

0054702

H1169

RECEIVED
APR 02 2001

EDMC

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-073 H1169



DATE RECEIVED: 12/06/00

RFW LOT # :0012L491

CLIENT ID /ANALYSIS RFW # MTX PREP # COLLECTION EXTR/PREP ANALYSIS

B111B7

CHROMIUM, TOTAL	001		SO 99L1813	11/30/00	12/14/00	12/19/00
CHROMIUM, TOTAL	001 REP		SO 99L1813	11/30/00	12/14/00	12/19/00
CHROMIUM, TOTAL	001 MS		SO 99L1813	11/30/00	12/14/00	12/19/00
MERCURY, TOTAL	001		SO 00C0438	11/30/00	12/18/00	12/19/00
MERCURY, TOTAL	001 REP		SO 00C0438	11/30/00	12/18/00	12/19/00
MERCURY, TOTAL	001 MS		SO 00C0438	11/30/00	12/18/00	12/19/00

B11221

SILVER, TOTAL	002		SO 99L1813	11/30/00	12/14/00	12/19/00
ARSENIC, TOTAL	002		SO 99L1813	11/30/00	12/14/00	12/19/00
BARIUM, TOTAL	002		SO 99L1813	11/30/00	12/14/00	12/19/00
CADMIUM, TOTAL	002		SO 99L1813	11/30/00	12/14/00	12/19/00
CHROMIUM, TOTAL	002		SO 99L1813	11/30/00	12/14/00	12/19/00
MERCURY, TOTAL	002		SO 00C0438	11/30/00	12/18/00	12/19/00
LEAD, TOTAL	002		SO 99L1813	11/30/00	12/14/00	12/19/00
SELENIUM, TOTAL	002		SO 99L1813	11/30/00	12/14/00	12/19/00

B11222

SILVER, TOTAL	003		SO 99L1813	11/30/00	12/14/00	12/19/00
ARSENIC, TOTAL	003		SO 99L1813	11/30/00	12/14/00	12/19/00
BARIUM, TOTAL	003		SO 99L1813	11/30/00	12/14/00	12/19/00
CADMIUM, TOTAL	003		SO 99L1813	11/30/00	12/14/00	12/19/00
CHROMIUM, TOTAL	003		SO 99L1813	11/30/00	12/14/00	12/19/00
MERCURY, TOTAL	003		SO 00C0438	11/30/00	12/18/00	12/19/00
LEAD, TOTAL	003		SO 99L1813	11/30/00	12/14/00	12/19/00
SELENIUM, TOTAL	003		SO 99L1813	11/30/00	12/14/00	12/19/00

LAB QC:

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

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD B00-073 H1169

DATE RECEIVED: 12/06/00

RFW LOT # :0012L491

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
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
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 LabNet Philadelphia
Analytical Report**

Client: TNU-HANFORD B00-073
RFW#: 0012L491
SDG/SAF#: H1169/B00-073

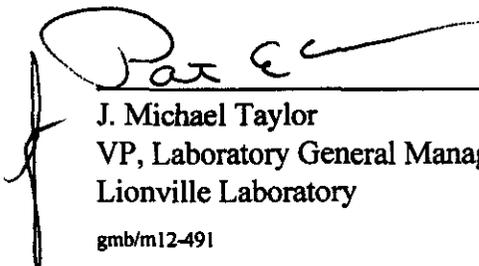
W.O.#: 10985-001-001-9999-00
Date Received: 12-06-00

METALS CASE NARRATIVE

1. This narrative covers the analyses of 3 soil samples.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. 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.
11. A serial dilution is performed for Mercury.

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 14 pages.

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.



J. Michael Taylor
VP, Laboratory General Manager
Lionville Laboratory
gmb/m12-491

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#: 0012L491

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 7041⁵ </u>	<u> 200.7 204.2 </u>			<u> 99 </u>
Arsenic	<u> 6010B 7060A⁵ </u>	<u> 200.7 206.2 </u>	<u> 3113B </u>		<u> 99 </u>
Barium	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Beryllium	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Bismuth	<u> 6010B¹ </u>	<u> 200.7¹ </u>		<u> 1620 </u>	<u> 99 </u>
Boron	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Cadmium	<u> 6010B 7131A⁵ </u>	<u> 200.7 213.2 </u>			<u> 99 </u>
Calcium	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Chromium	<u> 6010B 7191⁶ </u>	<u> 200.7 218.2 </u>			<u> SS17 </u>
Cobalt	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Copper	<u> 6010B 7211⁵ </u>	<u> 200.7 220.2 </u>			<u> 99 </u>
Iron	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Lead	<u> 6010B 7421⁵ </u>	<u> 200.7 239.2 </u>	<u> 3113B </u>		<u> 99 </u>
Lithium	<u> 6010B 7430⁴ </u>	<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> 7470A³ 7471A³ </u>	<u> 245.1² 245.5² </u>			<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 7610⁴ </u>	<u> 200.7 258.1⁴ </u>			<u> 99 </u>
Rare Earths	<u> 6010B¹ </u>	<u> 200.7¹ </u>		<u> 1620 </u>	<u> 99 </u>
Selenium	<u> 6010B 7740⁵ </u>	<u> 200.7 270.2 </u>	<u> 3113B </u>		<u> 99 </u>
Silicon	<u> 6010B¹ </u>	<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	<u> 6010B 7761⁵ </u>	<u> 200.7 272.2 </u>			<u> 99 </u>
Sodium	<u> 6010B 7770⁴ </u>	<u> 200.7 273.1⁴ </u>			<u> 99 </u>
Strontium	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Thallium	<u> 6010B 7841⁵ </u>	<u> 200.7 279.2 200.9 </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> 6010B¹ </u>	<u> 200.7¹ </u>		<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> 6010B¹ </u>	<u> 200.7¹ </u>		<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

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 01/03/01

CLIENT: TNUHANFORD B00-073 H1169
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0012L491

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
-001	B111B7	Chromium, Total	26.2	MG/KG	0.06	1.0
		Mercury, Total	0.47	MG/KG	0.02	1.0
-002	B11221	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	1.9	MG/KG	0.23	1.0
		Barium, Total	142	MG/KG	0.02	1.0
		Cadmium, Total	0.05	MG/KG	0.03	1.0
		Chromium, Total	18.0	MG/KG	0.06	1.0
		Mercury, Total	0.40	MG/KG	0.02	1.0
		Lead, Total	5.0	MG/KG	0.20	1.0
		Selenium, Total	0.32 u	MG/KG	0.32	1.0
-003	B11222	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Arsenic, Total	6.6	MG/KG	0.22	1.0
		Barium, Total	78.3	MG/KG	0.02	1.0
		Cadmium, Total	0.14	MG/KG	0.03	1.0
		Chromium, Total	7.3	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	2.6	MG/KG	0.20	1.0
		Selenium, Total	0.31 u	MG/KG	0.31	1.0

Recra LabNet - Lionville

INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/03/01

CLIENT: TNUHANFORD B00-073 H1169
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0012L491

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

Recra LabNet - Lionville

INORGANICS ACCURACY REPORT 01/03/01

CLIENT: TNUHANFORD B00-073 H1169
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0012L491

SAMPLE	SITE ID	ANALYTE	SPIKED	INITIAL	SPIKED		DILUTION
			SAMPLE	RESULT	AMOUNT	%RECOV	FACTOR (SPK)
-001	B111B7	Chromium, Total	41.6	26.2	19.9	77.4	1.0
		Mercury, Total	0.68	0.47	0.17	125.7	1.0

Recra LabNet - Lionville

INORGANICS PRECISION REPORT 01/03/01

CLIENT: TNUHANFORD B00-073 H1169
WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0012L491

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REP)
			RESULT	REPLICATE	RPD	
-001REP	B111B7	Chromium, Total	26.2	29.9	13.2	1.0
		Mercury, Total	0.47	0.43	10.0	1.0

Recra LabNet - Lionville

INORGANICS LABORATORY CONTROL STANDARDS REPORT 01/03/01

CLIENT: TNUHANFORD B00-073 H1169
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0012L491

SAMPLE	SITE ID	ANALYTE	SPIKED	SPIKED	UNITS	%RECOV
			SAMPLE	AMOUNT		
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

RECRA LabNet Use Only
0012L491

Custody Transfer Record/Lab Work Request Page 1 of 1



FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Tru-Hanford

A B

Client: <u>Hanford</u> <u>SAF B00-073</u>	Refrigerator #	<u>A</u>	<u>B</u>
Est. Final Proj. Sampling Date: <u>12-26-00</u>	#/Type Container	Liquid	
Project #: <u>10985-001-001-9999-00</u>		Solid	<u>1AC</u>
Project Contact/Phone #	Volume	Liquid	
RECRA Project Manager: <u>OS</u>		Solid	<u>125</u>
QC: <u>Spec</u> Del: <u>Std</u> TAT: <u>21 day</u>	Preservatives		
Date Rec'd: <u>12-26-00</u> Date Due: <u>12-27-00</u>	ANALYSES REQUESTED	ORGANIC	
Account #		VOA	INORG
		BNA	Metal
		Pest/PCB	CN
		Herb	

MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DB - Drum DL - Drum L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen		Matrix	Date Collected	Time Collected	RECRA LabNet Use Only												
			MS	MSD				OC24H	OC2EX	OC2BH	OC2CB	OC2TO	OC2GT0							
	001	B111B7			X	11/30/00	1015													
	002	B11221			L	1	0826	1	✓	✓										
	003	L222					0940	1	✓	✓										

Special Instructions: Saf B00-073
X = other Solid
Run Matrix QC

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

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

COC Tape was:
1) Present on Outer Package or N
2) Unbroken on Outer Package 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. 2.5 °C

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

Relinquished by	Received by	Date	Time
<u>FedEx</u>	<u>V Henry</u>	<u>12/26/00</u>	<u>0915</u>

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL		
	REWRITTEN		

12

00126491

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B00-073-005	Page 1 of 2
Collector Doug Bowers	Company Contact Jason Addler	Telephone No. 531-0703	Project Coordinator TRENT, SJ		Price Code 9L	Data Turnaround 21 Days	
Project Designation 100-D & 100-H Rx Waste Sampling - Other Solids		Sampling Location 100 D reactor	SAF No. B00-073	Air Quality <input type="checkbox"/>			
Ice Chest No. <i>Shipping van 9600 (left)</i>	Field Logbook No. EFL 1133-8	COA R105DG280C	Method of Shipment Fed Ex		Bill of Lading/Air Bill No. <i>42357463-0945</i>		
Shipped To TMA/RECR	Offsite Property No. <i>A010038</i>						
POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None					
	Type of Container	20					
	No. of Container(s)	1					
	Special Handling and/or Storage	Volume 60mL <i>B</i>					
SAMPLE ANALYSIS		ICP Metals - 6018A (Supertrace); Mercury - 7471 - (CV)					
Sample No.	Matrix *	Sample Date	Sample Time				
B111B7	OTHER SOLID	<i>11-30-00</i>	<i>1015</i>	X			<i>103-D 01162</i>
B111B8	OTHER SOLID						
B111B9	OTHER SOLID						
B111C0	OTHER SOLID						
B111C1	OTHER SOLID						
CHAIN OF POSSESSION			Sign/Print Names		SPECIAL INSTRUCTIONS		
Relinquished By <i>Doug Bowers</i> Date/Time <i>11-30-00/1415</i>			Received By <i>R. Thore</i> Date/Time <i>11/30/00</i>		SPECIAL INSTRUCTIONS ICP Supertrace metals report Total Cr only.		
Relinquished By <i>R. Thore</i> Date/Time <i>11/30/00</i>			Received By <i>stored in</i> Date/Time <i>11/30/00</i>				
Relinquished By <i>Removal from</i> Date/Time <i>0800</i>			Received By <i>R. Thore</i> Date/Time <i>0800</i>				
Relinquished By <i>R. Thore</i> Date/Time <i>12-4-00</i>			Received By <i>R. Thore</i> Date/Time <i>12-4-00</i>				
Relinquished By <i>R. Thore</i> Date/Time <i>12-4-00</i>			Received By <i>R. Thore</i> Date/Time <i>12-</i>				
Relinquished By <i>Fed Ex</i> Date/Time <i>12-5-00 10:00</i>			Received By <i>R. Thore</i> Date/Time <i>12-5-00</i>				
Relinquished By <i>Fed Ex</i> Date/Time <i>12/6/00 0915</i>			Received By <i>R. Thore</i> Date/Time <i>12/6/00 0915</i>		Matrix *		
LABORATORY SECTION	Received By						
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By					Date/Time

NETO

1

PT 2400

13

Recra LabNet - Lionville Laboratory
 PCB ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD B00-073 H1169

DATE RECEIVED: 12/06/00

RFW LOT # :0012L491

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B11221	002	SO	00LE1605	11/30/00	12/07/00	12/16/00
B11222	003	SO	00LE1605	11/30/00	12/07/00	12/16/00

LAB QC:

PBLKJX	MB1	S	00LE1605	N/A	12/07/00	12/12/00
PBLKJX	MB1 BS	S	00LE1605	N/A	12/07/00	12/12/00
PBLKJX	MB1 BSD	S	00LE1605	N/A	12/07/00	12/12/00

Handwritten: 01-03-01



**Recra LabNet Philadelphia
Analytical Report**

Client: TNU HANFORD B00-073
RFW#: 0012L491
SDG/SAF#: H1169/B00-073

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

PCB

The set of samples consisted of two (2) solid samples collected on 11-30-00.

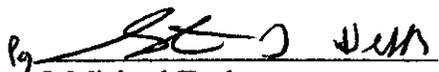
The samples and their associated QC samples were extracted on 12-07-00 and analyzed according to Recra OPs based on SW846, 3rd Edition procedures on 12-12,16-00. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082 for Aroclors only.

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

1. The cooler temperature has been recorded on the chain-of-custody.
2. All required holding times for extraction and analysis have been met.
3. The method blank was below the reporting limits for all target compounds.
4. Two (2) of ten (10) surrogate recoveries were outside QC limits; however, the surrogate recovery acceptance criteria were met (i.e., no more than one outlier per sample). Decachlorobiphenyl was diluted out in sample B11222, but was reported per client's instructions.
5. All blank spike recoveries were within acceptance criteria.
6. Due to insufficient sample volume, matrix spike QC could not be performed on any samples in this data set. However, blank spike QC were performed with these samples to demonstrate that systems were in control. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
7. Sample B11222 required a twenty-fold instrument dilution high concentrations of target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.
8. All initial calibrations associated with this data set were within acceptance criteria.

9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria, with the exception of the target compound Aroclor 1016 analyzed on 12-16-00 at 04:49:50 on the secondary column. The data reflected an increase in instrument response, so the ability to identify Aroclors was not impaired. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

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



J. Michael Taylor
VP, Laboratory General Manager
Lionville Laboratory

01-05-01
Date

pefr:\group\data\pest\12L-491.pcb



Initiator: M. Kibel Batch: 0012L491 Parameter: OPCB
 Date: 12/20/00 Samples: 002,003 Matrix: Soil
 Client: TNU Method: SWB46MCAWW/CLP/ Prep Batch: 00LE1605

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)
 AR1016 CCV before sample was increased @ 17% (QC limit = 215%) on the secondary column and the sample contains AR1254 @ 3.433 ug/ml (calculated from primary column). The CCV on primary column was within QC limits.

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

- Lack of Organization Other (Please explain): _____
 Lack of Training
 Lack of Discipline
 Lack of Resources
 Lack of Time
 Lack of Management Support

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)

Narrate

[Signature]
 12/20/00

4. Project Manager Instructions...signature/date:

- 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:

Other Explanation:

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

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

Route/Distribution of SDR

Route Distribution of Completed SDR

- Initiator
 Lab Manager: M. Taylor
 Project Mgr: Stone/Carey/Johnson
 Section Mgr: Wesson/Daniels
 QA (file): Schrenkel
 Data Management: Feldman
 Sample Prep: Bickel/Kauffman

- Metals: Doughty
 Inorganic: Perrone
 GC/LC: Pastor
 MS: Layman/Rycklak
 Log-in: Keppel
 Admin: Soos
 Other: _____

Initiator: Bernad Foley
Date: 12/7/00
Client: TW

Batch: 0012L491
Samples: 2,3
Method: SWB46/MCAWW/CLP/

Parameter: PAH/Lead/Cd/Cr
Matrix: S
Prep Batch: 1603/1605

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)

Insufficient Volume for QC

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

- Lack of Organization Other (Please explain):
- Lack of Training
- Lack of Discipline
- Lack of Resources
- Lack of Time
- Lack of Management Support

Client did not send enough Sample Volume.

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)

Johnson 12/10

4. Project Manager Instructions...signature/date:

- 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:

SE D JEM 01/30

Other Explanation:

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

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

Route/Distribution of SDR

Route

Distribution of Completed SDR

- Initiator
- Lab Manager: M. Taylor
- Project Mgr: Stone/Carey Johnson
- Section Mgr: Wesson/Daniels
- QA (file): Schrenkel
- Data Management: Feldman
- Sample Prep: Bickel/Kauffman

- Metals: Doughty
- Inorganic: Perrone
- GC/LC: Pastor
- MS: Layman/Rycklak
- Log-in: Keppel
- Admin: Soos
- Other: _____

GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



GLOSSARY OF PESTICIDE/PCB DATA

- P** = This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC/MS.



