B120Y1	R106069-01			7011-001	U	
B120Y2	R106069-02			7011-002	U	
B120Y3	R106069-03			7011-003	U	
B120Y4	R106069-04			7011-004	U	
B120Y5	R106069-05			7011-005	U	
B120Y6	R106069-06			7011-006	U	
B121H2	R106069-07			7011-007	U	
BLK (QC ID=38954)	R106069-09			7011-009	U	
LCS (QC ID=38953)	R106069-08			7011-008	ok	
Duplicate (R106069-04)	R106069-10			7011-010	-	U
Nominal values and limits from method Z-9 Trench Well Deepening & Chara.				RDLs (pCi/g)	1.0	

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6994-021	2σ prep error 5.0 %				Reference Lab Notebook 6994 pg. 021											
B120Y1	R106069-01			0.075	0.500			73		946			32	06/28/01	07/13	SS-033
B120Y2	R106069-02			0.053	0.500			78		946			32	06/28/01	07/13	SS-034
B120Y3	R106069-03			0.066	0.500			74		946			32	06/28/01	07/13	SS-041
B120Y4	R106069-04			0.081	0.500			37		946			32	06/28/01	07/13	SS-042
B120Y5	R106069-05			0.062	0.500			44		943			32	06/28/01	07/13	SS-055
B120Y6	R106069-06			0.032	0.500			59		943			32	06/28/01	07/13	SS-056
B121H2	R106069-07			0.024	0.500			82		943			32	06/28/01	07/13	SS-057
BLK (QC ID=38954)	R106069-09			0.023	0.500			84		944				06/28/01	07/13	SS-059
LCS (QC ID=38953)	R106069-08			0.75	0.500			76		913				06/28/01	07/16	SS-052
Duplicate (R106069-04) (QC ID=38955)	R106069-10			0.047	0.500			50		944			32	06/28/01	07/13	SS-060
Nominal values and limits from method				1.0	0.500			20-105		100	100		180			

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	07/26/01

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

Test AM	Matrix SOLID
SDG 7011	
Contact Melissa C. Mannion	

METHOD SUMMARY, cont.

AMERICIUM 241 IN SOIL

ALPHA SPECTROSCOPY

Client Hanford	
Contract No. 630	
Contract SDG H1381	

PROCEDURES	REFERENCE	AMCMISO_IE_PLATE_AEA
	CP-060	Soil Preparation, rev 3
	CP-070	Soil Dissolution, < 1.0g Aliquot, rev 4
	CP-940	Plutonium Separation and Purification, rev 3
	CP-960	Americium-Curium Purification, Large Aliquot, rev 4
	CP-008	Heavy Element Electroplating, rev 6

AVERAGES ± 2 SD	MDA	0.12	±	0.44
FOR 10 SAMPLES	YIELD	66	±	34

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	07/26/01

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

Test PU Matrix SOLID
SDG 7011
Contact Melissa C. Mannion

METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H1381

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Plutonium 238		Plutonium 239/240	
Preparation batch 6994-021								
B120Y1	R106069-01			7011-001	U		U	
B120Y2	R106069-02			7011-002	U		U	
B120Y3	R106069-03			7011-003	U		U	
B120Y4	R106069-04			7011-004	U		U	
B120Y5	R106069-05			7011-005	U		U	
B120Y6	R106069-06			7011-006	U		U	
B121H2	R106069-07			7011-007	U		U	
BLK (QC ID=38954)	R106069-09			7011-009	U		U	
LCS (QC ID=38953)	R106069-08			7011-008	ok		ok	
Duplicate (R106069-04)	R106069-10			7011-010	-	U	-	U
Nominal values and limits from method Z-9 Trench Well Deepening & Chara.				RDLs (pCi/g)	1.0		1.0	

