

**Recra LabNet Philadelphia
Analytical Report**

Client : TNU-HANFORD B00-068
RFW# : 0009L624
SDG# : H1034
SAF# : B00-068

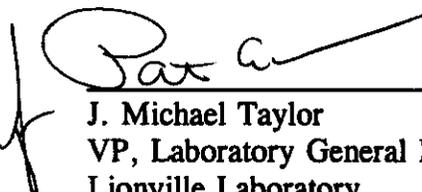
W.O. # : 10985-001-001-9999-00
Date Received: 09-15-00



INORGANIC CASE NARRATIVE

EDMC

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 Total Cyanide and 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

10-26-00
 Date

njp\09-624

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.

Recra LabNet Philadelphia

WET CHEMISTRY
METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	<u>ASTM</u>	<u>SW846</u>	<u>OTHER</u>
% Ash	___ D2216-80		
% Moisture	___ D2216-80		___ ILMO4.0 (e)
% Solids	✓ D2216-80		___ ILMO4.0 (e)
% Volatile Solids	___ D2216-80		
ASTM Extraction in Water	___ D3987-81/85		
BTU	___ D240-87		
CEC		___ 9081	___ c
Chromium VI		___ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		___ 1110(mod) ___ 9045C	
Cyanide, Total		✓ 9010B/9014	___ ILMO4.0 (e)
Cyanide, Reactive		___ Section 7.3	
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	
Sulfide		✓ 9030B(mod)	
Specific Gravity	___ D1429-76C/	___ D5057-90	
Sulfur, Total		___ 9056	
Synthetic Preparation Leach		___ 1312	
Paint Filter		9095A	
Other: <u>NITRATE</u>		Method: <u>EPA 300.0</u>	
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 10/17/00

CLIENT: TNU-HANFORD B00-068
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0009L624

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B105W2	% Solids	88.2	%	0.01	1.0
		Nitrate by IC	1.4	u MG/KG	1.4	1.0
		Cyanide, Total	0.46	u MG/KG	0.46	1.0
		pH	8.8	SOIL PH	0.01	1.0
		Sulfide	42.7	u MG/KG	42.7	1.0

Recra LabNet - Lionville

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/17/00

CLIENT: TNU-HANFORD B00-068
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0009L624

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	00LCC060-MB1	Nitrate by IC	1.2	u MG/KG	1.2	1.0
BLANK1	00LCA88-MB1	Cyanide, Total	0.50	u MG/KG	0.50	1.0
BLANK10	00LSD036-MB1	Sulfide	1.0	u MG/KG	1.0	1.0

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INORGANICS ACCURACY REPORT 10/17/00

CLIENT: TNU-HANFORD B00-068
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0009L624

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	B105W2	Nitrate by IC	31	1.4 u	28	112.2	1.0
		Cyanide, Total	4.6	0.46u	4.6	99.4	1.0
		Sulfide	423	8.6	470	88.1	1.0
BLANK10	00LCC060-MB1	Nitrate by IC	25	1.2 u	25	100.2	1.0
BLANK10	00LSD036-MB1	Sulfide	9.2	1.0 u	10.5	88.0	1.0

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INORGANICS PRECISION REPORT 10/17/00

CLIENT: TNU-HANFORD B00-068
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0009L624

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REP)
			RESULT	REPLICATE	RPD	
-001REP	B105W2	‡ Solids	88.2	88.4	0.24	1.0
		Nitrate by IC	1.4 u	1.4 u	NC	1.0
		Cyanide, Total	0.46u	0.45u	NC	1.0
		pH	8.8	8.6	1.5	1.0
		Sulfide	42.7 u	43.3 u	NC	1.0

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INORGANICS LABORATORY CONTROL STANDARDS REPORT 10/17/00

CLIENT: TNU-HANFORD B00-068
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0009L624

SAMPLE	SITE ID	ANALYTE	SPIKED	SPIKED	UNITS	%RECOV
			SAMPLE	AMOUNT		
LCSS1	00LC88-LCS1	Cyanide, Total LCS	2.0	2.0	MG/KG	98.2
LCSS2	00LC88-LCS2	Cyanide, Total LCS	10	10	MG/KG	100.2

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B00-068

DATE RECEIVED: 09/15/00

RFW LOT # :0009L624

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B105W2						
% SOLIDS	001	S	00L%S153	09/06/00	09/28/00	09/29/00
% SOLIDS	001 REP	S	00L%S153	09/06/00	09/28/00	09/29/00
NITRATE BY IC	001	S	00LCC060	09/06/00	10/12/00	10/12/00
NITRATE BY IC	001 REP	S	00LCC060	09/06/00	10/12/00	10/12/00
NITRATE BY IC	001 MS	S	00LCC060	09/06/00	10/12/00	10/12/00
TOTAL CYANIDE	001	S	00LCA88	09/06/00	09/21/00	09/21/00
TOTAL CYANIDE	001 REP	S	00LCA88	09/06/00	09/21/00	09/21/00
TOTAL CYANIDE	001 MS	S	00LCA88	09/06/00	09/21/00	09/21/00
PH	001	S	00LPH080	09/06/00	09/17/00	09/17/00
PH	001 REP	S	00LPH080	09/06/00	09/17/00	09/17/00
SULFIDE	001	S	00LSD036	09/06/00	09/22/00	09/22/00
SULFIDE	001 REP	S	00LSD036	09/06/00	09/22/00	09/22/00
SULFIDE	001 MS	S	00LSD036	09/06/00	09/22/00	09/22/00

