Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-068 H1167

DATE RECEIVED: 12/06/00 RFW LOT # :0012L490

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B10F90						
% SOLIDS	001	S	00L%S195	11/30/00	12/08/00	12/09/00
% SOLIDS	001 REP	S	00L%S195	11/30/00	12/08/00	12/09/00
NITRATE BY IC	001	S	00LXC080	11/30/00	12/15/00	12/15/00
NITRATE BY IC	001 REP	S	00LXC080	11/30/00	12/15/00	12/15/00
NITRATE BY IC	001 MS	S	00LXC080	11/30/00	12/15/00	12/15/00
TOTAL CYANIDE	001	S	00LC124	11/30/00	12/12/00	12/12/00
TOTAL CYANIDE	001 REP	S	00LC124	11/30/00	12/12/00	12/12/00
TOTAL CYANIDE	001 MS	S	00LC124	11/30/00	12/12/00	12/12/00
PH	001	S	00LPH100	11/30/00	12/08/00	12/08/00
PH	001 REP	S	01LPH004	11/30/00	01/15/01	01/15/01
SULFIDE	001	S	00LSDA58	11/30/00	12/10/00	12/10/00
SULFIDE	001 REP	S	00LSDA58	11/30/00	12/10/00	12/10/00
SULFIDE	001 MS	S	00LSDA58	11/30/00	12/10/00	12/10/00

LAB QC:

NITRATE BY IC	MB1	S	00LXC080	N/A	12/15/00	12/15/00
NITRATE BY IC	MB1 BS	S	00LXC080	N/A	12/15/00	12/15/00
TOTAL CYANIDE	LCS L	S	00LC124	N/A	12/12/00	12/12/00
TOTAL CYANIDE	LCS L	S	00LC124	N/A	12/12/00	12/12/00
TOTAL CYANIDE	MB1	S	00LC124	N/A	12/12/00	12/12/00
SULFIDE	MB1	S	00LSDA58	N/A	12/10/00	12/10/00
SULFIDE	MB1 BS	S	00LSDA58	N/A	12/10/00	12/10/00

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JAN 2001
RECEIVED

RECRA
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Chemical and Environmental Measurement Information

Recra LabNet Philadelphia
Analytical Report

Client : TNU-HANFORD B99-093 H1167
RFW# : 0012L490

W.O. # : 10985-001-001-9999-00
Date Received: 12-06-00

INORGANIC CASE NARRATIVE

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

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

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

4. The cooler temperature was recorded on the chain-of-custody.

5. The method blanks were within method criteria.

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

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

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

9. Results for 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 data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

J. Michael Taylor
VP, Laboratory General Manager
Lionville Laboratory

01-16-01
Date

njp\i12-490

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 11 pages.

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

Recra LabNet Philadelphia

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/9014	__ 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: Nitrate **Method:** EPA 300.0 (mod.)

Other: **Method**

Recra LabNet Philadelphia
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.

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 01/15/01

CLIENT: TNUHANFORD B00-068 H1167 RECRA LOT #: 0012L490

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B10F90	% Solids	95.3	%	0.01	1.0
		Nitrate by IC	13	MG/KG	1.3	1.0
		Cyanide, Total	0.50 u	MG/KG	0.50	1.0
		pH	8.5	SOIL PH	0.01	1.0
		Sulfide	38.9 u	MG/KG	38.9	1.0

Recra LabNet - Lionville

INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/15/01

CLIENT: TNUHANFORD B00-068 H1167 RECRA LOT #: 0012L490

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	00LXC080-MB1	Nitrate by IC	1.2 u	MG/KG	1.2	1.0
BLANK1	00LC124-MB1	Cyanide, Total	0.50 u	MG/KG	0.50	1.0
BLANK10	00LSDA58-MB1	Sulfide	40.0 u	MG/KG	40.0	1.0

Recra LabNet - Lionville

INORGANICS ACCURACY REPORT 01/15/01

CLIENT: TNUHANFORD B00-068 H1167

RECRA LOT #: 0012L490

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B10F90	Nitrate by IC	39	13	26	101.2	1.0
		Cyanide, Total	4.8	0.50u	4.9	97.3	1.0
		Sulfide	331	11.7	379	84.1	1.0
BLANK10	00LXC080-MB1	Nitrate by IC	24	1.2 u	25	96.8	1.0
BLANK10	00LSDA58-MB1	Sulfide	381	40.0 u	418	91.0	1.0

Recra LabNet - Lionville

INORGANICS PRECISION REPORT 01/15/01

CLIENT: TNUHANFORD B00-068 H1167 RECRA LOT #: 0012L490

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B10F90	% Solids	95.3	94.0	1.4	1.0
		Nitrate by IC	13	11	12.8	1.0
		Cyanide, Total	0.50u	0.51u	NC	1.0
		pH	8.5	8.4	1.4	1.0
		Sulfide	38.9 u	40.0 u	NC	1.0

Recra LabNet - Lionville

INORGANICS LABORATORY CONTROL STANDARDS REPORT 01/15/01

CLIENT: TNUHANFORD B00-068 H1167 RECRA LOT #: 0012L490

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCSS1	00LC124-LCS1	Cyanide, Total LCS	2.0	2.0	MG/KG	99.1
LCSS2	00LC124-LCS2	Cyanide, Total LCS	9.7	10	MG/KG	97.4

RECRA LabNet Use Only

00121490

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client HANFORD TRU-Hanford SAF-B00-068

Est. Final Proj. Sampling Date TR 12-6-00

Project # 10985-001-001-9999-00

Project Contact/Phone #

RECRA Project Manager OJ

QC Spec Del STC TAT 21 day

Date Rec'd 12-6-00 Date Due 12-27-00

Account #

		A	B						C	D		E		C
Refrigerator #		1	S						S	S		S		
#/Type Container	Liquid													
	Solid	1AG	1AG						1AG	1AG		1AG		
Volume	Liquid													
	Solid	250	250						250	250		250		
Preservatives		—	✓						—	✓		—		
ANALYSES REQUESTED		ORGANIC							INORG					
		VOA	BNA	Pest/PCB	Herb				RCRA Metal	CN	Ie Wining	pH		
		RECRA LabNet Use Only												
		OC24H	OC25H						RCRATO	ICNTO	ICNOS ISFD	IPH		