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6994-021	2σ prep error 5.0 %					Reference Lab Notebook 6994 pg. 021										
B120Y1	R106069-01			0.31	0.500			67		106			15	06/26/01	06/26	SS-033
B120Y2	R106069-02			0.23	0.500			79		103			32	06/26/01	07/13	SS-063
B120Y3	R106069-03			0.25	0.500			71		103			32	06/26/01	07/13	SS-064
B120Y4	R106069-04			0.21	0.500			82		103			32	06/26/01	07/13	SS-065
B120Y5	R106069-05			0.20	0.500			92		107			32	06/26/01	07/13	SS-027
B120Y6	R106069-06			0.18	0.500			94		107			32	06/26/01	07/13	SS-028
B121H2	R106069-07			0.25	0.500			85		107			32	06/26/01	07/13	SS-029
BLK (QC ID=38954)	R106069-09			0.070	0.500			65		946				06/26/01	07/13	SS-031
LCS (QC ID=38953)	R106069-08			0.060	0.500			92		946				06/26/01	07/13	SS-029
Duplicate (R106069-04) (QC ID=38955)	R106069-10			0.062	0.500			66		946			32	06/26/01	07/13	SS-032
Nominal values and limits from method				1.0	0.500			20-105		100	100		180			

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 07/26/01

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

Test PU	Matrix SOLID
SDG 7011	
Contact Melissa C. Mannion	

METHOD SUMMARY, cont.

PLUTONIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford	
Contract No. 630	
Contract SDG H1381	

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	CP-060	Soil Preparation, rev 3
	CP-940	Plutonium Separation and Purification, rev 3
	CP-008	Heavy Element Electroplating, rev 6

AVERAGES ± 2 SD	MDA	0.18	±	0.18
FOR 10 SAMPLES	YIELD	79	±	23

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	07/26/01

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

Test SR Matrix SOLID
SDG 7011
Contact Melissa C. Mannion

METHOD SUMMARY

TOTAL STRONTIUM IN SOIL
BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H1381

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Total Strontium	
Preparation batch 6994-021						
B120Y1	R106069-01			7011-001	U	
B120Y2	R106069-02			7011-002	U	
B120Y3	R106069-03			7011-003	U	
B120Y4	R106069-04			7011-004	U	
B120Y5	R106069-05			7011-005	U	
B120Y6	R106069-06			7011-006	U	
B121H2	R106069-07			7011-007	U	
BLK (QC ID=38954)	R106069-09			7011-009	U	
LCS (QC ID=38953)	R106069-08			7011-008	ok	
Duplicate (R106069-04)	R106069-10			7011-010	-	U
Nominal values and limits from method Z-9 Trench Well Deepening & Chara.				RDLs (pCi/g)	1.0	

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6994-021 2σ prep error 10.0 % Reference Lab Notebook 6994 pg. 021																
B120Y1	R106069-01			0.30	1.00			94		100			11	06/22/01	06/22	GRB-205
B120Y2	R106069-02			0.32	1.00			94		100			11	06/22/01	06/22	GRB-206
B120Y3	R106069-03			0.29	1.00			97		100			11	06/22/01	06/22	GRB-207
B120Y4	R106069-04			0.33	1.00			94		100			11	06/22/01	06/22	GRB-208
B120Y5	R106069-05			0.28	1.00			95		100			11	06/22/01	06/22	GRB-217
B120Y6	R106069-06			0.27	1.00			98		100			11	06/22/01	06/22	GRB-218
B121H2	R106069-07			0.28	1.00			97		100			11	06/22/01	06/22	GRB-219
BLK (QC ID=38954)	R106069-09			0.23	1.00			86		200				06/22/01	06/22	GRB-229
LCS (QC ID=38953)	R106069-08			0.23	1.00			91		100				06/22/01	06/22	GRB-230
Duplicate (R106069-04) (QC ID=38955)	R106069-10			0.21	1.00			98		200			11	06/22/01	06/22	GRB-231
Nominal values and limits from method				1.0	1.00			30-105		100			180			

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 07/26/01

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

Test SR	Matrix SOLID
SDG 7011	
Contact Melissa C. Mannion	

METHOD SUMMARY, cont.