LAB QC:

NITRATE BY IC	MB1	S	00LCC060	N/A	10/12/00	10/12/00
NITRATE BY IC	MB1 BS	S	00LCC060	N/A	10/12/00	10/12/00
TOTAL CYANIDE	LCS L	S	00LCA88	N/A	09/21/00	09/21/00
TOTAL CYANIDE	LCS L	S	00LCA88	N/A	09/21/00	09/21/00
TOTAL CYANIDE	MB1	S	00LCA88	N/A	09/21/00	09/21/00
SULFIDE	MB1	S	00LSD036	N/A	09/22/00	09/22/00
SULFIDE	MB1 BS	S	00LSD036	N/A	09/22/00	09/22/00

0009L624

Custody Transfer Record/Lab Work Request

Page 1 of 1
FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS



10

Client <u>TNU-Hanford B00-068</u>		Refrigerator #		1	4					4	4	4					
Est. Final Proj. Sampling Date		#/Type Container		Liquid													
Project # <u>10985-001-001-9999-00</u>				Solid	1FG	1FG				1FG	1FG	1FG					
Project Contact/Phone #		Volume		Liquid													
RECRA Project Manager <u>AS</u>				Solid	250	250				250	250	250					
QC <u>Spec</u> Del <u>Std</u> TAT <u>2 days</u>		Preservatives			-	-				-	-	-					
Date Rec'd <u>9-15-00</u> Date Due <u>10-6-00</u>		ANALYSES REQUESTED		ORGANIC					INORG								
Account #				VOA	BNA	Pest/PCB	Herb	Metal	CN								
RECRA LabNet Use Only																	
MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DB - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	0624H	0625X								
			MS	MSD													
	001	B105W2	✓	✓	S	9/15/00	0845	✓	✓								

Special instructions: Saf B00-068

- DATE/REVISIONS:
- _____
 - _____
 - _____
 - _____
 - _____
 - _____

RECRA LabNet Use Only

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

Airbl # See below

COC Tape was:
 1) Present on Outer Package Y or N
 2) Unbroken on Outer Package Y or N
 3) Present on Sample or N
 4) Unbroken on Sample or N
 COC Record Present Upon Sample Rec't or N
 Cooler Temp. 3.8 °C

Relinquished by	Received by	Date	Time
<u>Frd/Ex</u>	<u>J. Reggel</u>	<u>9-15-00</u>	<u>0930</u>

Relinquished by	Received by	Date	Time
COMPOSITE	ORIGINAL		
	REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:
4235 7953 9003

Bechtel Hanford Inc.			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B00-068-66		Page 1 of 1				
Collector FAHLBERG/			Company Contact Dave Weeks		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 <input type="checkbox"/>							
Ice Chest No. SM1 552 (20FD)			Field Logbook No. EL 1516		COA XL0008LMHC		Method of Shipment Fed EX							
Shipped To TMA/RECRA			Offsite Property No. A000309			Bill of Lading/Air Bill No. 42357953-8090-4003								
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation		None	Cool 4C	Cool 4C	None	None				
				Type of Container		aG	aG	aG	aG	aG				
				No. of Container(s)		1	1	1	1	1				
				Special Handling and/or Storage		Volume	120mL	250mL	250mL	250mL	250mL			
SAMPLE ANALYSIS				IC Anions - 300.0 (Nitrate); Sulfides - 9030; Total Cyanide - 9010	Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) (m-Cresol)	VOA - 8260A (TCL)	ICP Metals - 6010A (Supertrace); Mercury - 7471 - (CV)	pH (Soil) - 9045						
Sample No.	Matrix *	Sample Date	Sample Time											
B105W2	SOIL	9.6.00	0845	X	X	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *		
Relinquished By R. Fahlberg 9-6-00		Date/Time 9:00		Received By Steve 9-6-00		Date/Time 10:00		<p>Tie to Box UP3</p> <p>Samples stored in Ref. # 2C at the 3728 Shipping Facility on 9/16/00 Collector of available to relinquish samples on 9/14/00 for shipment.</p> <p>9/14/00</p>				<ul style="list-style-type: none"> S - Soil SE - Sediment SO - Solid S - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids T - Tissue W/I - Wipe L - Liquid V - Vegetation X - Other 		
Relinquished By R. Thoren 9-14-00		Date/Time 0800		Received By R. Thoren 9-14-00		Date/Time 0800								
Relinquished By R. Thoren 9-14-00		Date/Time 0800		Received By FED EX		Date/Time								
Relinquished By Fed Ex 9-7-500 0930		Date/Time		Received By T. Appel 9-15-00 0930		Date/Time								
Relinquished By		Date/Time		Received By		Date/Time								
Relinquished By		Date/Time		Received By		Date/Time								
LABORATORY SECTION		Received By		Title				Date/Time						
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time						