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
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	B10F90	✓	✓	S	11/30/00	1230	1	1						1	1	1		1	

Special Instructions: SAF B00-068

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

RECRA LabNet Use Only

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

COC Tape 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. 2.5 °C

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

82148983 0147

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	12/6/00	0915

Relinquished by	Received by	Date	Time

COMPOSITE WASTE

ORIGINAL REWRITTEN

00121490

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-068-85	Page 1 of 1

Collector: Thomas	Company Contact: D Weekes	Telephone No.: 372-9524	Project Coordinator: TRENT, SJ
Price Code: 8L	Data Turnaround: 21 Days	Air Quality ☐	
Project Designation: 200 Area Groundwater Well Drilling Waste Designation for	Sampling Location: 200 West	SAF No.: B00-068	
Ice Chest No.: Shipping Drum 96 001 (1of1)	Field Logbook No.: EL 151B	COA: JRCRA03200	Method of Shipment: Fed-EX
Shipped To: TMA/RECRA	Offsite Property No.: A010038	Bill of Lading/Air Bill No.: 42357953-0945	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	B Cool 4C	A Cool 4C	D None	C None	E None					
Type of Container	aG	aG	aG	aG	aG					
No. of Container(s)	1	1	1	1	1					
Volume	250mL	250mL	250mL	250mL	250mL					
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (Add-On) (m-Cresol)	VOA - 8260A (TCL)	IC Anions - 300.0 (Nitrate); Sulfides - 9030; Total Cyanide - 9010	ICP Metals - 6010A (Supertrace); Mercury - 7471 - (CV)	pH (Soil) - 9045					

Sample No.	Matrix *	Sample Date	Sample Time								Drum	TPT
B10F90	SOIL	11/30/00	1230	X	X	X	X	X			200W-00-0182	Poly
									out of spec < 1000 dpm			

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By (Sign/Print Name)	Date/Time
[illegible]	11/30/00 1708	Stored in Ref 3B	11/30/00 1708
Removed from Ref 3B 3728	12.4.00 0800	[illegible]	12.4.00 0800
[illegible]	12.4.00 0800	[illegible]	
Fed Ex	12-5-00 10:00	[illegible] JR Corso	12-5-00 10:00
[illegible] JR Corso	12-5-00 16:00	Fed Ex	
Fed Ex	12-6-00 0915	[illegible]	12-6-00 0915

RT 12.4.00

SPECIAL INSTRUCTIONS

Samples stored in Ref.# 3B at the 3728 Shipping Facility on 11/30/00
Collector not available to relinquish samples on 12/4/00 for shipment.

RT 12.4.00

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

JAN 2001 RECEIVED

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-068 H1167

DATE RECEIVED: 12/06/00 RFW LOT # :0012L490

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B10F90						
SILVER, TOTAL	001	S	99L1813	11/30/00	12/14/00	12/19/00
SILVER, TOTAL	001 REP	S	99L1813	11/30/00	12/14/00	12/19/00
SILVER, TOTAL	001 MS	S	99L1813	11/30/00	12/14/00	12/19/00
ARSENIC, TOTAL	001	S	99L1813	11/30/00	12/14/00	12/19/00
ARSENIC, TOTAL	001 REP	S	99L1813	11/30/00	12/14/00	12/19/00
ARSENIC, TOTAL	001 MS	S	99L1813	11/30/00	12/14/00	12/19/00
BARIUM, TOTAL	001	S	99L1813	11/30/00	12/14/00	12/19/00
BARIUM, TOTAL	001 REP	S	99L1813	11/30/00	12/14/00	12/19/00
BARIUM, TOTAL	001 MS	S	99L1813	11/30/00	12/14/00	12/19/00
CADMIUM, TOTAL	001	S	99L1813	11/30/00	12/14/00	12/19/00
CADMIUM, TOTAL	001 REP	S	99L1813	11/30/00	12/14/00	12/19/00
CADMIUM, TOTAL	001 MS	S	99L1813	11/30/00	12/14/00	12/19/00
CHROMIUM, TOTAL	001	S	99L1813	11/30/00	12/14/00	12/19/00
CHROMIUM, TOTAL	001 REP	S	99L1813	11/30/00	12/14/00	12/19/00
CHROMIUM, TOTAL	001 MS	S	99L1813	11/30/00	12/14/00	12/19/00
MERCURY, TOTAL	001	S	00C0438	11/30/00	12/18/00	12/19/00
MERCURY, TOTAL	001 REP	S	00C0438	11/30/00	12/18/00	12/19/00
MERCURY, TOTAL	001 MS	S	00C0438	11/30/00	12/18/00	12/19/00
LEAD, TOTAL	001	S	99L1813	11/30/00	12/14/00	12/19/00
LEAD, TOTAL	001 REP	S	99L1813	11/30/00	12/14/00	12/19/00
LEAD, TOTAL	001 MS	S	99L1813	11/30/00	12/14/00	12/19/00
SELENIUM, TOTAL	001	S	99L1813	11/30/00	12/14/00	12/19/00
SELENIUM, TOTAL	001 REP	S	99L1813	11/30/00	12/14/00	12/19/00
SELENIUM, TOTAL	001 MS	S	99L1813	11/30/00	12/14/00	12/19/00

LAB QC:

SILVER LABORATORY	LC1 BS	S	99L1813	N/A	12/14/00	12/19/00
SILVER, TOTAL	MB1	S	99L1813	N/A	12/14/00	12/19/00
ARSENIC LABORATORY	LC1 BS	S	99L1813	N/A	12/14/00	12/19/00
ARSENIC, TOTAL	MB1	S	99L1813	N/A	12/14/00	12/19/00
BARIUM LABORATORY	LC1 BS	S	99L1813	N/A	12/14/00	12/19/00
BARIUM, TOTAL	MB1	S	99L1813	N/A	12/14/00	12/19/00
CADMIUM LABORATORY	LC1 BS	S	99L1813	N/A	12/14/00	12/19/00
CADMIUM, TOTAL	MB1	S	99L1813	N/A	12/14/00	12/19/00

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-068 H1167

DATE RECEIVED: 12/06/00 RFW LOT # :0012L490

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM LABORATORY	LC1 BS	S	99L1813	N/A	12/14/00	12/19/00
CHROMIUM, TOTAL	MB1	S	99L1813	N/A	12/14/00	12/19/00
MERCURY LABORATORY	LC1 BS	S	00C0438	N/A	12/18/00	12/19/00
MERCURY, TOTAL	MB1	S	00C0438	N/A	12/18/00	12/19/00
LEAD LABORATORY	LC1 BS	S	99L1813	N/A	12/14/00	12/19/00
LEAD, TOTAL	MB1	S	99L1813	N/A	12/14/00	12/19/00
SELENIUM LABORATORY	LC1 BS	S	99L1813	N/A	12/14/00	12/19/00
SELENIUM, TOTAL	MB1	S	99L1813	N/A	12/14/00	12/19/00

RECRA
ENVIRONMENTAL
INC.

Chemical and Environmental Measurement Information

Recra LabNet Philadelphia
Analytical Report

Client: TNU-HANFORD B00-068
RFW#: 0012L490
SDG/SAF#: H1167/B00-068

W.O.#: 10985-001-001-9999-00
Date Received: 12-06-00

METALS CASE NARRATIVE

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

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

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

4. The cooler temperature has 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) with the exception of the final CCV for Silver. There is no significant impact to the data as all samples are surrounded by CCVs that were in control.

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 form 7.

10. The matrix spike (MS) recovery for 1 analyte was outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 13 pages.

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
B10F90	Chromium	100	110.1

12. All duplicate analyses were within 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.

for Pat E

J. Michael Taylor
VP, Laboratory General Manager
Lionville Laboratory

gmb/m12-490

01-09-01
Date

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Recra Lot#: 00124490

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B		__200.7				__99
Antimony	__6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	✓6010B		__200.7				__99
Beryllium	__6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	✓6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	__6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	__6010B		__200.7				__99
Mercury	__7470A [3]	✓7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	__6010B		__200.7				__99
Potassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	✓6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	__6010B		__200.7				__99
Zinc	__6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

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

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 12/27/00

CLIENT: TNUHANFORD B00-068 H1167 RECRA LOT #: 0012L490

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B10F90	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	4.2	MG/KG	0.24	1.0
		Barium, Total	103	MG/KG	0.02	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Chromium, Total	5.8	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	4.8	MG/KG	0.21	1.0
		Selenium, Total	0.33 u	MG/KG	0.33	1.0

07

Recra LabNet - Lionville

INORGANICS METHOD BLANK DATA SUMMARY PAGE 12/27/00

CLIENT: TNUHANFORD B00-068 H1167 RECRA LOT #: 0012L490

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	99L1813-MB1	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	0.24 u	MG/KG	0.24	1.0
		Barium, Total	0.02	MG/KG	0.02	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Chromium, Total	0.09	MG/KG	0.06	1.0
		Lead, Total	0.21 u	MG/KG	0.21	1.0
		Selenium, Total	0.33 u	MG/KG	0.33	1.0
BLANK1	00C0438-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

08

Recra LabNet - Lionville

INORGANICS ACCURACY REPORT 12/27/00

CLIENT: TNUHANFORD B00-068 H1167 RECRA LOT #: 0012L490

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B10F90	Silver, Total	4.5	0.11u	4.9	91.8	1.0
		Arsenic, Total	190	4.2	198	93.7	1.0
		Barium, Total	293	103	198	96.2	1.0
		Cadmium, Total	4.5	0.03u	4.9	91.8	1.0
		Chromium, Total	34.3	5.8	19.8	143.9	1.0
		Mercury, Total	0.16	0.02u	0.16	103.1	1.0
		Lead, Total	49.5	4.8	49.5	90.3	1.0
		Selenium, Total	182	0.33u	198	91.9	1.0

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Recra LabNet - Lionville

INORGANICS PRECISION REPORT 12/27/00

CLIENT: TNUHANFORD B00-068 H1167 RECRA LOT #: 0012L490

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B10F90	Silver, Total	0.11u	0.11u	NC	1.0
		Arsenic, Total	4.2	4.3	2.4	1.0
		Barium, Total	103	94.1	8.8	1.0
		Cadmium, Total	0.03u	0.03u	NC	1.0
		Chromium, Total	5.8	6.5	11.4	1.0
		Mercury, Total	0.02u	0.02u	NC	1.0
		Lead, Total	4.8	4.4	8.7	1.0
		Selenium, Total	0.33u	0.33u	NC	1.0

Recra LabNet - Lionville

INORGANICS LABORATORY CONTROL STANDARDS REPORT 12/27/00

CLIENT: TNUHANFORD B00-068 H1167 RECRA LOT #: 0012L490

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	99L1813-LC1	Silver, LCS	48.8	50.0	MG/KG	97.6
		Arsenic, LCS	959	1000	MG/KG	95.9
		Barium, LCS	488	500	MG/KG	97.6
		Cadmium, LCS	24.6	25.0	MG/KG	98.4
		Chromium, LCS	49.8	50.0	MG/KG	99.6
		Lead, LCS	242	250	MG/KG	97.0
		Selenium, LCS	945	1000	MG/KG	94.5
LCS1	00C0438-LC1	Mercury, LCS	0.64	0.7	MG/KG	89.9