TOTAL STRONTIUM IN SOIL

BETA COUNTING

Client Hanford	
Contract No. 630	
Contract SDG H1381	

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	CP-502	Strontium in Solids, rev 4
	CP-519	Strontium Planchet Demounting and Preparation for 90Y Decontamination, rev 3

AVERAGES ± 2 SD	MDA	0.27	±	0.080
FOR 10 SAMPLES	YIELD	94	±	7

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	07/26/01

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

Test GAM Matrix SOLID
SDG 7011
Contact Melissa C. Mannion

METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H1381

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Cobalt 60		Cesium 137	
Preparation batch 6994-021								
B120Y1	R106069-01			7011-001	U		U	
B120Y2	R106069-02			7011-002	U		U	
B120Y3	R106069-03			7011-003	U		U	
B120Y4	R106069-04			7011-004	U		U	
B120Y5	R106069-05			7011-005	U		U	
B120Y6	R106069-06			7011-006	U		U	
B121H2	R106069-07			7011-007	U		U	
BLK (QC ID=38954)	R106069-09			7011-009	U		U	
LCS (QC ID=38953)	R106069-08			7011-008	ok		ok	
Duplicate (R106069-04)	R106069-10			7011-010	-	U	-	U
Nominal values and limits from method Z-9 Trench Well Deepening & Chara.				RDLs (pCi/g)	0.050		0.10	

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6994-021 2σ prep error 15.0 % Reference Lab Notebook 6994 pg. 021																
B120Y1	R106069-01			0.081	591					498			10	06/15/01	06/21	02,03,00
B120Y2	R106069-02			0.10	543					497			10	06/15/01	06/21	02,01,00
B120Y3	R106069-03			0.23	396					102			12	06/15/01	06/23	02,03,00
B120Y4	R106069-04			0.089	597					124			12	06/15/01	06/23	02,04,00
B120Y5	R106069-05			0.077	685					101			12	06/15/01	06/23	MB,07,00
B120Y6	R106069-06			0.11	769					118			12	06/15/01	06/23	02,01,00
B121H2	R106069-07			0.095	679					118			12	06/15/01	06/23	MB,05,00
BLK (QC ID=38954)	R106069-09			0.078	396					105				06/15/01	06/23	MB,07,00
LCS (QC ID=38953)	R106069-08			0.080	396					105				06/15/01	06/23	01,03,00
Duplicate (R106069-04) (QC ID=38955)	R106069-10			0.15	597					142			14	06/15/01	06/25	02,01,00
Nominal values and limits from method				0.050	396					100			180			

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 07/26/01

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1381

Test GAM Matrix SOLID
SDG 7011
Contact Melissa C. Mannion

METHOD SUMMARY, cont.

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H1381

PROCEDURES	REFERENCE	GAMMA_GS
	CP-060	Soil Preparation, rev 3
	CP-100	Ge(Li) Preparation for Commercial Samples, rev 3

AVERAGES ± 2 SD	MDA	0.11 ± 0.096
FOR 10 SAMPLES	YIELD	±

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 07/26/01

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B01-084-05	Page 1 of 1

Collector: Fahlberg	Company Contact: C W Miller	Telephone No.: 372-9274	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: Z-9 Trench Well Deepening and Characterization - Soil	Sampling Location: 200-Z-9 H1381 (7011)	SAF No.: B01-084	
Ice Chest No.: EZC 99.038 (old)	Field Logbook No.: EL 1517-1	COA: R20ZP2DP61	Method of Shipment: Fed EX
Shipped To: TMA/RECRA EBERline	Offsite Property No.: A010329	Bill of Lading/Air Bill No.: 4235 7954-5653	

POSSIBLE SAMPLE HAZARDS/REMARKS
2200 pCi/g per BHI-01509

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None						
Type of Container	aG	aG	aG	aG	aG						
No. of Container(s)	1	1	1	1	1						
Volume	250mL	250mL	250mL	500mL	1000mL						
SAMPLE ANALYSIS	Oil & Grease - 413.1	See item (1) in Special Instructions. RE	VOA - 8260A (TCL) 6.11.01	See item (2) in Special Instructions.	See item (3) in Special Instructions.						