**Recra LabNet Philadelphia
Analytical Report**

Client: TNU-HANFORD B00-068
RFW#: 0009L624
SDG/SAF#: H1034/B00-068

W.O.#: 10985-001-001-9999-00
Date Received: 09-15-00

METALS CASE NARRATIVE

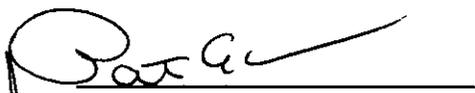
1. This narrative covers the analyses of 1 soil sample.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. The cooler temperature has been recorded on the Chain of Custody.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
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) 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:

<u>Sample ID</u>	<u>Element</u>	<u>PDS</u> <u>Concentration (ppb)</u>	<u>PDS</u> <u>% Recovery</u>
B0YW03	Chromium	100	104.6

12. The duplicate analyses for 3 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.



J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

10-23-00
Date

gmb/m09-624



The following methods are used as reference for the digestion and analysis of samples contained within this

Recre Lot#: 0009L624

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	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Antimony	<u>6010B</u> <u>7041</u> ⁵	<u>200.7</u> <u>204.2</u>			<u>99</u>
Arsenic	<input checked="" type="checkbox"/> 6010B <u>7060A</u> ⁵	<u>200.7</u> <u>206.2</u>	<u>3113B</u>		<u>99</u>
Barium	<input checked="" type="checkbox"/> 6010B	<u>200.7</u>			<u>99</u>
Beryllium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Bismuth	<u>6010B</u> ¹	<u>200.7</u> ¹		<u>1620</u>	<u>99</u>
Boron	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Cadmium	<input checked="" type="checkbox"/> 6010B <u>7131A</u> ⁵	<u>200.7</u> <u>213.2</u>			<u>99</u>
Calcium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Chromium	<input checked="" type="checkbox"/> 6010B <u>7191</u> ⁵	<u>200.7</u> <u>218.2</u>			<u>SS17</u>
Cobalt	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Copper	<u>6010B</u> <u>7211</u> ⁵	<u>200.7</u> <u>220.2</u>			<u>99</u>
Iron	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Lead	<input checked="" type="checkbox"/> 6010B <u>7421</u> ⁵	<u>200.7</u> <u>239.2</u>	<u>3113B</u>		<u>99</u>
Lithium	<u>6010B</u> <u>7430</u> ⁴	<u>200.7</u>		<u>1620</u>	<u>99</u>
Magnesium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Manganese	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Mercury	<u>7470A</u> ³ <input checked="" type="checkbox"/> 7471A ³	<u>245.1</u> ² <u>245.5</u> ²			<u>99</u>
Molybdenum	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Nickel	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Potassium	<u>6010B</u> <u>7610</u> ⁴	<u>200.7</u> <u>258.1</u> ⁴			<u>99</u>
Rare Earths	<input checked="" type="checkbox"/> 6010B ¹	<u>200.7</u> ¹		<u>1620</u>	<u>99</u>
Selenium	<input checked="" type="checkbox"/> 6010B <u>7740</u> ⁵	<u>200.7</u> <u>270.2</u>	<u>3113B</u>		<u>99</u>
Silicon	<u>6010B</u> ¹	<u>200.7</u>		<u>1620</u>	<u>99</u>
Silica	<u>6010B</u>	<u>200.7</u>		<u>1620</u>	<u>99</u>
Silver	<input checked="" type="checkbox"/> 6010B <u>7761</u> ⁵	<u>200.7</u> <u>272.2</u>			<u>99</u>
Sodium	<u>6010B</u> <u>7770</u> ⁴	<u>200.7</u> <u>273.1</u> ⁴			<u>99</u>
Strontium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Thallium	<u>6010B</u> <u>7841</u> ⁵	<u>200.7</u> <u>279.2</u> <u>200.9</u>			<u>99</u>
Tin	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Titanium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Uranium	<u>6010B</u> ¹	<u>200.7</u> ¹		<u>1620</u>	<u>99</u>
Vanadium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Zinc	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Zirconium	<u>6010B</u> ¹	<u>200.7</u> ¹		<u>1620</u>	<u>99</u>

Other: _____

Method: _____

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

Recre LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 10/10/00

CLIENT: TWU-HANFORD B00-068

RECRA LOT #: 0009L624

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B105W2	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	1.4	MG/KG	0.35	1.0
		Barium, Total	86.7	MG/KG	0.02	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Chromium, Total	14.3	MG/KG	0.09	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	2.6	MG/KG	0.22	1.0
		Selenium, Total	0.51	MG/KG	0.45	1.0