0012L491

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B00-073-005	Page 1 of 2
Collector Doug Bowers	Company Contact Jason Addler	Telephone No. 531-0703	Project Coordinator TRENT, SJ		Price Code 9L	Data Turnaround 21 Days	
Project Designation 100-D & 100-H Rx Waste Sampling - Other Solids		Sampling Location 100 D reactor	SAF No. B00-073	Air Quality <input type="checkbox"/>		10	
Ice Chest No. <i>Shipping van 9600 (lost)</i>	Field Logbook No. EFL 1133-8	COA R105DG280C	Method of Shipment Fed Ex				
Shipped To TMA/RECRA	Offsite Property No. <i>A-010038</i>	Bill of Lading/Air Bill No. <i>42357453-0945</i>					
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	None				
		Type of Container	aG				
		No. of Container(s)	1				
Special Handling and/or Storage		Volume	60mL <i>B</i>				
SAMPLE ANALYSIS		ICP Metals - 6010A (Supertrace); Mercury - 7471 - (CV)					
Sample No.	Matrix *	Sample Date	Sample Time				
B111B7	OTHER SOLID	11-30-00	1015	X		100-D	01162
B111B8	OTHER SOLID						
B111B9	OTHER SOLID						
B111C0	OTHER SOLID						
B111C1	OTHER SOLID						
CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS			Matrix *
Relinquished By <i>Doug Bowers</i>	Date/Time 11-30-00/1415	Received By <i>R. Thoren</i>	Date/Time 11/30/00	ICP Supertrace metals report Total Cr only.			S - Soil
Relinquished By <i>R. Thoren</i>	Date/Time 11/30/00	Received By <i>stored in</i>	Date/Time 11/30/00				SE - Sediment
Relinquished By <i>Removed from</i>	Date/Time 12-4-00	Received By <i>R. Thoren</i>	Date/Time 12-4-00				SO - Solid
Relinquished By <i>R. Thoren</i>	Date/Time 12-4-00	Received By <i>FEOLUP</i>	Date/Time 12-				S - Sludge
Relinquished By <i>Fed Ex</i>	Date/Time 12-5-00 10:00	Received By <i>R. Thoren</i>	Date/Time 12-5-00				W - Water
Relinquished By <i>Fed Ex</i>	Date/Time 12/6/00 0915	Received By <i>V. Kennedy</i>	Date/Time 12/6/00 0915				O - Oil
LABORATORY SECTION	Received By	Title		Date/Time			A - Air
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By		Date/Time			DS - Drum Solids

00126 491

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B00-073-006	Page 1 of 1
Collector Doug Bowers		Company Contact Jason Addler		Telephone No. 531-0703		Project Coordinator TRENT, SJ	
Project Designation 100-D & 100-H Rx Waste Sampling - Other Solids		Sampling Location 100 D reactor		SAF No. B00-073		Price Code 9L Data Turnaround 21 Days	
Ice Chest No. SHIPPING Van 96001 (10A)		Field Logbook No. EFL 1133-8		COA R105DG280C		Method of Shipment Fed Ex	
Shipped To TMA/ECRA		Offsite Property No. A010038		Bill of Lading/Air Bill No. 42357953.0945			
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation	None	Cool 4C	
Special Handling and/or Storage				Type of Container	aG	aG	
				No. of Container(s)	1 X 2	1 X 2	ARR 12-5-00
				Volume	60ml.	125ml.	
SAMPLE ANALYSIS				ICP Metals - 6010A (Supertrace); Mercury - 7471 - (CV)	See item (1) in Special Instructions.		
				B	A		Tie TO
Sample No.	Matrix *	Sample Date	Sample Time				
2 ✓ B11221	OTHER SOLID	11-30-00	0826	X	X		221a B11004
3 ✓ B11222	OTHER SOLID	11-30-00	0940	X	X		221a B11005
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS			Matrix *
Relinquished By Doug Bowers		Date/Time 11-30-00/1415		Received By R. Thore		Date/Time 11/30/00	
Relinquished By R. Thore		Date/Time 11/30/00/1445		Received By R. Thore		Date/Time 11/30/00	
Relinquished By R. Thore		Date/Time 11/30/00/1445		Received By R. Thore		Date/Time 11/30/00	
Relinquished By R. Thore		Date/Time 12-4-00/0800		Received By R. Thore		Date/Time 12-4-00	
Relinquished By R. Thore		Date/Time 12-4-00/0800		Received By FED EX		Date/Time	
Relinquished By Fed Ex		Date/Time 12-5-00/10:00		Received By J. P. Cover		Date/Time 12-5-00	
Relinquished By J. P. Cover		Date/Time 12-5-00/16:00		Received By Fed Ex		Date/Time	
LABORATORY SECTION	Received By	Date/Time		Title			Date/Time
	Fed Ex	12-6-00 0915		J. P. Cover			12-6-00 0915
FINAL SAMPLE DISPOSITION	Disposal Method				Disposed By		Date/Time

Figure 1. Sample Check-in List

Date/Time Received: 12-6-00 0915

SDG#: 0012L491

Work Order Number: _____

SAF# B00-073

Shipping Container ID: _____

Chain of Custody # _____

- 1. Custody Seals on shipping container intact? Yes No
- 2. Custody Seals dated and signed? Yes No
- 3. Chain-of-Custody record present? Yes No
- 4. Cooler temperature 2.5
- 5. Vermiculite/packing materials is Wet Dry
- 6. Number of samples in shipping container: 5
- 7. Sample holding times exceeded? Yes No

<p>8. Samples have:</p> <p>_____ tape _____ hazard labels</p> <p><input checked="" type="checkbox"/> custody seals _____ appropriate sample labels</p>
<p>9. Samples are:</p> <p><input checked="" type="checkbox"/> in good condition _____ leaking</p> <p>_____ broken _____ have air bubbles</p>

10. Were any anomalies identified in sample receipt? Yes No

11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Vicki Hamby Recra Date: 12-6-00

Telephoned to: _____ On _____ By _____

ERC Radiological Counting Facility Analysis Report

RCF Number RCF8713

Sample Date & Time 11/30/00 1015

Project ID: 105D SAF Number: B01-023

Date Analyzed 12/1/00 12:31:

Sample ID: B111C2

Gamma Energy Analysis

Nuclide	Activity (pCi/g)	Error (pCi/g)	MDC (pCi/g)
K-40	< 8.9E+00		8.9E+00
Co-60	< 9.7E-01		9.7E-01
Cs-137	< 8.1E-01		8.1E-01
Eu-152	< 2.6E+00		2.6E+00
Eu-154	< 2.4E+00		2.4E+00
Eu-155	< 1.7E+00		1.7E+00
Tl-208	< 2.1E+00		2.1E+00
Pb-212	< 9.0E-01		9.0E-01
Bi-214	< 4.4E+00		4.4E+00
Pb-214	< 1.6E+00		1.6E+00
Ra-226	< 1.4E+01		1.4E+01
Ac-228	< 3.2E+00		3.2E+00
Pa-234	< 1.3E+00		1.3E+00
Th-234	< 7.0E+00		7.0E+00
U-235	< 3.4E+00		3.4E+00
Am-241	< 8.3E-01		8.3E-01

49-1
TIE TO
B111B7

Total GEA (pCi/g) +/-

	Activity (pCi/g)	Error (pCi/g)
Gross Alpha**	8.3E-01	+/- 4.2E-01
Gross Beta	1.3E+01	+/- 1.3E+00

Alpha MDC (pCi/g) 4.0E-01	Beta MDC (pCi/g) 7.2E+00
------------------------------	-----------------------------

Definitions:

All errors reported at 2 standard deviations.
 N/R = no result or analysis not requested. <MDC = Less than detection limit.
 All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
 Rounding error may result in the reported total GEA activity differing from the sum of the > MDC (GEA values in the second significant digit).