Sample No.	Matrix *	Sample Date	Sample Time										
~~B120X0~~	~~SOIL~~												
~~B120Y0~~	~~SOIL~~												
B120Y1	SOIL	6.11.01	0735					X					
B120Y2	SOIL	6.11.01	0850					X					

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: R. Fahlberg	Date/Time: 6.11.01 1800	Received By: STORAGE R. Fahlberg	Date/Time: 6.11.01 1800
Relinquished By: Removed from ZC 3728	Date/Time: 6/12/01 0400	Received By: R. Thorson	Date/Time: 6/12/01 0400
Relinquished By: R. Thorson	Date/Time: 6/12/01 0400	Received By: FED EX	Date/Time: 6-12-01
Relinquished By: FEDERAL EXPRESS	Date/Time: 6/13/01 10:30	Received By: D. Segura	Date/Time: 6-13-01 10:30
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
See SAF Comment Concerning Pu Analysis

(1) ~~Semi VOA - 8270A (TCL); Semi VOA - 8270A (Add On) (Tributyl phosphate)~~
(2) ~~ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Lead); Mercury - 7470 (CV)~~
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60}; Gamma Spec - Add-on {Antimony-125}; Isotopic Plutonium; Americium-241; Neptunium-237; Plutonium-241; Strontium-89,90 -- Total Sr

RT 6.12.01

Samples stored in Ref.# ZC at the 3728 Shipping Facility on 6/11/01. Collector not available to relenquish samples on 6/12/01 for shipment.

RT 6/12/01

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	B01-084-15	Page 1 of 1

Collector: Fahlberg	Company Contact: C W Miller	Telephone No.: 372-9274	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: Z-9 Trench Well Deepening and Characterization - Soil	Sampling Location: 200-Z-9 H1381 (7011)	SAF No.: B01-084	
Ice Chest No.: ERC99-038 (of 1)	Field Logbook No.: EL 1517-1	COA: R20ZP2DP61	Method of Shipment: Fed EX
Shipped To (TMA/RECRA): EBERline	Offsite Property No.: A010329	Bill of Lading/Air Bill No.: 4235795 4-5053	

POSSIBLE SAMPLE HAZARDS/REMARKS
<2500 pCi/g per BHI 01509

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None					
Type of Container	aG	aG	aG	aG	aG					
No. of Container(s)	1	1	1	1	1					
Volume	250mL	250mL	250mL	500mL	1000mL					
SAMPLE ANALYSIS	Oil & Grease - 413.1	See item (1) in Special Instructions.	VOA - 8260A (TCL)	See item (2) in Special Instructions.	See item (3) in Special Instructions.					

Sample No.	Matrix *	Sample Date	Sample Time										
B120Y3 ✓	SOIL ✓	6·11·01 ✓	0940 ✓					X ✓					
B120Y4 ✓	SOIL ✓	6·11·01 ✓	1053 ✓					X ✓					
B120Y5 ✓	SOIL ✓	6·11·01 ✓	1357 ✓					X ✓					
B120Y6 ✓	SOIL ✓	6·11·01 ✓	1636 ✓					X ✓					

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By: R. Fahlberg / R. Fahlberg	6·11·01 1800	Received By: Stored in Ref 2.C	6·11·01 1800
Relinquished By: Removed from Ref 2C 3728	6/12/01 0900	Received By: R Thoren	6/12/01 0900
Relinquished By: R Thoren	6/12/01 0900	Received By: FEDEX	6/12/01
Relinquished By: FED. EXPRESS	6-13/01 1030	Received By: E. SEGURO	6/13/01 10:30 AM
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
See SAF Comment Concerning Pu Analysis

~~(1) Semi-VOA - 8270A (TCL); Semi-VOA - 8270A (Add-On) (Tributyl phosphate)~~
~~(2) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Li6Li); Mercury - 7470 (CV).~~ RT 6/12/01
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60}; Gamma Spec - Add-on {Antimony-125}; Isotopic Plutonium; Americium-241; Neptunium-237; Plutonium-241; Strontium-89,90 -- Total Sr

