H0105-T/W

RECRA LabNet

a division of Recra Environmental, Inc.

Virtual Laboratories Everywhere

0049013

Recra LabNet Philadelphia
Analytical Report

Client : TNU-HANFORD
RFW# : 9709L523
SDG# : H0105

W.O. # : 10985-001-001-9999-00
Date Received: 09-26-97

INORGANIC CASE NARRATIVE

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

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

3. Sample holding time as required by the method and/or contract were met with the exception of Nitrate and Nitrite.

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.

APR 1998 RECEIVED

Bruce C Miller unit leader
for J. Michael Taylor
Vice President and Laboratory Manager
Lionville Analytical Laboratory

10-31-97
Date

njp/i09-523

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

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

WET CHEMISTRY METHODS GLOSSARY FOR ANALYSIS OF WATER SAMPLES

	EPA 600	SW846	OTHER
Acidity	__305.1		
__Alkalinity __Bicarbonate __Carbonate	__310.1		
BOD	__405.1		__5210B (b)
Ion Chromatography:			
__Bromide ✓Chloride ✓Fluoride	✓300.0	__9056	
✓Nitrite ✓Nitrate __Phosphate	✓300.0	__9056	
✓Sulfate __Formate __Acetate __Oxalate	✓300.0	__9056	
Chloride	__325.2	__9251	
Chlorine Residual	__330.5 (mod)		
Cyanide Amenable to Chlorination	__335.2	__9010A	
Cyanide (Total)	__335.2	__9010A __9012	__ILM04.0 (e)
Cyanide, Weak Acid Dissociable			__412 (a) __4500CN-I (b)
COD	__410.4 (mod)		__5220 C (b)
Color	__110.2		
Corrosivity (by Coupon)		__1110 (mod)	
Chromium VI		__7196A	__3500Cr-D (b)
Fluoride	__340.2		
Hardness, Calcium	__215.2		
Hardness, Total	__130.2		
Iodide			__ASTM D19P202 (1)
Surfactant	__425.1		
__Nitrate-Nitrite __Nitrate __Nitrite	__353.2		
Ammonia	__350.3		
Total __Kjeldahl Nitrogen __Organic Nitrogen	__351.4		
Total __Organic __Inorganic Carbon	__415.1	__9060	
Oil and Grease	__413.1	__9070	
__pH __pH, Paper	__150.1	__9040A __9041A	
Petroleum Hydrocarbons, Total Recoverable	__418.1		
Phenol	__420.1 __420.2	__9065 __9066	
__Ortho Phosphate __Total Phosphate	__365.2		__4500-P B __C
Salinity			__210A (a) __2520B (b)
Settleable Solids	__160.5		
Sulfide	__376.2 __376.1	__9030A	
Reactive __Cyanide __Sulfide		__Sec 7.3	
Silica	__370.1		
Sulfite	__377.1		
Sulfate	__375.4	__9038	
Specific Conductance	__120.1	__9050	
Specific Gravity			__213E (a)
__TCLP __TCLV		__1311	
Synthetic Precipitation Leach		__1312	
Total __Dissolved __Suspended __Solids	160__.1__.2__.3		
Total Organic Halides	__450.1	__9020B	
Turbidity	__180.1		
Volatile Solids __Total __Dissolved __Suspended	__160.4		

Other:_____ Method:_____

RFW 21-21-034/A-08/95

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., (1989).

b. Standard Methods for the Examination of Water and Waste, 17 ed., (1983)

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.

RFW 21-21L-034/D-06/96

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 10/15/97

CLIENT: TNU-HANFORD

RECRA LOT #: 9709L523

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	BOLY51	Chloride by IC	2.2	MG/L	0.25	1.0
		Fluoride by IC	0.25 u	MG/L	0.25	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	15	MG/L	1.2	5.0
		Sulfate by IC	20.0	MG/L	1.2	5.0

Recra LabNet - Lionville

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/15/97

CLIENT: TNU-HANFORD

RECRA LOT #: 9709L523

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	97LICB85-MB1	Chloride by IC	0.25 u	MG/L	0.25	1.0
		Fluoride by IC	0.25 u	MG/L	0.25	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	0.25 u	MG/L	0.25	1.0
BLANK10	97LICC85-MB1	Sulfate by IC	0.25 u	MG/L	0.25	1.0