Recre LabNet - Lionville

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/10/00

CLIENT: TFU-HANFORD B00-068

RECRA LOT #: 0009L624

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	99L1571-MB1	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	0.34 u	MG/KG	0.34	1.0
		Barium, Total	0.03	MG/KG	0.02	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Chromium, Total	0.09 u	MG/KG	0.09	1.0
		Lead, Total	0.21 u	MG/KG	0.21	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0
BLANK1	00C0320-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Recra LabNet - Lionville

INORGANICS ACCURACY REPORT 10/10/00

CLIENT: TNU-HANFORD B00-068
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0009L624

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	B105W2	Silver, Total	5.1	0.11u	5.2	98.1	1.0
		Arsenic, Total	195	1.4	208	93.1	1.0
		Barium, Total	269	86.7	208	87.8	1.0
		Cadmium, Total	4.9	0.03u	5.2	94.2	1.0
		Chromium, Total	40.6	14.3	20.8	126.4	1.0
		Mercury, Total	0.16	0.02u	0.16	102.5	1.0
		Lead, Total	51.5	2.6	52.0	94.0	1.0
		Selenium, Total	189	0.51	208	90.7	1.0

Recre LabNet - Lionville

INORGANICS PRECISION REPORT 10/10/00

CLIENT: TNU-HANFORD B00-068
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0009L624

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION
			RESULT	REPLICATE	RPD	
-001REP	B105W2	Silver, Total	0.11u	0.11u	NC	1.0
		Arsenic, Total	1.4	1.1	24.0	1.0
		Barium, Total	66.7	63.0	31.7	1.0
		Cadmium, Total	0.03u	0.03u	NC	1.0
		Chromium, Total	14.3	13.4	6.5	1.0
		Mercury, Total	0.02u	0.01u	NC	1.0
		Lead, Total	2.6	2.3	12.2	1.0
		Selenium, Total	0.51	0.45u	NC 200	1.0

4/23 10/23/00

Recra LabNet - Lionville

INORGANICS LABORATORY CONTROL STANDARDS REPORT 10/10/00

CLIENT: TWU-HANFORD B00-068
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0009L624

SAMPLE	SITE ID	ANALYTE	SPIKED	SPIKED	UNITS	%RECOV
			SAMPLE	AMOUNT		
LCS1	99L1571-LC1	Silver, LCS	49.1	50.0	MG/KG	98.2
		Arsenic, LCS	954	1000	MG/KG	95.4
		Barium, LCS	494	500	MG/KG	98.7
		Cadmium, LCS	24.6	25.0	MG/KG	98.4
		Chromium, LCS	49.8	50.0	MG/KG	99.6
		Lead, LCS	244	250	MG/KG	97.6
		Selenium, LCS	923	1000	MG/KG	92.3
LCS1	00C0320-LC1	Mercury, LCS	0.80	0.7	MG/KG	112.8

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B00-068

DATE RECEIVED: 09/15/00

RFW LOT # :0009L624

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B105W2						
SILVER, TOTAL	001	S	99L1571	09/06/00	09/21/00	09/21/00
SILVER, TOTAL	001 REP	S	99L1571	09/06/00	09/21/00	09/21/00
SILVER, TOTAL	001 MS	S	99L1571	09/06/00	09/21/00	09/21/00
ARSENIC, TOTAL	001	S	99L1571	09/06/00	09/21/00	09/21/00
ARSENIC, TOTAL	001 REP	S	99L1571	09/06/00	09/21/00	09/21/00
ARSENIC, TOTAL	001 MS	S	99L1571	09/06/00	09/21/00	09/21/00
BARIUM, TOTAL	001	S	99L1571	09/06/00	09/21/00	09/21/00
BARIUM, TOTAL	001 REP	S	99L1571	09/06/00	09/21/00	09/21/00
BARIUM, TOTAL	001 MS	S	99L1571	09/06/00	09/21/00	09/21/00
CADMIUM, TOTAL	001	S	99L1571	09/06/00	09/21/00	09/21/00
CADMIUM, TOTAL	001 REP	S	99L1571	09/06/00	09/21/00	09/21/00
CADMIUM, TOTAL	001 MS	S	99L1571	09/06/00	09/21/00	09/21/00
CHROMIUM, TOTAL	001	S	99L1571	09/06/00	09/21/00	09/21/00
CHROMIUM, TOTAL	001 REP	S	99L1571	09/06/00	09/21/00	09/21/00
CHROMIUM, TOTAL	001 MS	S	99L1571	09/06/00	09/21/00	09/21/00
MERCURY, TOTAL	001	S	00C0320	09/06/00	10/04/00	10/04/00
MERCURY, TOTAL	001 REP	S	00C0320	09/06/00	10/04/00	10/04/00
MERCURY, TOTAL	001 MS	S	00C0320	09/06/00	10/04/00	10/04/00
LEAD, TOTAL	001	S	99L1571	09/06/00	09/21/00	09/21/00
LEAD, TOTAL	001 REP	S	99L1571	09/06/00	09/21/00	09/21/00
LEAD, TOTAL	001 MS	S	99L1571	09/06/00	09/21/00	09/21/00
SELENIUM, TOTAL	001	S	99L1571	09/06/00	09/21/00	09/21/00
SELENIUM, TOTAL	001 REP	S	99L1571	09/06/00	09/21/00	09/21/00
SELENIUM, TOTAL	001 MS	S	99L1571	09/06/00	09/21/00	09/21/00