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RECRA LabNet Use Only

00121490

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client ~~HANFORD~~ TRU-Hanford TK12-6-00 SAF - B00 - 068

Est. Final Proj. Sampling Date

Project # 10985-001-001-9999-00

Project Contact/Phone #

RECRA Project Manager OJ

QC Spec Del STC TAT 21 day

Date Rec'd 12-6-00 Date Due 12-27-00

Account #

		A	B	C	D	E
Refrigerator #		1	S	S	S	S
#/Type Container	Liquid					
	Solid	1AG	1AG	1AG	1AG	1AG
Volume	Liquid					
	Solid	250	250	250	250	250
Preservatives		—	—	—	—	—
ANALYSES REQUESTED		ORGANIC: VOA	ORGANIC: BNA	ORGANIC: Pest/PCB	ORGANIC: Herb	INORG: ICP Metal / CN / Ignitability / pH

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb	ICP Metal	CN	Ignitability	pH
								RECRA LabNet Use Only							
								0624H	0625H			RCRA70	ICM70	ICN03 ISFD	pH
	001	B10F90	✓	✓	S	11/30/00	1230	1	1			1	1	1	1

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

Special Instructions: SAF B00-068

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

RECRA LabNet Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # [illegible]
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape 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. 2.9 °C

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES: 82148983047

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	12/6/00	0915

Relinquished by	Received by	Date	Time
COMPOSITE WASTE		ORIGINAL REWRITTEN	

12

00121490

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-068-85	Page 1 of 1
Collector: Thomas	Company Contact: D Weekes; Telephone No.: 372-9524	Project Coordinator: TRENT, SJ	Price Code: 8L; Data Turnaround: 21 Days
Project Designation: 200 Area Groundwater Well Drilling Waste Designation for	Sampling Location: 200 West	SAF No.: B00-068	Air Quality ☐
Ice Chest No.: Shipping Drum 96-001 (1of1)	Field Logbook No.: EL 1518; COA: JRCRA03200	Method of Shipment: Fed-EX	
Shipped To: TMA/RECRA	Offsite Property No.: A010038	Bill of Lading/Air Bill No.: 4235 7453 0945	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

	B	A	D	C	E					
Preservation	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	aG					
No. of Container(s)	1	1	1	1	1					
Volume	250mL	250mL	250mL	250mL	250mL					
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (Add-On) (m-Cresol)	VOA - 8260A (TCL)	IC Anions - 300.0 (Nitrate); Sulfides - 9030; Total Cyanide - 9010	ICP Metals - 6010A (Supernate); Mercury - 7471 - (CV)	pH (Soil) - 9045				Drum	Top

Sample No.	Matrix *	Sample Date	Sample Time										
B10F90	SOIL	11/30/00	1230	X	X	X	X	X			200W-00-0182		B0H6
									out of spec < 1000 dpm				

CHAIN OF POSSESSION

Sign/Print Name: BT 11/30/00

Relinquished By	Date/Time	Received By	Date/Time
[illegible]	11/30/00 1708	Stored in Ref 3B	11/30/00 1708
Removed from Ref 3B 3728	12.4.00 0800	R Thorer	12.4.00 0800
R Thorer	12.4.00 0800	[illegible]	
Fed Ex	12-5-00 10:00	JR Corso	12-5-00 10:00
JR Corso JR Corso	12-5-00 16:00	Fed Ex	
Fed Ex	12-6-00 0915	[illegible]	12-6-00 0915

RT 12.4.00

SPECIAL INSTRUCTIONS

Samples stored in Ref.# 3B at the 3728 Shipping Facility on 11/30/00
Collector not available to relinquish samples on 12/4/00 for shipment.
RT 12.4.00

Matrix *
S=Soil
SE=Sediment
SO=Solid
S=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solid
DL=Drum Liqu
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

Recra LabNet - Lionville Laboratory
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-068 H1167

DATE RECEIVED: 12/06/00 RFW LOT # :0012L490

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B10F90	001	S	00LE1603	11/30/00	12/07/00	12/28/00
B10F90	001 MS	S	00LE1603	11/30/00	12/07/00	12/28/00
B10F90	001 MSD	S	00LE1603	11/30/00	12/07/00	12/28/00
LAB QC:						
SBLKJM	MB1	S	00LE1603	N/A	12/07/00	12/10/00
SBLKJM	MB1 BS	S	00LE1603	N/A	12/07/00	12/10/00

JAN 2001
RECEIVED

RECRA
ENVIRONMENTAL
INC.

Chemical and Environmental Measurement Information

Recra LabNet Philadelphia
Analytical Report

Client: TNU-HANFORD B00-068
RFW #: 0012L490
SDG/SAF #: H1167/B00-068

W.O. #: 10985-001-001-9999-00
Date Received: 12-06-2000

SEMIVOLATILE

One (1) soil sample was collected on 11-30-2000.

The sample and its associated QC samples were extracted on 12-07-2000 and analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 12-10,28-2000.

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

1. The cooler temperature upon receipt has been recorded on the chain-of-custody.

2. The samples were extracted and analyzed within required holding times.

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

4. Six (6) of thirty (30) surrogate recoveries were outside acceptance criteria. The sample was inadvertently double surrogated. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

5. The surrogate solution was inadvertently switched; consequently, acid surrogates were spiked at 100ug/uL instead of 150ug/uL and base/neutral surrogate were spiked at 150ug/mL instead of 100ug/mL. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

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

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

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

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

by J. Michael Taylor
V.P./Laboratory General Manager
Lionville Laboratory

01-19-01
Date

som\group\data\bna\tnu-hanford-12-490.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 11 pages.