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
 The analysis of Np-237 is based on the activity of Pa-233.
 U-238dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
 Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
 Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuramics and daughter products. The results must then be balanced for the gross alpha analysis.
 **The gross alpha results are not corrected for mass absorption
 # No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst G. U. Hastings 12/1/00

Report To
 JCI ADLER
 Joan Kexner
 Fax
 373-7719
 372 9487

ERC Radiological Counting Facility Analysis Report

RCF Number RCF8711

Sample Date & Time 11/30/00 0826

Project ID: 105D

SAF Number: B01-023

Date Analyzed 12/1/00 10:41:

Sample ID: B110D4

Gamma Energy Analysis

Nuclide	Activity (pCi/g)	Error (pCi/g)	MDC (pCi/g)
K-40	< 1.4E+01		1.4E+01
Co-60	< 1.4E+00		1.4E+00
Cs-137	< 7.7E-01		7.7E-01
Eu-152	< 2.9E+00		2.9E+00
Eu-154	< 3.5E+00		3.5E+00
Eu-155	< 2.2E+00		2.2E+00
Tl-208	< 2.3E+00		2.3E+00
Pb-212	< 1.5E+00		1.5E+00
Pb-214	< 1.6E+00		1.6E+00
Bi-214	< 6.6E+00		6.6E+00
Ra-226	< 1.4E+01		1.4E+01
Ac-228	< 3.9E+00		3.9E+00
Pa-234	< 1.7E+00		1.7E+00
Th-234	< 9.9E+00		9.9E+00
U-235	< 4.5E+00		4.5E+00
Am-241	< 1.2E+00		1.2E+00

TIE TO
B11221
491-2

Total GEA (pCi/g) +/-

	Activity (pCi/g)	Error (pCi/g)
Gross Alpha**	1.3E+00	+/- 4.8E-01
Gross Beta	1.2E+01	+/- 1.2E+00

Alpha MDC (pCi/g) 5.6E-01

Beta MDC (pCi/g) 6.7E+00

Definitions:

All errors reported at 2 standard deviations.
 N/R = no result or analysis not requested. <MDC = Less than detection limit.
 All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
 Rounding error may result in the reported total GEA activity differing from the sum of the > MDC GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
 The analysis of Np-237 is based on the activity of Pa-233.
 U-238dec is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
 Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
 Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.

**The gross alpha results are not corrected for mass absorption
 # No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst


 G. L. Harbins 12/1/00

Report To
 JG ADLER
 Joan Kessler

Fax
 373-7719
 372-9487

ERC Radiological Counting Facility Analysis Report

RCF Number RCF8712

Sample Date & Time 11/30/00 0940

Project ID: 105D

SAF Number: B01-023

Date Analyzed 12/1/00 11:44:

Sample ID: B110D5

Gamma Energy Analysis

Nuclide	Activity (pCi/g)	Error (pCi/g)	MDC (pCi/g)
K-40	< 8.2E+00		8.2E+00
Co-60	< 8.4E-01		8.4E-01
Cs-137	< 1.1E+00		1.1E+00
Eu-152	< 1.7E+00		1.7E+00
Eu-154	< 2.2E+00		2.2E+00
Eu-155	< 1.8E+00		1.8E+00
Tl-208	< 2.1E+00		2.1E+00
Pb-212	< 1.1E+00		1.1E+00
Bi-214	< 3.7E+00		3.7E+00
Pb-214	< 1.6E+00		1.6E+00
Ra-226	< 1.4E+01		1.4E+01
Ac-228	< 3.0E+00		3.0E+00
Pa-234	< 1.1E+00		1.1E+00
Th-234	< 8.0E+00		8.0E+00
U-235	< 5.0E+00		5.0E+00
Am-241	< 1.1E+00		1.1E+00

T12T0
B11222

491-3

Total GEA (pCi/g) +/-

	Activity (pCi/g)	Error (pCi/g)
Gross Alpha**	1.2E+00	+/- 4.4E-01
Gross Beta	1.4E+01	+/- 1.2E+00

Alpha MDC (pCi/g) 5.2E-01

Beta MDC (pCi/g) 7.7E+00

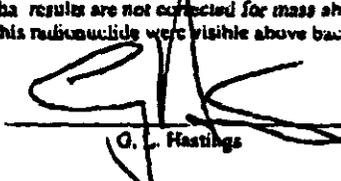
Definitions:

All errors reported at 2 standard deviations.
 N/R = no result or analysis not requested. <MDC = Less than detection limit.
 All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
 Rounding error may result in the reported total GEA activity differing from the sum of the > MDC GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
 The analysis of Np-237 is based on the activity of Pa-233.
 U-238 dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
 Th-232 dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
 Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
 **The gross alpha results are not corrected for mass absorption.
 # No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst


 G. L. Hastings

12/1/00

Report To
 JG ADLER
 Joan Kessner

Fax
 373-7719
 372-9487

Recra LabNet - Lionville Laboratory
 PEST/PCB ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD B00-073 H1169

DATE RECEIVED: 12/06/00

RFW LOT # :0012L491

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B11221	002	SO	00LE1605	11/30/00	12/07/00	12/19/00
B11222	003	SO	00LE1605	11/30/00	12/07/00	12/19/00

LAB QC:

PBLKJX	MB1	S	00LE1605	N/A	12/07/00	12/16/00
PBLKJX	MB1 BS	S	00LE1605	N/A	12/07/00	12/16/00
PBLKJX	MB1 BSD	S	00LE1605	N/A	12/07/00	12/16/00

01-03-01



**Recra LabNet Philadelphia
Analytical Report**

Client: TNU HANFORD B00-073
RFW#: 0012L491
SDG/SAF#: H1169/B00-073

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

PESTICIDE

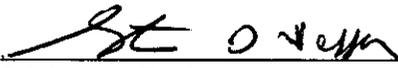
The set of samples consisted of two (2) solid samples collected on 11-30-00.

The samples and their associated QC samples were extracted on 12-07-00 and analyzed according to Recra OPs based on SW846, 3rd Edition procedures on 12-16,19-00. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8081.

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

1. The cooler temperature has been recorded on the chain-of-custody.
2. All required holding times for extraction and analysis have been met.
3. The method blank was below the reporting limits for all target compounds.
4. One (1) of ten (10) surrogate recoveries were outside QC limits; however, the surrogate recovery acceptance criteria were met (i.e., no more than one outlier per sample). Decachlorobiphenyl was diluted out in sample B11222, but was reported per client's instructions.
5. All blank spike recoveries were within acceptance criteria.
6. Due to insufficient sample volume, matrix spike QC could not be performed on any samples in this data set. However, blank spike QC were performed with these samples to demonstrate that systems were in control. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
7. Both samples required instrument dilutions due to high concentrations of target and non-target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

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.

g) 
J. Michael Taylor
VP, Laboratory General Manager
Lionville Laboratory

01-05-01
Date

pef/r:\group\data\pest\12L-491.pes



RECRA

Sample Discrepancy Report (SDR)

SDR #: COEX 190

Initiator: Bernad Foley

Batch: 00122491

Parameter: As⁵ B¹W¹W¹As⁵

Date: 12/1/00

Samples: 2,3

Matrix: S

Client: TW

Method: SW846MCAWW/CLP/

Prep Batch: 1603/1605

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)

Insufficient Volume for QC

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

- Lack of Organization Other (Please explain):
- Lack of Training
- Lack of Discipline
- Lack of Resources
- Lack of Time
- Lack of Management Support

Client did not send enough Sample Volume.

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)

[Signature] 12/1/00

4. Project Manager Instructions...signature/date:

- 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:

Other Explanation:

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

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

Route/Distribution of SDR

Route

Distribution of Completed SDR

- Initiator
- Lab Manager: M. Taylor
- Project Mgr: Stones/Carey/Johnson
- Section Mgr: Wesson/Daniels
- QA (file): Schrenkel
- Data Management: Feldman
- Sample Prep: Bickel/Kauffman

- Metals: Doughty
- Inorganic: Perrone
- GC/LC: Pastor
- MS: Layman/Rycklak
- Log-in: Keppel
- Admin: Soos
- Other: _____

GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



GLOSSARY OF PESTICIDE/PCB DATA

- P** = This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC/MS.

RFW #21-21-035/A-03/97



RECRA LabNet Use Only
00122491

Custody Transfer Record/Lab Work Request Page 1 of 1



FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

9 ^{met} Dig BNA

TRU-Hansford

Client <u>Hansford</u>	Refrigerator # <u>A</u>	<u>5</u>
Est. Final Proj. Sampling Date <u>12-6-00</u>	#/Type Container	Liquid
Project # <u>10985-001-001-9999-00</u>		Solid <u>IAC</u>
Project Contact/Phone #	Volume	Liquid
RECRA Project Manager <u>OS</u>		Solid <u>125</u>
QC <u>Spec</u> Del <u>Std</u> TAT <u>21 day</u>	Preservatives	<u>60</u>
Date Rec'd <u>12-6-00</u> Date Due <u>12-27-00</u>	ANALYSES REQUESTED	ORGANIC
Account #		INORG
		Metal CN
		↓ RECRA LabNet Use Only ↓

MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	RECRA LabNet Use Only						
			MS	MSD				OC25H	OC25K	OC25H	OC25K	OC25H	OC25K	
	001	B 111 B7			X	11/30/00	1015							
	002	B 11 221			L	1	0826	1	✓	✓				
	003	L 222			L	1	0940	1	✓	✓				

Special Instructions: Saf 300-073
X = other solid
Run Matrix QC

DATE/REVISIONS:
12:29:00 1:02:00: AS Ba Cd Pb Se Ag (SDR007M17)
1:3:01 2:02:5X corrected / OC25H added
3. _____
4. _____
5. _____
6. _____