LAB QC:

SILVER LABORATORY	LC1 BS	S	99L1571	N/A	09/21/00	09/21/00
SILVER, TOTAL	MB1	S	99L1571	N/A	09/21/00	09/21/00
ARSENIC LABORATORY	LC1 BS	S	99L1571	N/A	09/21/00	09/21/00
ARSENIC, TOTAL	MB1	S	99L1571	N/A	09/21/00	09/21/00
BARIUM LABORATORY	LC1 BS	S	99L1571	N/A	09/21/00	09/21/00
BARIUM, TOTAL	MB1	S	99L1571	N/A	09/21/00	09/21/00
CADMIUM LABORATORY	LC1 BS	S	99L1571	N/A	09/21/00	09/21/00
CADMIUM, TOTAL	MB1	S	99L1571	N/A	09/21/00	09/21/00

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B00-068

DATE RECEIVED: 09/15/00

RFW LOT # :0009L624

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM LABORATORY	LC1 BS	S	99L1571	N/A	09/21/00	09/21/00
CHROMIUM, TOTAL	MB1	S	99L1571	N/A	09/21/00	09/21/00
MERCURY LABORATORY	LC1 BS	S	00C0320	N/A	10/04/00	10/04/00
MERCURY, TOTAL	MB1	S	00C0320	N/A	10/04/00	10/04/00
LEAD LABORATORY	LC1 BS	S	99L1571	N/A	09/21/00	09/21/00
LEAD, TOTAL	MB1	S	99L1571	N/A	09/21/00	09/21/00
SELENIUM LABORATORY	LC1 BS	S	99L1571	N/A	09/21/00	09/21/00
SELENIUM, TOTAL	MB1	S	99L1571	N/A	09/21/00	09/21/00

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B00-068-66		Page 1 of 1				
Collector FAHLBERG/		Company Contact Dave Weeks		Telephone No. 372-9524		Project Coordinator TRENT, SJ		Price Code 8L		Data Turnaround 21 Days			
Project Designation 200 Arca Groundwater Well Drilling Waste Designation for		Sampling Location 200 West		SAF No. B00-068		Air Quality <input type="checkbox"/>							
Ice Chest No. SMI 552 (20FL)		Field Logbook No. EL 1516		COA XL0008LMHC		Method of Shipment Fed EX							
Shipped To TM/RECRA		Offsite Property No. A000309			Bill of Lading/Air Bill No. 42357453-8090-9003 ^{PT-1400}								
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation		None	Cool 4C	Cool 4C	None	None			
				Type of Container		aG	aG	aG	aG	aG			
				No. of Container(s)		1	1	1	1	1			
				Volume		120mL	250mL	250mL	250mL	250mL			
Special Handling and/or Storage				IC Anions - 300.0 (Nitrate); Sulfides - 9030; Total Cyanide - 9010		Semi-VDA - 8270A (TCL); Semi-VDA - 8270A (Add-On) (m-Cross)		VOA - 8260A (TCL)		ICP Metals - 6010A (Supernatant); Mercury - 7471 - (CV)			
SAMPLE ANALYSIS				pH (Soil) - 9045									
Sample No.	Matrix *	Sample Date	Sample Time										
B105W2	SOIL	9.6.00	0845	X	X	X	X	X					
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *					
Relinquished By		Date/Time		Received By		Date/Time		<p>Tie to Box VP3</p> <p>Samples stored in Ref. # <u>02</u> at the 3728 Shipping Facility on <u>9/10/00</u> Collector of available to relinquish samples on <u>9/14/00</u> for shipment.</p> <p>9/14/00</p>					
R. Falber		9.6.00		Ref. Z.C		9.6.00							
R. Falber		9.6.00		R. Thoren		9.8.00							
3728 Bldg Ref 2C		9.14.00		R. Thoren		9.14.00							
R. Thoren		9.14.00		FED EX									
FED EX		9.15.00 0930		J. Kappel		9.15.00 0930							
LABORATORY SECTION		Received By		Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time					

**Recra LabNet Philadelphia
Analytical Report**

Client: TNU-HANFORD B00-068
RFW #: 0009L624
SDG/SAF #: H1034/B00-068

W.O. #: 10985-001-001-9999-00
Date Received: 09-15-2000

SEMIVOLATILE

One (1) soil sample was collected on 09-06-2000.

The sample and its associated QC samples were extracted on 09-18-2000 and analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 10-03-2000.