Recra LabNet - Lionville

INORGANICS ACCURACY REPORT 10/15/97

CLIENT: TNU-HANFORD

RECRA LOT #: 9709L523

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	BOLY51	Chloride by IC	6.7	2.2	5.0	89.2	1.0
		Fluoride by IC	9.7	0.00	10.0	96.8	1.0
		Nitrite by IC	4.5	0.25u	5.0	89.2	1.0
		Nitrate by IC	63	15	50	95.6	10
		Sulfate by IC	69.0	20.0	50.0	97.9	10.0
BLANK10	97LICB85-MB1	Chloride by IC	4.7	0.25u	5.0	93.4	1.0
		Fluoride by IC	10.2	0.25u	10.0	102.2	1.0
		Nitrite by IC	5.0	0.25u	5.0	99.1	1.0
		Nitrate by IC	4.5	0.25u	5.0	90.8	1.0
BLANK10	97LICC85-MB1	Sulfate by IC	4.8	0.25u	5.0	95.7	1.0

Recra LabNet - Lionville

INORGANICS PRECISION REPORT 10/15/97

CLIENT: TNU-HANFORD

RECRA LOT #: 9709L523

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	BOLY51	Chloride by IC	2.2	2.1	6.0	1.0
		Fluoride by IC	0.25u	0.25u	NC	1.0
		Nitrite by IC	0.25u	0.25u	NC	1.0
		Nitrate by IC	15	15	0.67	5.0
		Sulfate by IC	20.0	20.0	0.010	5.0

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

DATE RECEIVED: 09/26/97 RFW LOT # :9709L523

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BOLY51						
CHLORIDE BY IC	001	W	97LICB85	09/24/97	10/01/97	10/01/97
CHLORIDE BY IC	001 REP	W	97LICB85	09/24/97	10/01/97	10/01/97
CHLORIDE BY IC	001 MS	W	97LICB85	09/24/97	10/01/97	10/01/97
FLUORIDE BY IC	001	W	97LICB85	09/24/97	10/01/97	10/01/97
FLUORIDE BY IC	001 REP	W	97LICB85	09/24/97	10/01/97	10/01/97
FLUORIDE BY IC	001 MS	W	97LICB85	09/24/97	10/01/97	10/01/97
NITRITE BY IC	001	W	97LICB85	09/24/97	10/01/97	10/01/97
NITRITE BY IC	001 REP	W	97LICB85	09/24/97	10/01/97	10/01/97
NITRITE BY IC	001 MS	W	97LICB85	09/24/97	10/01/97	10/01/97
NITRATE BY IC	001	W	97LICB85	09/24/97	10/01/97	10/01/97
NITRATE BY IC	001 REP	W	97LICB85	09/24/97	10/01/97	10/01/97
NITRATE BY IC	001 MS	W	97LICB85	09/24/97	10/01/97	10/01/97
SULFATE BY IC	001	W	97LICC85	09/24/97	10/01/97	10/01/97
SULFATE BY IC	001 REP	W	97LICC85	09/24/97	10/01/97	10/01/97
SULFATE BY IC	001 MS	W	97LICC85	09/24/97	10/01/97	10/01/97

LAB QC:

CHLORIDE BY IC	MB1	W	97LICB85	N/A	10/01/97	10/01/97
CHLORIDE BY IC	MB1 BS	W	97LICB85	N/A	10/01/97	10/01/97
FLUORIDE BY IC	MB1	W	97LICB85	N/A	10/01/97	10/01/97
FLUORIDE BY IC	MB1 BS	W	97LICB85	N/A	10/01/97	10/01/97
NITRITE BY IC	MB1	W	97LICB85	N/A	10/01/97	10/01/97
NITRITE BY IC	MB1 BS	W	97LICB85	N/A	10/01/97	10/01/97
NITRATE BY IC	MB1	W	97LICB85	N/A	10/01/97	10/01/97
NITRATE BY IC	MB1 BS	W	97LICB85	N/A	10/01/97	10/01/97
SULFATE BY IC	MB1	W	97LICC85	N/A	10/01/97	10/01/97
SULFATE BY IC	MB1 BS	W	97LICC85	N/A	10/01/97	10/01/97