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

RECRA **Sample Discrepancy Report (SDR)** SDR #: CDMS422

Initiator: John W. Smith Batch: CD12L490 Parameter: BNA
Date: 12/08/00 Samples: 001 Matrix: Soil
Client: TWU Hinkley Method: SW846/MCAWW/CLP/ Prep Batch: CDLL1603
BCD-068 H1167

1. Reason for SDR

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

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

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

c. QC Problem (Include all relevant specific results; attach data if necessary)
BN surrogates seem to be double spiked. Acid spikes ok. MS/MSD ok.

2. Known or Probable Causes(s) (To be used for trend analysis)
__ Lack of Organization
__ Lack of Training
__ Lack of Discipline
__ Lack of Resources
__ Lack of Time
__ Lack of Management Support
__ Other (Please explain):

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

Other Description:
Report + Narrate - 001 appears to have been inadvertently double spiked with surrogates - surrogate solution has been prepped with Acid/Base concentrations switched

4. Project Manager Instructions...signature/date: Keith Johnson 12/12/00
__ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: _____
__ Verified re-[log][leach][extract][digest][analysis] (circle)
__ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

Other Explanation:

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

Route/Distribution of SDR		Route	Distribution of Completed SDR
__	Initiator	__	Metals: Doughty
__	Lab Manager: M. Taylor	__	Inorganic: Perrone
1	Project Mgr: Stone/Carey/Johnson	__	GC/LC: Pastor
__	Section Mgr: Wesson/Daniels	2	MS: Layman/Rycklak
X	QA (file): Schrenkel	__	Log-In: Keppel
__	Data Management: Feldman	__	Admin: Soos
__	Sample Prep: Bickel/Kauffman	__	Other: _____

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.

mmz\10-94\gloss.bna

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.

mmz\10-94\gloss.bna

Recra LabNet - Lionville Laboratory

Semivolatiles by GC/MS, HSL List

Report Date: 01/04/01 10:18

RFW Batch Number: **0012L490** Client: **TNUHANFORD B00-068 H1167** Work Order: 10985001001 Page: 1a

	Cust ID:	B10F90	B10F90	B10F90	SBLKJM	SBLKJM BS
Sample Information	RFW#:	001	001 MS	001 MSD	00LE1603-MB1	00LE1603-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	165 * %	77 %	68 %	46 %	53 %
	2-Fluorobiphenyl	170 * %	69 %	62 %	43 %	53 %
	Terphenyl-d14	290 * %	113 %	79 %	62 %	66 %
	Phenol-d5	153 * %	76 %	65 %	48 %	57 %
	2-Fluorophenol	141 * %	72 %	61 %	44 %	53 %
	2,4,6-Tribromophenol	153 * %	88 %	68 %	42 %	63 %
Phenol		35 J	66 %	59 %	330 U	52 %
bis(2-Chloroethyl)ether		330 U	340 U	290 U	330 U	330 U
2-Chlorophenol		330 U	78 %	68 %	330 U	56 %
1,3-Dichlorobenzene		330 U	340 U	290 U	330 U	330 U
1,4-Dichlorobenzene		330 U	76 %	65 %	330 U	47 %
1,2-Dichlorobenzene		330 U	340 U	290 U	330 U	330 U
2-Methylphenol		330 U	340 U	290 U	330 U	330 U
2,2'-oxybis(1-Chloropropane)		330 U	340 U	290 U	330 U	330 U
4-Methylphenol		330 U	340 U	290 U	330 U	330 U
N-Nitroso-di-n-propylamine		330 U	73 %	63 %	330 U	53 %
Hexachloroethane		330 U	340 U	290 U	330 U	330 U
Nitrobenzene		330 U	340 U	290 U	330 U	330 U
Isophorone		330 U	340 U	290 U	330 U	330 U
2-Nitrophenol		330 U	340 U	290 U	330 U	330 U
2,4-Dimethylphenol		330 U	340 U	290 U	330 U	330 U
bis(2-Chloroethoxy)methane		330 U	340 U	290 U	330 U	330 U
2,4-Dichlorophenol		330 U	340 U	290 U	330 U	330 U
1,2,4-Trichlorobenzene		330 U	71 %	62 %	330 U	51 %
Naphthalene		330 U	340 U	290 U	330 U	330 U
4-Chloroaniline		330 U	340 U	290 U	330 U	330 U
Hexachlorobutadiene		330 U	340 U	290 U	330 U	330 U
4-Chloro-3-methylphenol		330 U	78 %	63 %	330 U	57 %
2-Methylnaphthalene		330 U	340 U	290 U	330 U	330 U
Hexachlorocyclopentadiene		330 U	340 U	290 U	330 U	330 U
2,4,6-Trichlorophenol		330 U	340 U	290 U	330 U	330 U
2,4,5-Trichlorophenol		820 U	860 U	720 U	830 U	830 U

*= Outside of EPA CLP QC limits.