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 sample was extracted and analyzed within required holding times.
3. Non-target compounds were detected in the sample.
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 blanks spike recoveries were within EPA QC limits.
7. The method blank contained the common laboratory contaminant Di-n-butylphthalate at a level less than the CRQL.
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."



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

11-01-00
Date

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.



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.



Recra LabNet - Lionville Laboratory

Semivolatiles by GC/MS, HSL List

Report Date: 10/13/00 13:14

RFW Batch Number: 0009L624

Client: TNU-HANFORD B00-068

Work Order: 10985001001

Page: 1a

Cust ID:	B105W2	B105W2	B105W2	SBLKAX	SBLKAX BS	
Sample Information	RFW#: 001	001 MS	001 MSD	00LE1167-MB1	00LE1167-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	Nitrobenzene-d5	69 %	63 %	76 %	73 %	64 %
Recovery	2-Fluorobiphenyl	75 %	65 %	77 %	72 %	63 %
	Terphenyl-d14	98 %	80 %	89 %	84 %	79 %
	Phenol-d5	77 %	68 %	80 %	69 %	70 %
	2-Fluorophenol	88 %	79 %	90 %	83 %	80 %
	2,4,6-Tribromophenol	98 %	85 %	94 %	70 %	69 %
-----f1-----f1-----f1-----f1-----f1-----f1-----f1						
	Phenol	380 U	70 %	76 %	330 U	77 %
	bis(2-Chloroethyl) ether	380 U	370 U	370 U	330 U	330 U
	2-Chlorophenol	380 U	73 %	78 %	330 U	77 %
	1,3-Dichlorobenzene	380 U	370 U	370 U	330 U	330 U
	1,4-Dichlorobenzene	380 U	60 %	65 %	330 U	67 %
	1,2-Dichlorobenzene	380 U	370 U	370 U	330 U	330 U
	2-Methylphenol	380 U	370 U	370 U	330 U	330 U
	2,2'-oxybis(1-Chloropropane)	380 U	370 U	370 U	330 U	330 U
	3- and/or 4-Methylphenol	380 U	370 U	370 U	330 U	330 U
	N-Nitroso-di-n-propylamine	380 U	62 %	65 %	330 U	65 %
	Hexachloroethane	380 U	370 U	370 U	330 U	330 U
	Nitrobenzene	380 U	370 U	370 U	330 U	330 U
	Isophorone	380 U	370 U	370 U	330 U	330 U
	2-Nitrophenol	380 U	370 U	370 U	330 U	330 U
	2,4-Dimethylphenol	380 U	370 U	370 U	330 U	330 U
	bis(2-Chloroethoxy)methane	380 U	370 U	370 U	330 U	330 U
	2,4-Dichlorophenol	380 U	370 U	370 U	330 U	330 U
	1,2,4-Trichlorobenzene	380 U	64 %	71 %	330 U	68 %
	Naphthalene	380 U	370 U	370 U	330 U	330 U
	4-Chloroaniline	380 U	370 U	370 U	330 U	330 U
	Hexachlorobutadiene	380 U	370 U	370 U	330 U	330 U
	4-Chloro-3-methylphenol	380 U	81 %	86 %	330 U	76 %
	2-Methylnaphthalene	380 U	370 U	370 U	330 U	330 U
	Hexachlorocyclopentadiene	380 U	370 U	370 U	330 U	330 U
	2,4,6-Trichlorophenol	380 U	370 U	370 U	330 U	330 U
	2,4,5-Trichlorophenol	940 U	930 U	940 U	830 U	830 U

*= Outside of EPA CLP QC limits.