RECRA LabNet Use Only

9709L523

Custody Transfer Record/Lab Work Request

RECRA LabNet

Client TNU-HANFORD
Est. Final Proj. Sampling Date
Project # 10985-001-001-9999-00
Project Contact/Phone #
RECRA Project Manager KC.
QC STD. Del STD TAT 30 DAY
Date Rec'd 9-26-97 Date Due 10-26-97
Account # TNU-HANFORD

Refrigerator #							2		2								
#/Type Container	Liquid						1P		1P								
	Solid																
Volume	Liquid						500		500								
	Solid																
Preservatives							—		HNO3								
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb				Metal	CN							
		RECRA LabNet Use Only															
							INORG ①		MMSL SO4								

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	INORG ①	MMSL SO4
001	BOLY51	✓	✓	W	9/24/97	1153	✓	
↓2	↓ 2	✓	✓	↓	↓	↓		✓

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
ASA - CLIENT INFO
AMSC - COMP

SDDH0105

Cooler temp = 5.5°C

DATE/REVISIONS:
→ 1. INORG ① = ICCL, ICPL, ICNO3,
2. ICNO2, ICSO4
3.
4.
5.
6.

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
FEDEX	[signature]	9/26/97	1000				

ORIGINAL REWRITTEN

RECRA LabNet Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill # 4171415463
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec'd Y or N

Discrepancies Between Samples Lables and COC Record? Y or N
NOTES

RECRA LabNet
a division of Recra Environmental, Inc.
Virtual Laboratories Everywhere

NOV 1997
RECEIVED
Data
Log In

Recra LabNet Philadelphia
Analytical Report

Client : TNU-HANFORD
RFW# : 9709L523

W.O.# : 10985-001-001-9999-00
Date Received: 09-26-97

METALS CASE NARRATIVE

1. This narrative covers the analyses of 1 water sample.
2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. The cooler temperature has been recorded on the Chain of Custody.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within control limits.
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits.
7. All preparation/method blanks were within method criteria. 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 laboratory control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. All matrix spike (MS) and matrix spike duplicate (MSD) recoveries were within the 80-120% control limits. Refer to the Inorganics Accuracy Report.
11. All MSs and MSDs were within the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Matrix Spike Duplicate Report.
12. The duplicate analyses for 2 analytes were outside the 20% 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.

Bruce C. Miller unit leader
for J. Michael Taylor
Vice President and Laboratory Manager
Lionville Analytical Laboratory

11-12-97
Date

skl\m09-523

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 16 pages.

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

METALS METHODS GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this RFW Lot#: 9709L523

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: ✓3005A __3010A __3015 __3020A __3050A __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	✓6010A		__200.7				__99
Antimony	✓6010A	__7041 [5]	__200.7	__204.2			__99
Arsenic	✓6010A	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	✓6010A		__200.7				__99
Beryllium	✓6010A		__200.7				__99
Bismuth	__6010A [1]		__200.7 [1]			__1620	__99
Boron	__6010A [1]		__200.7				__99
Cadmium	✓6010A	__7131A [5]	__200.7	__213.2			__99
Calcium	✓6010A		__200.7				__99
Chromium	✓6010A	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	✓6010A		__200.7				__99
Copper	✓6010A	__7211 [5]	__200.7	__220.2			__99
Iron	✓6010A		__200.7				__99
Lead	✓6010A	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010A	__7430 [4]	__200.7			__1620	__99
Magnesium	✓6010A		__200.7				__99
Manganese	✓6010A		__200.7				__99
Mercury	✓7470A [3]	__7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010A		__200.7				__99
Nickel	✓6010A		__200.7				__99
Potassium	✓6010A	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010A [1]		__200.7 [1]			__1620	__99
Selenium	✓6010A	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010A [1]		__200.7			__1620	__99
Silica	__6010A [1]		__200.7			__1620	__99
Silver	✓6010A	__7761 [5]	__200.7	__272.2			__99
Sodium	✓6010A	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010A		__200.7				__99
Thallium	✓6010A	__7841 [5]	__200.7	__279.2__200.9			__99
Tin	__6010A [1]		__200.7				__99
Titanium	__6010A [1]		__200.7				__99
Uranium	__6010A [1]		__200.7 [1]			__1620	__99
Vanadium	✓6010A		__200.7				__99
Zinc	✓6010A		__200.7				__99
Zirconium	__6010A [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