Cust ID:	B10F90		B10F90		B10F90		SBLKJM		SBLKJM BS	
RFW#:	001		001 MS		001 MSD		00LE1603-MB1		00LE1603-MB1	
2-Chloronaphthalene	330	U	340	U	290	U	330	U	330	U
2-Nitroaniline	820	U	860	U	720	U	830	U	830	U
Dimethylphthalate	330	U	340	U	290	U	330	U	330	U
Acenaphthylene	330	U	340	U	290	U	330	U	330	U
2,6-Dinitrotoluene	330	U	340	U	290	U	330	U	330	U
3-Nitroaniline	820	U	860	U	720	U	830	U	830	U
Acenaphthene	330	U	79	%	70	%	330	U	53	%
2,4-Dinitrophenol	820	U	860	U	720	U	830	U	830	U
4-Nitrophenol	820	U	89	%	61	%	830	U	56	%
Dibenzofuran	330	U	340	U	290	U	330	U	330	U
2,4-Dinitrotoluene	330	U	90 *	%	77	%	330	U	59	%
Diethylphthalate	330	U	340	U	290	U	330	U	330	U
4-Chlorophenyl-phenylether	330	U	340	U	290	U	330	U	330	U
Fluorene	330	U	340	U	290	U	330	U	330	U
4-Nitroaniline	820	U	860	U	720	U	830	U	830	U
4,6-Dinitro-2-methylphenol	820	U	860	U	720	U	830	U	830	U
N-Nitrosodiphenylamine (1)	330	U	340	U	290	U	330	U	330	U
4-Bromophenyl-phenylether	330	U	340	U	290	U	330	U	330	U
Hexachlorobenzene	330	U	340	U	290	U	330	U	330	U
Pentachlorophenol	820	U	64	%	49	%	830	U	27	%
Phenanthrene	330	U	340	U	290	U	330	U	330	U
Anthracene	330	U	340	U	290	U	330	U	330	U
Carbazole	330	U	340	U	290	U	330	U	330	U
Di-n-butylphthalate	330	U	340	U	290	U	330	U	19	J
Fluoranthene	330	U	340	U	290	U	330	U	330	U
Pyrene	330	U	89	%	74	%	330	U	55	%
Butylbenzylphthalate	330	U	340	U	290	U	330	U	330	U
3,3'-Dichlorobenzidine	330	U	340	U	290	U	330	U	330	U
Benzo(a)anthracene	330	U	340	U	290	U	330	U	330	U
Chrysene	330	U	340	U	290	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	100	J	28	J	16	J	330	U	330	U
Di-n-octyl phthalate	330	U	340	U	290	U	330	U	330	U
Benzo(b)fluoranthene	330	U	340	U	290	U	330	U	330	U
Benzo(k)fluoranthene	330	U	340	U	290	U	330	U	330	U
Benzo(a)pyrene	330	U	340	U	290	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	330	U	340	U	290	U	330	U	330	U
Dibenz(a,h)anthracene	330	U	340	U	290	U	330	U	330	U
Benzo(g,h,i)perylene	330	U	340	U	290	U	330	U	330	U

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

1F
SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B10F90

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNUHANFORD B00-068 H1167

Matrix: SOIL Lab Sample ID: 0012L490-001

Sample wt/vol: 32.1 (g/mL) G Lab File ID: A122734

Level: (low/med) LOW Date Received: 12/06/00

% Moisture: not dec. 5 dec. Date Extracted: 12/07/00

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/28/00

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 0.500

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.49	100	J
2.	UNKNOWN	18.62	100	J
3.	UNKNOWN	23.05	300	J
4.	ALKANE	23.31	200	J
5.	UNKNOWN	23.41	100	J

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKJM

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNUHANFORD B00-068 H1167

Matrix: SOIL Lab Sample ID: 00LE1603-MB1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D120916

Level: (low/med) LOW Date Received: 12/07/00

% Moisture: not dec. 0 dec. Date Extracted: 12/07/00

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/10/00

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 0.500

Number TICs found: 0

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

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

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00121490

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client ~~HANFORD~~ TRU-Hanford SAF-B00-068 TR 12-6-00

Est. Final Proj. Sampling Date

Project # 10985-001-001-9999-00

Project Contact/Phone #

RECRA Project Manager OJ

QC Spec Del Std TAT 21 day

Date Rec'd 12-6-00 Date Due 12-27-00

Account #

		A	B	C	D	E
Refrigerator #		1	S	S	S	S
#/Type Container	Liquid					
	Solid	1AG	1AG	1AG	1AG	1AG
Volume	Liquid				1	
	Solid	250	250	250	250	250
Preservatives		—	✓	—	—	—
ANALYSES REQUESTED →		ORGANIC: VOA	ORGANIC: BNA	INORG: Total Metal	INORG: CN	INORG: Reactivity / pH
RECRA LabNet Use Only		OLCSH	OLCSH	RCRATO	ICMTO	ICMOM ISFD / PH

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	A	B	C	D	E
001	B10F90	✓	✓	S	11/30/00	1230	1	1	1	1	1

Special Instructions: SAF B00-068

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

RECRA LabNet Use Only

Samples were: 1) Shipped ___ or Hand Delivered ___
Airbill # [illegible]
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape 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. 2.5 °C

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:
82148983 0147

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	12/6/00	0915

Relinquished by	Received by	Date	Time
COMPOSITE WASTE		ORIGINAL REWRITTEN	

00121490

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-068-85	Page 1 of 1

Collector: Thomas	Company Contact: D Weekes	Telephone No.: 372-9524	Project Coordinator: TRENT, SJ
Price Code: 8L	Data Turnaround: 21 Days	Air Quality ☐	
Project Designation: 200 Area Groundwater Well Drilling Waste Designation for	Sampling Location: 200 West	SAF No.: B00-068	
Ice Chest No.: Shipping Drum 96 001 (1of1)	Field Logbook No.: EL 1518	COA: JRCRA03200	Method of Shipment: Fed-EX
Shipped To: TMA/RECRA	Offsite Property No.: A010038	Bill of Lading/Air Bill No.: 4235 2953 0945	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	B Cool 4C	A Cool 4C	D None	C None	E None					
Type of Container	aG	aG	aG	aG	aG					
No. of Container(s)	1	1	1	1	1					
Volume	250mL	250mL	250mL	250mL	250mL					
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) (m-Cresol)	VOA - 8260A (TCL)	IC Anions - 300.0 (Nitrate); Sulfides - 9030; Total Cyanide - 9010	ICP Metals - 6010A (Supertrace); Mercury - 7471 - (CV)	pH (Soil) - 9045					

Sample No.	Matrix *	Sample Date	Sample Time										
											Drum		Test
B10F90	SOIL	11/30/00	1230	X	X	X	X	X			200W-00-0182		B0H4
									out of jar		< 1000 dpm		