	Cust ID: B105W2		B105W2		B105W2		SBLKAX		SBLKAX BS	
RFW#:	001		001 MS		001 MSD		00LE1167-MB1		00LE1167-MB1	
2-Chloronaphthalene	380	U	370	U	370	U	330	U	330	U
2-Nitroaniline	940	U	930	U	940	U	830	U	830	U
Dimethylphthalate	380	U	370	U	370	U	330	U	330	U
Acenaphthylene	380	U	370	U	370	U	330	U	330	U
2,6-Dinitrotoluene	380	U	370	U	370	U	330	U	330	U
3-Nitroaniline	940	U	930	U	940	U	830	U	830	U
Acenaphthene	380	U	71	%	77	%	330	U	69	%
2,4-Dinitrophenol	940	U	930	U	940	U	830	U	830	U
4-Nitrophenol	940	U	110	%	120	* %	830	U	95	%
Dibenzofuran	380	U	370	U	370	U	330	U	330	U
2,4-Dinitrotoluene	380	U	71	%	77	%	330	U	66	%
Diethylphthalate	380	U	370	U	370	U	330	U	330	U
4-Chlorophenyl-phenylether	380	U	370	U	370	U	330	U	330	U
Fluorene	380	U	370	U	370	U	330	U	330	U
4-Nitroaniline	940	U	930	U	940	U	830	U	830	U
4,6-Dinitro-2-methylphenol	940	U	930	U	940	U	830	U	830	U
N-Nitrosodiphenylamine (1)	380	U	370	U	370	U	330	U	330	U
4-Bromophenyl-phenylether	380	U	370	U	370	U	330	U	330	U
Hexachlorobenzene	380	U	370	U	370	U	330	U	330	U
Pentachlorophenol	940	U	83	%	94	%	830	U	78	%
Phenanthrene	380	U	370	U	370	U	330	U	330	U
Anthracene	380	U	370	U	370	U	330	U	330	U
Carbazole	380	U	370	U	370	U	330	U	330	U
Di-n-butylphthalate	83	JB	44	JB	95	JB	26	J	59	JB
Fluoranthene	380	U	370	U	370	U	330	U	330	U
Pyrene	380	U	77	%	78	%	330	U	78	%
Butylbenzylphthalate	380	U	370	U	370	U	330	U	330	U
3,3'-Dichlorobenzidine	380	U	370	U	370	U	330	U	330	U
Benzo(a)anthracene	380	U	370	U	370	U	330	U	330	U
Chrysene	380	U	370	U	370	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	380	U	370	U	19	J	330	U	330	U
Di-n-octyl phthalate	380	U	370	U	370	U	330	U	330	U
Benzo(b)fluoranthene	380	U	370	U	370	U	330	U	330	U
Benzo(k)fluoranthene	380	U	370	U	370	U	330	U	330	U
Benzo(a)pyrene	380	U	370	U	370	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	380	U	370	U	370	U	330	U	330	U
Dibenz(a,h)anthracene	380	U	370	U	370	U	330	U	330	U
Benzo(g,h,i)perylene	380	U	370	U	370	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.

B105W2

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B00-068

Matrix: (soil/water) SOIL Lab Sample ID: 0009L624-001

Sample wt/vol: 30.2 (g/mL) G Lab File ID: A100308

Level: (low/med) LOW Date Received: 09/15/00

% Moisture: 12 decanted: (Y/N) Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/03/00

Injection Volume: 2.0 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH:

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

Number TICs found: 2

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.99	800	JAB
2.	UNKNOWN	22.86	80	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKAX

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B00-068

Matrix: (soil/water) SOIL Lab Sample ID: 00LE1167-MB1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A100306

Level: (low/med) LOW Date Received: 09/18/00

% Moisture: decanted: (Y/N) Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/03/00

Injection Volume: 2.0 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH:

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

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.99	600	JA

Recra LabNet - Lionville Laboratory
BNA ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B00-068

DATE RECEIVED: 09/15/00

RFW LOT # :0009L624

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B105W2	001	S	00LE1167	09/06/00	09/18/00	10/03/00
B105W2	001 MS	S	00LE1167	09/06/00	09/18/00	10/03/00
B105W2	001 MSD	S	00LE1167	09/06/00	09/18/00	10/03/00

LAB QC:

SBLKAX	MB1	S	00LE1167	N/A	09/18/00	10/03/00
SBLKAX	MB1 BS	S	00LE1167	N/A	09/18/00	10/03/00

RECRA LabNet Use Only

0009LL624

Custody Transfer Record/Lab Work Request Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS



Client <u>TNU-Hanford B00-068</u>		Refrigerator #		1	4					4	4	4																																												
Est. Final Proj. Sampling Date		#/Type Container		Liquid																																																				
Project # <u>10985-001-001-9999-00</u>				Solid	1PG	1PG				1PG	1PG	1PG																																												
Project Contact/Phone #		Volume		Liquid																																																				
RECRA Project Manager <u>AS</u>				Solid	250	250				250	120	120	250																																											
OC Spec Del <u>Std</u> TAT <u>21 day</u>		Preservatives			-	-				-	-	-																																												
Date Rec'd <u>9-15-00</u> Date Due <u>10-6-00</u>		ANALYSES REQUESTED		ORGANIC					INORG																																															
Account #				VOA	BNA	Pes/PCB	Herb			Metal	CN																																													
RECRA LabNet Use Only																																																								
<table border="1"> <thead> <tr> <th rowspan="2">MATRIX CODES: S - Soil SE - Sediments 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</th> <th rowspan="2">Lab ID</th> <th rowspan="2">Client ID/Description</th> <th colspan="2">Matrix OC Chosen (S)</th> <th rowspan="2">Matrix</th> <th rowspan="2">Date Collected</th> <th rowspan="2">Time Collected</th> <th colspan="8">RECRA LabNet Use Only</th> </tr> <tr> <th>MS</th> <th>MSD</th> <th>41204</th> <th>42504</th> <th>PCPATO</th> <th>ICNTO</th> <th>ICN03</th> <th>ISFD</th> <th>IPH</th> </tr> </thead> <tbody> <tr> <td></td> <td>001</td> <td>B10SLW2</td> <td>✓</td> <td>✓</td> <td>S</td> <td>9/15/00</td> <td>0845</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> <td></td> </tr> </tbody> </table>																MATRIX CODES: S - Soil SE - Sediments 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 OC Chosen (S)		Matrix	Date Collected	Time Collected	RECRA LabNet Use Only								MS	MSD	41204	42504	PCPATO	ICNTO	ICN03	ISFD	IPH		001	B10SLW2	✓	✓	S	9/15/00	0845	✓	✓	✓	✓	✓	✓		
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Special Instructions: Saf B00-068