RECRA LabNet Use Only

Samples were: 1) Shipped or Hand Delivered
Airbill Below

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

COC Tape was: 1) Present on Outer Package or N
2) Unbroken on Outer Package 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. 2.5 °C

Relinquished by	Received by	Date	Time
<u>FedEx</u>	<u>V Henry</u>	<u>12/6/00</u>	<u>0915</u>

Relinquished by	Received by	Date	Time
<u>COMPOSITE WASTE</u>	<u>ORIGINAL REWRITTEN</u>		

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

0012L491

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B00-073-005		Page 1 of 2					
Collector Doug Bowers		Company Contact Jason Addler		Telephone No. 531-0703		Project Coordinator TRENT, SJ		Price Code 9L Data Turnaround 21 Days					
Project Designation 100-D & 100-H Rx Waste Sampling - Other Solids		Sampling Location 100 D reactor		SAF No. B00-073		Air Quality <input type="checkbox"/>							
Ice Chest No. <i>Shipping van 96-00 (lot 1)</i>		Field Logbook No. EFL 1133-8		COA R105DG280C		Method of Shipment Fed Ex							
Shipped To TMA/RECRA		Offsite Property No. <i>A010038</i>				Bill of Lading/Air Bill No. <i>42357453-0945</i>							
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation	None								
				Type of Container	aG								
				No. of Container(s)	1								
				Volume	60mL <i>B</i>								
Special Handling and/or Storage													
SAMPLE ANALYSIS				ICP Metals - 6010A (Supertrace); Mercury - 7471 - (CV)									
Sample No.		Matrix *		Sample Date		Sample Time							
B111B7		OTHER SOLID		11-30-00		1015		X					
B111B8		OTHER SOLID											
B111B9		OTHER SOLID											
B111C0		OTHER SOLID											
B111E1		OTHER SOLID											
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS					
Relinquished By <i>Doug Bowers</i>		Date/Time 11-30-00/1415		Received By <i>R. Thoren</i>		Date/Time 11/30/00		ICP Supertrace metals report Total Cr only.					
Relinquished By <i>R. Thoren</i>		Date/Time 11/30/00		Received By <i>stored in</i>		Date/Time 11/30/00							
Relinquished By <i>PT 240 Ref 2A 3728</i>		Date/Time 12-4-00		Received By <i>R. Thoren</i>		Date/Time 12-4-00							
Relinquished By <i>R. Thoren</i>		Date/Time 12-4-00		Received By <i>FE04P</i>		Date/Time 12-4-00							
Relinquished By <i>Fed Ex</i>		Date/Time 12-5-00 10:00		Received By <i>R. Thoren</i>		Date/Time 12-5-00							
Relinquished By <i>Fed Ex</i>		Date/Time 12/6/00 0915		Received By <i>R. Thoren</i>		Date/Time 12/6/00 0915							
LABORATORY SECTION		Received By		Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time			

NETO

1 ✓

11-30-00

PT 240 Ref 2A 3728

- Matrix *
- S=Soil
 - SE=Soil/Screen
 - SO=Soil
 - S=Sludge
 - W=Water
 - O=Oil
 - A=Air
 - DS=Dry Solids
 - DL=Dry Liquids
 - T=Tissue
 - WI=Wipe
 - L=Liquid
 - V=Vegetation
 - X=Other

00126 491

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B00-073-006	Page 1 of 1
Collector Doug Dowers	Company Contact Jason Addler	Telephone No. 531-0703	Project Coordinator TRENT, SJ		Price Code 9L	Data Turnaround 21 Days	
Project Designation 100-D & 100-H Rx Waste Sampling - Other Solids		Sampling Location 100 D reactor	SAF No. B00-073	Air Quality <input type="checkbox"/>			
Ice Chest No. Shipping Van 96001 (10A)	Field Logbook No. EFL 1133-8	COA R105DG280C	Method of Shipment Fed Ex		10		
Shipped To TMA/ECRA	Offsite Property No. A010038		Bill of Lading/Air Bill No. 42357953.0945				
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation	None	Cool 4C	
Special Handling and/or Storage				Type of Container	2G	2G	
				No. of Container(s)	1 X 2	1 X 2	12.5.00
				Volume	60mL	125mL	
SAMPLE ANALYSIS				ICP Metals - 6010A (Supernatant); Mercury - 7471 - (CV)	See item (1) in Special Instructions.		
				B	A		Tier 10
Sample No.	Matrix *	Sample Date	Sample Time				
2 ✓ B11221	OTHER SOLID	11-30-00	0826	X	X		11/04
3 ✓ B11222	OTHER SOLID	11-30-00	0940	X	X		11/05
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS			Matrix *
Relinquished By [Signature] Date/Time 11/30/00 14:15		Received By [Signature] Date/Time 11/30/00 14:45		(1) VOA - 8260A (TCL); Semi-VOA - 8270A (TCL); Pesticides - 8081; PCBs - 8082			S=Soil SE=Soil/Screen SD=Soil S=Sludge W=Water O=Oil A=Air DS=Dry Solid DL=Dry Liquid T=Trash WT=Wipe L=Liquid V=Vegetation X=Other
Relinquished By [Signature] Date/Time 11/30/00 14:45		Received By [Signature] Date/Time 11/30/00 14:45					
Relinquished By [Signature] Date/Time 11/30/00 12:40		Received By [Signature] Date/Time 11/30/00 12:40					
Relinquished By [Signature] Date/Time 12/4/00 08:00		Received By [Signature] Date/Time 12/4/00 08:00					
Relinquished By [Signature] Date/Time 12/5/00 10:00		Received By [Signature] Date/Time 12/5/00 10:00					
Relinquished By [Signature] Date/Time 12/5/00 15:00		Received By [Signature] Date/Time 12/5/00 15:00					
Relinquished By [Signature] Date/Time 12/6/00 09:15		Received By [Signature] Date/Time 12/6/00 09:15					
LABORATORY SECTION	Disposal Method		Disposed By			Date/Time	

Figure 1. Sample Check-in List

Date/Time Received: 12-6-00 0915

SDG#: 0012L491

Work Order Number: _____

SAF# B00-073

Shipping Container ID: _____

Chain of Custody # _____

1. Custody Seals on shipping container intact? Yes No
2. Custody Seals dated and signed? Yes No
3. Chain-of-Custody record present? Yes No
4. Cooler temperature 2.5 _____
5. Vermiculite/packing materials is Wet Dry
6. Number of samples in shipping container: 5 _____
7. Sample holding times exceeded? Yes No

8. Samples have: _____ tape _____ hazard labels _____ custody seals _____ appropriate sample labels
9. Samples are: _____ in good condition _____ leaking _____ broken _____ have air bubbles

10. Were any anomalies identified in sample receipt? Yes No

11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Ved Henry Beera Date: 12-6-00

Telephoned to: _____ On _____ By _____

ERC Radiological Counting Facility Analysis Report

RCF Number RCF8711

Sample Date & Time 11/30/00 0826

Project ID: 105D

SAF Number: B01-023

Date Analyzed 12/1/00 10:41:

Sample ID: B110D4

Gamma Energy Analysis

Nuclide	Activity (pCi/g)	Error (pCi/g)	MDC (pCi/g)
K-40	< 1.4E+01		1.4E+01
Co-60	< 1.4E+00		1.4E+00
Cs-137	< 7.7E-01		7.7E-01
Eu-152	< 2.9E+00		2.9E+00
Eu-154	< 3.5E+00		3.5E+00
Eu-155	< 2.2E+00		2.2E+00
Tl-208	< 2.3E+00		2.3E+00
Pb-212	< 1.5E+00		1.5E+00
Pb-214	< 1.6E+00		1.6E+00
Bi-214	< 6.6E+00		6.6E+00
Ra-226	< 1.4E+01		1.4E+01
Ac-228	< 3.9E+00		3.9E+00
Pa-234	< 1.7E+00		1.7E+00
Th-234	< 9.9E+00		9.9E+00
U-235	< 4.5E+00		4.5E+00
Am-241	< 1.2E+00		1.2E+00

Tieto
B11221
491-2

Total GEA (pCi/g)	Activity (pCi/g)	Error (pCi/g)
	1.3E+00	4.8E-01
Gross Alpha**	1.2E+01	1.2E+00
Gross Beta		

Alpha MDC (pCi/g) 5.6E-01	Beta MDC (pCi/g) 6.7E+00
------------------------------	-----------------------------

Definitions:

All errors reported at 2 standard deviations.
 N/R = no result or analysis not requested. <MDC = Less than detection limit.
 All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
 Rounding error may result in the reported total GEA activity differing from the sum of the > MDC GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
 The analysis of Np-237 is based on the activity of Pa-233.
 U-238daa is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
 Th-232daa is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
 Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
 **The gross alpha results are not corrected for mass absorption
 # No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst

 12/1/00
G. L. Hastings

Report To
JG ADLER
Joan Kessler

Fax
373-7719
372-9487

ERC Radiological Counting Facility Analysis Report

RCF Number RCF8712

Sample Date & Time 11/30/00 0940

Project ID: 105D

SAF Number: B01-023

Date Analyzed 12/1/00 11:44:

Sample ID: B110D5

Gamma Energy Analysis

Nuclide	Activity (pCi/g)	Error (pCi/g)	MDC (pCi/g)
K-40	< 8.2E+00		8.2E+00
Co-60	< 8.4E-01		8.4E-01
Cs-137	< 1.1E+00		1.1E+00
Eu-152	< 1.7E+00		1.7E+00
Eu-154	< 2.2E+00		2.2E+00
Eu-155	< 1.8E+00		1.8E+00
Tl-208	< 2.1E+00		2.1E+00
Pb-212	< 1.1E+00		1.1E+00
Bi-214	< 3.7E+00		3.7E+00
Pb-214	< 1.6E+00		1.6E+00
Ra-226	< 1.4E+01		1.4E+01
Ac-228	< 3.0E+00		3.0E+00
Pa-234	< 1.1E+00		1.1E+00
Th-234	< 8.0E+00		8.0E+00
U-235	< 5.0E+00		5.0E+00
Am-241	< 1.1E+00		1.1E+00

T12T0
B11222

491-3

Total GEA (pCi/g) +/-

	Activity (pCi/g)	Error (pCi/g)
Gross Alpha**	1.2E+00	+/- 4.4E-01
Gross Beta	1.4E+01	+/- 1.2E+00

Alpha MDC (pCi/g) 5.2E-01

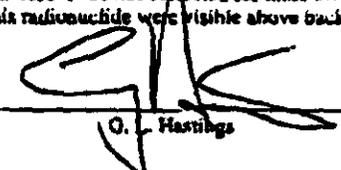
Beta MDC (pCi/g) 7.7E+00

Definitions:

All errors reported at 2 standard deviations.
 N/R = no result or analysis not requested. <MDC = Less than detection limit.
 All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
 Rounding error may result in the reported total (GEA) activity differing from the sum of the > MDC GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
 The analysis of Np-237 is based on the activity of Pa-233.
 U-238dec is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
 Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
 Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
 **The gross alpha results are not corrected for mass absorption.
 # No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst  12/1/00
 O. Hastings

Report To JG ADLER Fax 373-7719
 John Keisner 372-9487

Recra LabNet - Lionville Laboratory
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-073 H1169

DATE RECEIVED: 12/06/00

RFW LOT # :0012L491

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B11221	002	SO	00LE1603	11/30/00	12/07/00	12/29/00
B11222	003	SO	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





Chemical and Environmental Measurement Information
Recra LabNet Philadelphia
Analytical Report

Client: TNU-HANFORD B00-073
RFW #: 0012L491
SDG/SAF #: H1169/B00-073

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

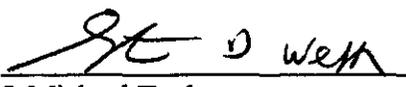
SEMIVOLATILE

Two (2) solid samples were collected on 11-30-2000.

The samples and their 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 12-10,28,29-2000.

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 not detected in the samples.
4. Sample B11221 required a 25-fold dilution due to dark and viscous nature of the extract.
5. Two (2) of twenty-two (22) obtainable surrogate recoveries were outside acceptance criteria. Insufficient sample volume remained to perform re-extraction and reanalysis. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
6. All blank spike recoveries were within EPA QC limits.
7. The matrix spike analyses were not performed due to insufficient sample volume. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
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-12-491.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 12 pages.

RECRA

Sample Discrepancy Report (SDR)

SDR #: 01MS02

Initiator: John W. Smith Batch: 0012491 Parameter: BWA
 Date: 1/13/01 Samples: 003 Matrix: Soil
 Client: Two Harbors Method: SW846/MCAWW/CLPI Prep Batch: 0021603
60-075 H1169

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)

Nitrobenzene - d5 C1090 in sample - 003 - ~~later surrogate was target compute~~
met criteria on 1/3/01

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

- Lack of Organization Other (Please explain): _____
- Lack of Training
- Lack of Discipline
- Lack of Resources
- Lack of Time
- Lack of Management Support

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)

1. Report + Narrate
2. report TCL List
3. Login change 0625X to 0625HB

4. Project Manager Instructions...signature/date: Michael Johnson 1/3/01

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

5. Final Action...signature/date: [Signature] 1-16-01 Other Explanation:

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

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

Route/Distribution of SDR

- Initiator
- Lab Manager: M. Taylor
- Project Mgr: Stone/Carey/Johnson
- Section Mgr: Wesson/Dantels
- QA (file): Schrenkel
- Data Management: Feldman
- Sample Prep: Bickel/Kauffman

Route Distribution of Completed SDR

- Metals: Doughty
- Inorganic: Perrone
- GC/LC: Pastor
- MS: Layman/Rycklak
- Log-in: Keppel
- Admin: Soos
- Other: _____

RECRA

Sample Discrepancy Report (SDR)

SDR #: COEX190

Initiator: Bernad Foley

Batch: 00122491

Parameter: Asst. ⁵²¹² ~~BN/AN/AS~~

Date: 12/7/00

Samples: 23

Matrix: S

Client: TW

Method: SW846/MCAWW/ICLP/

Prep Batch: 1603/1605

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)

Insufficient Volume for QC

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

- Lack of Organization Other (Please explain):
- Lack of Training
- Lack of Discipline
- Lack of Resources
- Lack of Time
- Lack of Management Support

Client did not send enough Sample Volume.

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)

[Signature] 12/7/00

4. Project Manager Instructions...signature/date:

- 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

Final 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
- Lab Manager: M. Taylor
- Project Mgr: Stone/Carey/Johnson
- Section Mgr: Wesson/Daniels
- QA (file): Schrenkel
- Data Management: Feldman
- Sample Prep: Bickel/Kauffman

- Metals: Doughty
- Inorganic: Perrone
- GC/LC: Pastor
- MS: Cayman/Rycklak
- Log-in: Keppel
- Admin: Soos
- Other: _____

RECRA

Sample Discrepancy Report (SDR)

SDR #: QMS013

Initiator: John W. Smith Batch: 0612 2491 Parameter: BWA
 Date: 1/11/01 Samples: 03 Matrix: SOLID
 Client: TWC Haverd Method: SW626MCAWWICLP/ Prep Batch: 061603
60-073 41169

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)
two surrogates fail < 10% in sample -03

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

3. Discussion and Proposed Action Other Description:
 Re-log
 Entire Batch
 Following Samples: _____
 Re-leach
 Re-extract sample -03
 Re-digest
 Revise EDD
 Change Test Code to _____
 Place On/Take Off Hold (circle)
① extract
② narrate
John W. Smith 1/7/01

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

5. Final Action...signature/date: John W. Smith 1-10-01 Other Explanation:
 Verified re-[log][leach][extract][digest][analysis] (circle)
 Included in Case Narrative
 Hard Copy COC Revised
 Electronic COC Revised
 EDD Corrections Completed
 When Final Action has been recorded, forward original to QA for distribution and filing.

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



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.



9

Cust ID: B11221 B11222 SBLKJM SBLKJM BS

RFW#: 002 003 00LE1603-MB1 00LE1603-MB1

2-Chloronaphthalene	8500 U	340 U	330 U	330 U
2-Nitroaniline	21000 U	840 U	830 U	830 U
Dimethylphthalate	8500 U	340 U	330 U	330 U
Acenaphthylene	8500 U	340 U	330 U	330 U
2,6-Dinitrotoluene	8500 U	340 U	330 U	330 U
3-Nitroaniline	21000 U	840 U	830 U	830 U
Acenaphthene	8500 U	340 U	330 U	53 %
2,4-Dinitrophenol	21000 U	840 U	830 U	830 U
4-Nitrophenol	21000 U	840 U	830 U	56 %
Dibenzofuran	8500 U	340 U	330 U	330 U
2,4-Dinitrotoluene	8500 U	340 U	330 U	59 %
Diethylphthalate	8500 U	60 J	330 U	330 U
4-Chlorophenyl-phenylether	8500 U	340 U	330 U	330 U
Fluorene	8500 U	340 U	330 U	330 U
4-Nitroaniline	21000 U	840 U	830 U	830 U
4,6-Dinitro-2-methylphenol	21000 U	840 U	830 U	830 U
N-Nitrosodiphenylamine (1)	8500 U	340 U	330 U	330 U
4-Bromophenyl-phenylether	8500 U	340 U	330 U	330 U
Hexachlorobenzene	8500 U	340 U	330 U	330 U
Pentachlorophenol	21000 U	840 U	830 U	27 %
Phenanthrene	8500 U	340 U	330 U	330 U
Anthracene	8500 U	340 U	330 U	330 U
Carbazole	8500 U	340 U	330 U	330 U
Di-n-butylphthalate	7000 J	76 J	330 U	19 J
Fluoranthene	8500 U	340 U	330 U	330 U
Pyrene	8500 U	340 U	330 U	55 %
Butylbenzylphthalate	8500 U	340 U	330 U	330 U
3,3'-Dichlorobenzidine	8500 U	340 U	330 U	330 U
Benzo(a)anthracene	8500 U	340 U	330 U	330 U
Chrysene	8500 U	340 U	330 U	330 U
bis(2-Ethylhexyl)phthalate	1800 J	69 J	330 U	330 U
Di-n-octyl phthalate	8500 U	340 U	330 U	330 U
Benzo(b)fluoranthene	8500 U	340 U	330 U	330 U
Benzo(k)fluoranthene	8500 U	340 U	330 U	330 U
Benzo(a)pyrene	8500 U	340 U	330 U	330 U
Indeno(1,2,3-cd)pyrene	8500 U	340 U	330 U	330 U
Dibenz(a,h)anthracene	8500 U	340 U	330 U	330 U
Benzo(g,h,i)perylene	8500 U	340 U	330 U	330 U