CHAIN OF POSSESSION — Sign/Print Names: BT 11/30/00

Relinquished By	Date/Time	Received By	Date/Time
Greg Thomas	11/30/00 1708	Stored in Ref 3B	11/30/00 1708
Removed from Ref 3B 3728	12.4.00 0800	R Thorner	12.4.00 0800
R Thorner	12.4.00 0800	[illegible]	
Fed Ex	12-5-00 15:00	R Thorner / J R Corser	12-5-00 15:00
R Thorner / J R Corser	12-5-00 15:00	Fed Ex	
Fed Ex	12-6-00 0915	[illegible]	12-6-00 0915

SPECIAL INSTRUCTIONS

Samples stored in Ref.# 3B at the 3728 Shipping Facility on 11/30/00
Collector not available to relinquish samples on 12/4/00 for shipment.
RT 12/4/00

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)

Recra LabNet - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-068 H1167

DATE RECEIVED: 12/06/00 RFW LOT # :0012L490

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B10F90	001	S	00LVX535	11/30/00	N/A	12/18/00
B10F90	001 MS	S	00LVX535	11/30/00	N/A	12/18/00
B10F90	001 MSD	S	00LVX535	11/30/00	N/A	12/18/00

LAB QC:

VBLKGL	MB1	S	00LVX535	N/A	N/A	12/18/00
VBLKGL	MB1 BS	S	00LVX535	N/A	N/A	12/18/00

JAN 2001
RECEIVED

RECRA
ENVIRONMENTAL
INC.

Chemical and Environmental Measurement Information

Recra LabNet Philadelphia
Analytical Report

Client: TNU-HANFORD B00-068
RFW #: 0012L490
SDG/SAF #: H1167/B00-068

W.O. #: 10985-001-001-9999-00
Date Received: 12-06-2000

GC/MS VOLATILE

One (1) soil sample was collected on 11-30-2000.

The sample and its associated QC samples were analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8260A for client specified Volatile target compounds on 12-18-2000.

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

1. The cooler temperature upon receipt has been recorded on the chain-of-custody.

2. The sample was inadvertently analyzed outside required holding time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

3. Non-target compounds were not detected in the sample.

4. All surrogate recoveries were within EPA QC limits.

5. All matrix spike recoveries were within EPA QC limits.

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

7. The method blank contained the common laboratory contaminants Methylene Chloride and Acetone at levels less than 2x the CRQL. The method blank also contained the target compound Bromomethane at a level less than the CRQL.

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

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

Cy

J. Michael Taylor
V.P./Laboratory General Manager
Lionville Laboratory

01-19-01
Date

som\group\data\voa\tnu-hanford-0012-490.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 0 pages.

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

RECRA **Sample Discrepancy Report (SDR)** SDR #: CONT32

Initiator: Jodie Larsen Batch: 0012449C Parameter: 0624HG
Date: 12/13/00 Samples: 001 Matrix: SOIL
Client: TNJ Method: SW846/MCAWW/CLP/ 8260A Prep Batch: _____

1. Reason for SDR

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

b. General Discrepancy

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

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

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

Samples out of hold 12/14/00, Were not Run.
Samples collected: 11-30-00
" received: 12-06-00

2. Known or Probable Causes(s) (To be used for trend analysis)

__ Lack of Organization
__ Lack of Training
__ Lack of Discipline
__ Lack of Resources
__ Lack of Time
__ Lack of Management Support
✓ Other (Please explain): analyst oversight

3. Discussion and Proposed Action Other Description:

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

run out of hold

4. Project Manager Instructions...signature/date: [signature] 12/18/00

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

5. Final Action...signature/date: J Rycklak 1/2/01 Other Explanation:

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

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

Route/Distribution of SDR	Route	Distribution of Completed SDR
__ Initiator	__	Metals: Doughty
__ Lab Manager: M. Taylor	__	Inorganic: Perrone
__ Project Mgr: Stone/Carey/Johnson	__	GC/LC: Pastor
__ Section Mgr: Wesson/Daniels	__	MS: Layman/Rycklak
X QA (file): Schrenkel	__	Log-in: Keppel
__ Data Management: Feldman	__	Admin: Soos
__ Sample Prep: Bickel/Kauffman	__	Other: _____

L-WI-006/E-08/00

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.

mmz\10-94\gloss.voa

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.

mmz\10-94\gloss.voa

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

Recra LabNet - Lionville Laboratory

Volatiles by GC/MS, HSL List

Report Date: 01/05/01 12:17

RFW Batch Number: **0012L490** Client: **TNUHANFORD B00-068 H1167** Work Order: 10985001001 Page: 1a

	Cust ID:	B10F90		B10F90		B10F90		VBLKGL		VBLKGL BS	
Sample Information	RFW#:	001		001 MS		001 MSD		00LVX535-MB1		00LVX535-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.06		1.06		1.06		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate Recovery	Toluene-d8	96	%	86	%	94	%	90	%	90	%
	Bromofluorobenzene	79	%	75	%	80	%	80	%	80	%
	1,2-Dichloroethane-d4	85	%	80	%	83	%	78	%	78	%
Chloromethane		11	U	11	U	11	U	10	U	10	U
Bromomethane		11	U	11	U	11	U	2	J	10	U
Vinyl Chloride		11	U	11	U	11	U	10	U	10	U
Chloroethane		11	U	11	U	11	U	10	U	10	U
Methylene Chloride		14	B	14	B	13	B	9		5	B
Acetone		7	JB	7	JB	7	JB	4	J	10	U
Carbon Disulfide		6	U	6	U	6	U	5	U	5	U
1,1-Dichloroethene		6	U	75	%	79	%	5	U	79	%
1,1-Dichloroethane		6	U	6	U	6	U	5	U	5	U
1,2-Dichloroethene (total)		6	U	6	U	6	U	5	U	5	U
Chloroform		6	U	6	U	6	U	5	U	5	U
1,2-Dichloroethane		6	U	6	U	6	U	5	U	5	U
2-Butanone		11	U	11	U	11	U	10	U	10	U
1,1,1-Trichloroethane		6	U	6	U	6	U	5	U	5	U
Carbon Tetrachloride		6	U	6	U	6	U	5	U	5	U
Bromodichloromethane		6	U	6	U	6	U	5	U	5	U
1,2-Dichloropropane		6	U	6	U	6	U	5	U	5	U
cis-1,3-Dichloropropene		6	U	6	U	6	U	5	U	5	U
Trichloroethene		6	U	80	%	86	%	5	U	82	%
Dibromochloromethane		6	U	6	U	6	U	5	U	5	U
1,1,2-Trichloroethane		6	U	6	U	6	U	5	U	5	U
Benzene		6	U	86	%	91	%	5	U	87	%
Trans-1,3-Dichloropropene		6	U	6	U	6	U	5	U	5	U
Bromoform		6	U	6	U	6	U	5	U	5	U
4-Methyl-2-pentanone		11	U	11	U	11	U	10	U	10	U
2-Hexanone		11	U	11	U	11	U	10	U	10	U
Tetrachloroethene		6	U	6	U	6	U	5	U	5	U
1,1,2,2-Tetrachloroethane		6	U	6	U	6	U	5	U	5	U
Toluene		6	U	87	%	94	%	5	U	89	%