Samples stored in Ref.#2 at the 3728 Shipping Facility on 6/11/01. Collector not available to relenquish samples on 6/12/01 for shipment.
RT 6/12/01

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	B01-084-21	Page 1 of 1

Collector: Fahlberg	Company Contact: C W Miller	Telephone No.: 372-9274	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: Z-9 Trench Well Deepening and Characterization - Soil	Sampling Location: 200-Z-9 H1381 (7011)	SAF No.: B01-084	
Ice Chest No.: ERC 99-038 (1of1)	Field Logbook No.: EL1517-2	COA: R20ZP2DP61	Method of Shipment: Fed EX
Shipped To: (TMA/RECRA) EBERline	Offsite Property No.: A010329	Bill of Lading/Air Bill No.: 4235 7954-5053	

POSSIBLE SAMPLE HAZARDS/REMARKS
12000pCi/g per BHI-0509

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None								
Type of Container	aG	aG	aG								
No. of Container(s)	1	1	1								
Volume	120mL	250mL	500mL								
SAMPLE ANALYSIS	VOA - 8260A (TCL) 6.11.01 R.F.	See item (1) in Special Instructions.	See item (2) in Special Instructions.								

Sample No.	Matrix *	Sample Date	Sample Time										
~~B12540~~	~~SOIL~~												
B121H2	Soil	6.11.01	1518			X							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: R. Fahlberg	Date/Time: 1800 6.11.01	Received By: STORED IN Ref 2-C	Date/Time: 1800 6.11.01
Relinquished By: Removed from Ref 22 3728	Date/Time: 0900 6-12-01	Received By: R Thoren	Date/Time: 0900 6/12/01
Relinquished By: R Thoren	Date/Time: 0900 6/12/01	Received By: FED EX	Date/Time: 6-12-01
Relinquished By: FED. EXPRESS	Date/Time: 1030 6/13/01	Received By: E. Segundo	Date/Time: 10:20 6-13-01
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
See SAF Comment Concerning Pu Analysis

RT 6-12-01

~~(1) Semi-VOA - 8270A (TCL); Semi-VOA - 8270A (Add-On) {Tributyl phosphate}~~
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60}; Gamma Spec - Add-on {Antimony-125}; Isotopic Plutonium; Americium-241; Neptunium-237; Plutonium-241; Strontium-89,90 -- Total Sr

Samples stored in Ref.# 2C at the 3728 Shipping Facility on 6/11/01. Collector not available to relenquish samples on 6/12/01 for shipment.

RT 6/12/01

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)

ThermoRetec
Richmond Laboratory

Analytical Services

SAMPLE RECEIPT CHECKLIST

SAMPLE RECEIPT

Client: BECHTEL HANFORD INC. Date/Time received 6-13-01 AT 10:30 AM

CoC No. B01-084-05, B01-084-15, AND B01-084-21.

Container I.D. No. ERC-99-038 Requested TAT (Days) 45 DAYS P.O. Received Yes [ ] No [✓]

INSPECTION

1. Custody seals on shipping container intact? Yes [✓] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [✓] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [✓] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [✓] No [ ] N/A [ ]
5. Cooler Temperature: _____ Packing material is: Wet [ ] Dry [✓]
6. Number of samples in shipping container: 7 SAMPLES
7. Number of containers per sample: (1 EACH) (Or see CoC _____)
8. Paperwork agrees with samples? Yes [✓] No [ ]
9. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [✓]
10. Samples are: In good condition [✓] Leaking [ ] Broken Container [ ] Missing [ ]
11. Describe any anomalies: _____
13. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
14. Received by E. Deguro Date: 6-13-01 Time: 10:30 AM

Customer Sample No.	cpm	mr/hr	Customer Sample No.	Cpm	mr/hr

Ion Chamber Ser. No. _____ Calibration date _____

Survey Meter Ser No. _____ Calibration date _____