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



0012L491

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

9 Met Dig BNA

TRU-Hanford

Client <u>Hanford</u> <small>TR 126-00</small>	SAF <u>B00-073</u>	Refrigerator #	<u>A</u>	<u>B</u>
Est. Final Proj. Sampling Date		#Type Container	Liquid	
Project # <u>10985-001-001-9999-00</u>			Solid <u>1A6</u>	<u>1A6</u>
Project Contact/Phone #		Volume	Liquid	
RECRA Project Manager <u>OS</u>			Solid <u>125</u>	<u>60</u>
QC <u>SPCC</u> Del <u>STD</u> TAT <u>21 day</u>		Preservatives		
Date Rec'd <u>12-6-00</u> Date Due <u>12-27-00</u>		ANALYSES REQUESTED	ORGANIC	INORG
Account #			VOA BNA Pest/PCB Herb	Metal CN

MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	RECRA LabNet Use Only														
			MS	MSD				VOA	BNA	Pest/PCB	Herb	Metal	CN									
													MCRTD	MHGTO								
	<u>001</u>	<u>B 111 B7</u>			<u>X</u>	<u>11/30/00</u>	<u>1015</u>															
	<u>002</u>	<u>B 11 221</u>			<u>L</u>	<u>1</u>	<u>0826</u>	<u>1</u>	<u>✓</u>	<u>✓</u>												
	<u>003</u>	<u>L 222</u>					<u>0940</u>	<u>1</u>	<u>✓</u>	<u>✓</u>												

Special Instructions: SAF B00-073
X = other solid

Run Matrix QC

DATE/REVISIONS:
 12-29-00 17002003: AS, Ba, Cd, Pb, Sr, Ag (SPR007M17)
 1-3-01 20025X cancelled / 0025H added
 3. _____
 4. _____
 5. _____
 6. _____

<p>Samples were: 1) Shipped <input checked="" type="checkbox"/> or Hand Delivered _____ Airbill # <u>Below</u> 2) Ambient or <input checked="" type="checkbox"/> chilled 3) Received in Good Condition <input checked="" type="checkbox"/> or N 4) Labels indicate Property Preserved <input checked="" type="checkbox"/> or N 5) Received Within Holding Times <input checked="" type="checkbox"/> or N</p>	<p>COC Tape was: 1) Present on Outer Package <input checked="" type="checkbox"/> or N 2) Unbroken on Outer Package <input checked="" type="checkbox"/> or N 3) Present on Sample <input checked="" type="checkbox"/> or N 4) Unbroken on Sample <input checked="" type="checkbox"/> or N COC Record Present Upon Sample Rec'l <input checked="" type="checkbox"/> or N Cooler Temp. <u>2.5</u> °C</p>
--	---

Relinquished by	Received by	Date	Time
<u>Fed Ex</u>	<u>V Henry</u>	<u>12/6/00</u>	<u>0915</u>

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

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

0012L491

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B00-073-005		Page 1 of 2			
Collector Doug Bowers		Company Contact Jason Addler		Telephone No. 531-0703		Project Coordinator TRENT, SJ		Price Code 9L Data Turnaround 21 Days			
Project Designation 100-D & 100-H Rx Waste Sampling - Other Solids		Sampling Location 100 D reactor		SAF No. B00-073		Air Quality <input type="checkbox"/>					
Ice Chest No. <i>Shipping van 9600 (lot 1)</i>		Field Logbook No. EFL 1133-8		COA R105DG280C		Method of Shipment Fed Ex					
Shipped To TMA/RECRA		Offsite Property No. <i>A010038</i>		Bill of Lading/Air Bill No. <i>42357453-0945</i>							
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation		None					
				Type of Container		aG					
				No. of Container(s)		1					
				Special Handling and/or Storage		Volume		60mL <i>B</i>			
SAMPLE ANALYSIS				ICP Metals - 6010A (Supertrace); Mercury - 7471 - (CV)							
Sample No.		Matrix *	Sample Date	Sample Time							
B111B7		OTHER SOLID	11-30-00	1015	X						
B111B8		OTHER SOLID									
B111B9		OTHER SOLID									
B111C0		OTHER SOLID									
B111C1		OTHER SOLID									
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS					
Relinquished By <i>Doug Bowers</i>		Date/Time <i>11-30-00/12:15</i>		Received By <i>R. Thoren</i>		Date/Time <i>11/30/00</i>		ICP Supertrace metals report Total Cr only.		Matrix * S=Soil SE=Soil/liquid SO=Solid S=Sludge W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By <i>R. Thoren</i>		Date/Time <i>11/30/00</i>		Received By <i>Stored in</i>		Date/Time <i>11/30/00</i>					
Relinquished By <i>Removed from</i>		Date/Time <i>12-4-00</i>		Received By <i>R. Thoren</i>		Date/Time <i>12-4-00</i>					
Relinquished By <i>R. Thoren</i>		Date/Time <i>12-4-00</i>		Received By <i>FEOLP</i>		Date/Time <i>12-</i>					
Relinquished By <i>Fed Ex</i>		Date/Time <i>12-5-00 10:00</i>		Received By <i>W. Hernandez</i>		Date/Time <i>12-5-00</i>					
Relinquished By <i>Fed Ex</i>		Date/Time <i>12/6/00 0915</i>		Received By <i>W. Hernandez</i>		Date/Time <i>12/6/00 0915</i>					
LABORATORY SECTION	Received By			Title			Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method			Disposed By			Date/Time				

NETO

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PT
240

0012L 491

12

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B00-073-006	Page 1 of 1
Collector Doug Bowers	Company Contact Jason Addler	Telephone No. 531-0703	Project Coordinator TRENT, SJ	Price Code 9L	Data Turnaround 21 Days	
Project Designation 100-D & 100-H Rx Waste Sampling - Other Solids	Sampling Location 100 D reactor	SAF No. B00-073	Air Quality <input type="checkbox"/>			
Ice Chest No. <i>Shipping Van 96001 (10A)</i>	Field Logbook No. EFL 1133-8	COA R105DG280C	Method of Shipment Fed Ex			
Shipped To TMA/RECRA	Offsite Property No. <i>A010038</i>	Bill of Lading/Air Bill No. <i>42357953.0945</i>				

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	Cool 4C						
	Type of Container	aG	aG						
	No. of Container(s)	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>
	Volume	60mL	125mL						
Special Handling and/or Storage									
SAMPLE ANALYSIS		ICP Metals - 6010A (Supertrace); Mercury - 7471 - (CV)	See item (1) in Special Instructions						
		<i>B</i>	<i>A</i>						<i>Tie to</i>
Sample No.	Matrix *	Sample Date	Sample Time						
<i>2</i> ✓ B11221	OTHER SOLID	<i>11-30-00</i>	<i>0826</i>	<i>X</i>	<i>X</i>				<i>11/04</i>
<i>3</i> ✓ B11222	OTHER SOLID	<i>11-30-00</i>	<i>0940</i>	<i>X</i>	<i>X</i>				<i>11/05</i>