*= Outside of EPA CLP QC limits.

RFW Batch Number: **0012L490** Client: **TNUHANFORD B00-068 H1167** Work Order: 10985001001 Page: 1b

Cust ID:	B10F90		B10F90		B10F90		VBLKGL		VBLKGL BS	
RFW#:	001		001 MS		001 MSD		00LVX535-MB1		00LVX535-MB1	
Chlorobenzene	6	U	84	%	92	%	5	U	88	%
Ethylbenzene	6	U	6	U	6	U	5	U	5	U
Styrene	6	U	6	U	6	U	5	U	5	U
Xylene (total)	6	U	6	U	6	U	5	U	5	U

*= Outside of EPA CLP QC limits.

RECRA LabNet Use Only

00121490

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client ~~HANFORD~~ Tru-Hanford SAF-B00-068

TR 12-6-00

Est. Final Proj. Sampling Date

Project # 10985-001-001-9999-00

Project Contact/Phone #

RECRA Project Manager OJ

QC Spec Del Std TAT 21 day

Date Rec'd 12-6-00 Date Due 12-27-00

Account #

		A	B						C	D		E			
Refrigerator #		1	S						S	S		S			
#/Type Container	Liquid														
	Solid	1AG	1AG						1AG	1AG		1AG			
Volume	Liquid									1					
	Solid	250	250						250	250		250			
Preservatives		—	✓						—	✓		✓			
ANALYSES REQUESTED →		ORGANIC							INORG						
		VOA	BNA	Pest/PCB	Herb				ICP Metal	CN	Ie Wi/DNY	pH			
		RECRA LabNet Use Only													
		OC24H	OC25H						RCRATO	ICNTO	ICNO3 ISFD	IPH			

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected												
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	B10F90	✓	✓	S	11/30/00	1230	1	1					1	1	1		1	

Special Instructions: SAF B00-068

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

RECRA LabNet Use Only

Samples were: 1) Shipped ___ or Hand Delivered ___ Airbill ✓ Bolt

2) Ambient or Chilled

3) Received In Good Condition Y or N

4) Labels Indicate Properly Preserved Y or N

5) Received Within Holding Times Y or N

COC Tape 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. 2.5 °C

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

82148983 0147

Relinquished by	Received by	Date	Time
Fed Ex	[illegible]	12/6/00	0915

Relinquished by	Received by	Date	Time
COMPOSITE WASTE		ORIGINAL REWRITTEN	

00121490

10

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-068-85	Page 1 of 1

Collector: Thomas	Company Contact: D Weekes	Telephone No.: 372-9524	Project Coordinator: TRENT, SJ
Price Code: 8L	Data Turnaround: 21 Days	Air Quality ☐	
Project Designation: 200 Area Groundwater Well Drilling Waste Designation for	Sampling Location: 200 West	SAF No.: B00-068	
Ice Chest No.: Shipping Drum 96 001 (1of1)	Field Logbook No.: EL 1518	COA: JRCRA03200	Method of Shipment: Fed-EX
Shipped To: TMA/RECRA	Offsite Property No.: A010038	Bill of Lading/Air Bill No.: 4235 7953 0945	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

	B	A	D	C	E					
Preservation	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	aG					
No. of Container(s)	1	1	1	1	1					
Volume	250mL	250mL	250mL	250mL	250mL					
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) (m-Cresol)	VOA - 8260A (TCL)	IC Anions - 300.0 (Nitrate); Sulfides - 9030; Total Cyanide - 9010	ICP Metals - 6010A (Supertrace); Mercury - 7471 - (CV)	pH (Soil) - 9045					

Sample No.	Matrix *	Sample Date	Sample Time								Drum	Test
B10F90	SOIL	11/30/00	1230	X	X	X	X	X			200W-00-0182	B0YU
									out of jurs < 1000 dpm			

CHAIN OF POSSESSION — Sign/Print Names: BT 11/30/00

Relinquished By	Date/Time	Received By	Date/Time
[illegible]	11/30/00 1708	Stored in Ref 3B	11/30/00 1708
Removed from Ref 3B 3728	12-4-00 0800	R R Thorer	12-4-00 0800
R R Thorer	12-4-00 0800	Fed Ex	
Fed Ex	12-5-00 10:00	J R Corso	12-5-00 10:00
J R Corso	12-5-00 14:00	Fed Ex	
Fed Ex	12-6-00 0915	[illegible]	12-6-00 0915

SPECIAL INSTRUCTIONS

Samples stored in Ref.# 3B at the 3728 Shipping Facility on 11/30/00
Collector not available to relinquish samples on 12/4/00 for shipment. RT 12-4-00

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)