DATE/REVISIONS:

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

RECRA LabNet Use Only

Samples were:	COC Tape was:
1) Shipped <input checked="" type="checkbox"/> or Hand Delivered _____	1) Present on Outer Package Y or <input checked="" type="checkbox"/> N
Airbill # <u>See below</u>	2) Unbroken on Outer Package Y or N
2) Ambient or <input checked="" type="checkbox"/> Chilled	3) Present on Sample <input checked="" type="checkbox"/> Y or N
3) Received in Good Condition <input checked="" type="checkbox"/> Y or N	4) Unbroken on Sample <input checked="" type="checkbox"/> Y or N
4) Labels Indicate Properly Preserved <input checked="" type="checkbox"/> Y or N	COC Record Present Upon Sample Rec't <input checked="" type="checkbox"/> Y or N
5) Received Within Holding Time <input checked="" type="checkbox"/> Y or N	Cooler Temp. <u>3.8</u> °C

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
<u>Errol Ex</u>	<u>J. Boppel</u>	<u>9-15-00</u>	<u>0930</u>	COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES: 423579539003

**Recra LabNet Philadelphia
Analytical Report**

Client: TNU-HANFORD B00-068
RFW #: 0009L624
SDG/SAF #: H1034/B00-068

W.O. #: 10985-001-001-9999-00
Date Received: 09-15-2000

GC/MS VOLATILE

One (1) soil sample was collected on 09-06-2000.

The sample and its associated QC samples were analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8260B for TCL Volatile target compounds on 09-18,19-2000.

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 analyzed within required holding time.
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 3x the CRQL.
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
Vice President
Philadelphia Analytical Laboratory

10/9/00
Date

som\group\data\voa\tnu-hanford-09-624.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 8 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.



Cust ID: B105W2 B105W2 B105W2 VBLKPT VBLKPT BS

RFW#: 001 001 MS 001 MSD 00LVN335-MB1 00LVN335-MB1

Chlorobenzene	6 U	116 %	116 %	5 U	115 %
Ethylbenzene	6 U	6 U	5 U	5 U	5 U
Styrene	6 U	6 U	5 U	5 U	5 U
Xylene (total)	6 U	6 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

Recra LabNet - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B00-068

DATE RECEIVED: 09/15/00

RFW LOT # :0009L624

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B105W2	001	S	00LVN335	09/06/00	N/A	09/18/00
B105W2	001 MS	S	00LVN335	09/06/00	N/A	09/18/00
B105W2	001 MSD	S	00LVN335	09/06/00	N/A	09/19/00

LAB QC:

VBLKPT	MB1	S	00LVN335	N/A	N/A	09/18/00
VBLKPT	MB1 BS	S	00LVN335	N/A	N/A	09/19/00

6

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B00-068-66		Page 1 of 1		
Collector FAHLBERG/		Company Contact Dave Weeks		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 <input type="checkbox"/>					
Ice Chest No. SM1 552 (20FL)		Field Logbook No. EL 1516		COA XL0008LMHC		Method of Shipment Fed EX					
Shipped To TM/RECRA		Offsite Property No. A000309			Bill of Lading/Air Bill No. 42357953 - 8090 4003						
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation	None	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	250mL	250mL	250mL	250mL		
Special Handling and/or Storage											
SAMPLE ANALYSIS				IC Anions - 300.0 (Nitrate); Sulfides - 9030; Total Cyanide - 9010	Semi-VOA - 8270A (TCL); Semi-VOA - 8270A (Add-On) (a-Crossol)	VOA - 8260A (TCL)	ICP Metals - 6010A (Supertrace); Mercury - 7471 - (CV)	pH (Soil) - 9045			
Sample No.	Matrix *	Sample Date	Sample Time								
B105W2	SOIL	9.6.00	0845	X	X	X	X	X			
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By R. Fahlberg 9.6.00		Date/Time 1000		Received By Stored in Ref. 2. C 9.6.00		Date/Time 1000		<p>Tie to Box UP3</p> <p>samples stored in Ref. ^{QC} at the 3728 Shipping Facility on 9.16.00 Collector or available to relinquish samples on 9.14.00 or shipment.</p> <p>9.14.00</p>			
Relinquished By 3728 bldg Ref. 2. C 9.14.00		Date/Time 0800		Received By R. Thoren 9-14-00		Date/Time 0800					
Relinquished By R. Thoren 9-14-00		Date/Time 0800		Received By Fed EX		Date/Time					
Relinquished By Fed EX 9.25.00 0930		Date/Time 0930		Received By TK Pappel 9.15.00 0930		Date/Time					
Relinquished By		Date/Time		Received By		Date/Time					
Relinquished By		Date/Time		Received By		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			