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix *
Relinquished By <i>Doug Bowers</i>	Date/Time <i>11-30-00/1415</i>	Received By <i>R. Thorey</i>	Date/Time <i>11/30/00</i>	(1) VOA - 8260A (TCL); Semi-VOA - 8270A (TCL); Pesticides - 8081; PCBs - 8082		<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=Trace W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By <i>R. Thorey</i>	Date/Time <i>11/30/00</i>	Received By <i>R. Thorey</i>	Date/Time <i>11/30/00</i>			
Relinquished By <i>R. Thorey</i>	Date/Time <i>11/30/00</i>	Received By <i>R. Thorey</i>	Date/Time <i>11/30/00</i>			
Relinquished By <i>R. Thorey</i>	Date/Time <i>12-4-00</i>	Received By <i>R. Thorey</i>	Date/Time <i>12-4-00</i>			
Relinquished By <i>R. Thorey</i>	Date/Time <i>12-4-00</i>	Received By <i>FED EX</i>	Date/Time <i>12-4-00</i>			
Relinquished By <i>Fed Ex</i>	Date/Time <i>12-5-00 10:00</i>	Received By <i>AP Corzo JR Corp</i>	Date/Time <i>12-5-00</i>			
Relinquished By <i>AP Corzo JR Corp</i>	Date/Time <i>12-5-00</i>	Received By <i>Fed Ex</i>	Date/Time <i>12-5-00</i>			

LABORATORY SECTION	Received By <i>Fed Ex</i>	Date/Time <i>12-6-00 0915</i>	Title <i>12-6-00 0915</i>
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Recra LabNet - Lionville Laboratory
 VOA ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD B00-073 H1169

DATE RECEIVED: 12/06/00

RFW LOT # :0012L491

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B11221	002	SO	00LVH538	11/30/00	N/A	12/12/00
B11222	003	SO	00LVH538	11/30/00	N/A	12/12/00
B11222	003 MS	SO	00LVH538	11/30/00	N/A	12/12/00
B11222	003 MSD	SO	00LVH538	11/30/00	N/A	12/12/00

LAB QC:

VBLKGQ	MB1	S	00LVH538	N/A	N/A	12/12/00
VBLKGQ	MB1 BS	S	00LVH538	N/A	N/A	12/12/00





**RECRA
ENVIRONMENTAL
INC.**

Chemical and Environmental Measurement Information

**Recra LabNet Philadelphia
Analytical Report**

Client: TNU-HANFORD B00-073

RFW #: 0012L491

SDG/SAF #: H1169/B00-073

W.O. #: 10985-001-001-9999-00

Date Received: 12-06-2000

GC/MS VOLATILE

Two (2) solid samples were collected on 11-30-2000.

The samples and their 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 12-12-2000.

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 samples were analyzed within required holding time.
3. Non-target compounds were not detected in the samples.
4. All surrogate recoveries were within EPA QC limits.
5. All matrix spike recoveries were within EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. The method blank contained the common laboratory contaminant Methylene Chloride 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."


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

01-19-01
Date

som\group\data\voa\tnu-hanford-0012-491.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 10 pages.

02

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.
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GLOSSARY OF VOA DATA

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- DL** = Suffix added to sample number to indicate that results are from a diluted analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP, Z** = Indicates Spiked Compound.



TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual 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: 01/03/01 10:09

RFW Batch Number: 0012L491

Client: TNUHANFORD B00-073 H1169 Work Order: 10985001001 Page: 1a

Sample Information	Cust ID:	B11221	B11222	B11222	B11222	VBLKGQ	VBLKGQ BS
RFW#:	002	003	003 MS	003 MSD	00LVH538-MB1	00LVH538-MB1	
Matrix:	SOLID	SOLID	SOLID	SOLID	SOIL	SOIL	
D.F.:	1.06	1.09	1.11	1.11	1.00	1.00	
Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	
Toluene-d8	108 %	104 %	102 %	100 %	103 %	106 %	
Surrogate Bromofluorobenzene	75 %	82 %	83 %	82 %	82 %	84 %	
Recovery 1,2-Dichloroethane-d4	104 %	104 %	105 %	107 %	95 %	106 %	
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
Chloromethane	11 U	11 U	11 U	11 U	10 U	10 U	
Bromomethane	11 U	11 U	11 U	11 U	10 U	10 U	
Vinyl Chloride	11 U	11 U	11 U	11 U	10 U	10 U	
Chloroethane	11 U	11 U	11 U	11 U	10 U	10 U	
Methylene Chloride	8 B	10 B	10 B	10 B	3 J	3 JB	
Acetone	77	34	23	34	10 U	10 U	
Carbon Disulfide	6 U	1 J	6 U	6 U	5 U	5 U	
1,1-Dichloroethene	6 U	6 U	91 %	89 %	5 U	97 %	
1,1-Dichloroethane	6 U	6 U	6 U	6 U	5 U	5 U	
1,2-Dichloroethene (total)	6 U	6 U	6 U	6 U	5 U	5 U	
Chloroform	6 U	6 U	6 U	6 U	5 U	5 U	
1,2-Dichloroethane	6 U	6 U	6 U	6 U	5 U	5 U	
2-Butanone	25	11 U	11 U	11 U	10 U	10 U	
1,1,1-Trichloroethane	6 U	6 U	6 U	6 U	5 U	5 U	
Carbon Tetrachloride	6 U	6 U	6 U	6 U	5 U	5 U	
Bromodichloromethane	6 U	6 U	6 U	6 U	5 U	5 U	
1,2-Dichloropropane	6 U	6 U	6 U	6 U	5 U	5 U	
cis-1,3-Dichloropropene	6 U	6 U	6 U	6 U	5 U	5 U	
Trichloroethene	6 U	6 U	88 %	89 %	5 U	100 %	
Dibromochloromethane	6 U	6 U	6 U	6 U	5 U	5 U	
1,1,2-Trichloroethane	6 U	6 U	6 U	6 U	5 U	5 U	
Benzene	6 U	6 U	95 %	94 %	5 U	105 %	
Trans-1,3-Dichloropropene	6 U	6 U	6 U	6 U	5 U	5 U	
Bromoform	6 U	6 U	6 U	6 U	5 U	5 U	
4-Methyl-2-pentanone	11 U	11 U	11 U	11 U	10 U	10 U	
2-Hexanone	11 U	11 U	11 U	11 U	10 U	10 U	
Tetrachloroethene	6 U	6 U	6 U	6 U	5 U	5 U	
1,1,2,2-Tetrachloroethane	6 U	6 U	6 U	6 U	5 U	5 U	
Toluene	6 U	6 U	97 %	96 %	5 U	108 %	

*= Outside of EPA CLP QC limits.

Cust ID: B11221 B11222 B11222 B11222 VBLKGQ VBLKGQ BS

RFW#: 002 003 003 MS 003 MSD 00LVH538-MB1 00LVH538-MB1

Chlorobenzene	6 U	6 U	94 %	92 %	5 U	102 %
Ethylbenzene	6 U	6 U	6 U	6 U	5 U	5 U
Styrene	6 U	6 U	6 U	6 U	5 U	5 U
Xylene (total)	6 U	6 U	6 U	6 U	5 U	5 U

*= Outside of EPA CLP QC limits.

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Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B00-073-006		Page 1 of 1			
Collector Doug Bowers		Company Contact Jason Addler		Telephone No. 531-0703		Project Coordinator TRENT, SJ		Price Code 9L Data Turnaround 21 Days			
Project Designation 100-D & 100-H Rx Waste Sampling - Other Solids		Sampling Location 100 D reactor		SAF No. B00-073		Air Quality <input type="checkbox"/>					
Ice Chest No. Shipping Van 96001 (10/1)		Field Logbook No. EFL 1133-8		COA R105DG280C		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				Preservation		None		Cool 4C			
				Type of Container		aG		aG			
				No. of Container(s)		1		1		12-5-00	
				Volume		60mL		125mL			
Special Handling and/or Storage				ICP Metals - 6010A (Supertrace); Mercury - 7471 - (CV)		See item (1) in Special Instructions					
SAMPLE ANALYSIS				B		A		T12 TO			
Sample No.	Matrix *	Sample Date	Sample Time								
2 ✓ B11221	OTHER SOLID	11-30-00	0826	X	X			12/9	11/04		
3 ✓ B11222	OTHER SOLID	11-30-00	0940	X	X			12/9	11/05		
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By		Date/Time		Received By		Date/Time		(1) VOA - 8260A (TCL); Semi-VOA - 8270A (TCL); Pesticides - 8081; PCBs - 8082			
R. Thorey		11-30-00 14:15		R. Thorey		11-30-00 14:15					
R. Thorey		11-30-00 14:45		Stored in		14:45					
R. Thorey		11-30-00 14:45		R. Thorey		11-30-00 14:45					
R. Thorey		12-4-00 08:00		R. Thorey		12-4-00 08:00					
R. Thorey		12-4-00 08:00		Fed Ex		12-4-00					
Relinquished By		Date/Time		Received By		Date/Time		S=Soil SE=Soilmen SO=Solid S=Sludge W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Tissue W1=Wipe L=Liquid V=Vegetation X=Other			
Fed Ex		12-5-00 10:00		JR Cover		12-5-00					
JR Cover		12-5-00 16:00		Fed Ex		12-5-00					
LABORATORY SECTION		Received By		Title		Date/Time					
		Fed Ex 0915		JR Cover		12-6-00 0915					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					