RFW 21-21-033/M-01/97

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 10/30/97

TNU-HANFORD RECRA LOT #: 9709L523

ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	BOLY52	Silver, Soluble	5.0	u	UG/L	5.0	1.0
		Aluminum, Soluble	38.2	u	UG/L	38.2	1.0
		Arsenic, Soluble	30.6	u	UG/L	30.6	1.0
		Barium, Soluble	32.9		UG/L	2.5	1.0
		Beryllium, Soluble	0.30	u	UG/L	0.30	1.0
		Calcium, Soluble	28300		UG/L	17.9	1.0
		Cadmium, Soluble	3.8	u	UG/L	3.8	1.0
		Cobalt, Soluble	4.1	u	UG/L	4.1	1.0
		Chromium, Soluble	3.3		UG/L	3.1	1.0
		Copper, Soluble	4.2	u	UG/L	4.2	1.0
		Iron, Soluble	22.5		UG/L	6.2	1.0
		Mercury, Soluble	0.10	u	UG/L	0.10	1.0
		Potassium, Soluble	1750		UG/L	498	1.0
		Magnesium, Soluble	5580		UG/L	38.1	1.0
		Manganese, Soluble	1.7		UG/L	1.3	1.0
		Sodium, Soluble	3540		UG/L	43.5	1.0
		Nickel, Soluble	10.5	u	UG/L	10.5	1.0
		Lead, Soluble	37.0		UG/L	22.7	1.0
		Antimony, Soluble	30.0	u	UG/L	30.0	1.0
		Selenium, Soluble	42.6	u	UG/L	42.6	1.0
		Thallium, Soluble	34.6	u	UG/L	34.6	1.0
		Vanadium, Soluble	4.6	u	UG/L	4.6	1.0
		Zinc, Soluble	6.8		UG/L	1.8	1.0

Recra LabNet - Lionville

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/30/97

CLIENT: TNU-HANFORD

RECRA LOT #: 9709L523

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	97L2133-MB1	Silver, Total	5.0	u	UG/L	5.	1.0
		Aluminum, Total	38.2	u	UG/L	38.2	1.0
		Arsenic, Total	30.6	u	UG/L	30.6	1.0
		Barium, Total	2.5	u	UG/L	2.5	1.0
		Beryllium, Total	0.30	u	UG/L	0.30	1.0
		Calcium, Total	66.3		UG/L	17.7	1.0
		Cadmium, Total	3.8	u	UG/L	3.8	1.0
		Cobalt, Total	4.1	u	UG/L	4.1	1.0
		Chromium, Total	3.1	u	UG/L	3.1	1.0
		Copper, Total	4.2	u	UG/L	4.2	1.0
		Iron, Total	6.2	u	UG/L	6.2	1.0
		Potassium, Total	498	u	UG/L	498	1.0
		Magnesium, Total	38.1	u	UG/L	38.1	1.0
		Manganese, Total	1.3	u	UG/L	1.3	1.0
		Sodium, Total	128		UG/L	43.5	1.0
		Nickel, Total	10.5	u	UG/L	10.5	1.0
		Lead, Total	22.7		UG/L	22.7	1.0
		Antimony, Total	30.0	u	UG/L	30.0	1.0
		Selenium, Total	42.6	u	UG/L	42.6	1.0
		Thallium, Total	34.6	u	UG/L	34.6	1.0
		Vanadium, Total	4.6	u	UG/L	4.6	1.0
		Zinc, Total	1.8	u	UG/L	1.8	1.0
BLANK1	97C0757-MB1	Mercury, Total	0.10	u	UG/L	0.1	1.0

Recra LabNet - Lionville

INORGANICS ACCURACY REPORT 10/30/97

CLIENT: TNU-HANFORD

RECRA LOT #: 9709L523

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	BOLY52	Silver, Soluble	43.8	5.0 u	50.0	87.6	1.0
		Silver, Soluble MSD	41.5	5.0 u	50.0	83.0	1.0
		Aluminum, Soluble	2000	38.2 u	2000	100.1	1.0
		Aluminum, Soluble MSD	2050	38.2 u	2000	102.5	1.0
		Arsenic, Soluble	1930	30.6 u	2000	96.7	1.0
		Arsenic, Soluble MSD	1970	30.6 u	2000	98.6	1.0
		Barium, Soluble	1920	32.9	2000	94.4	1.0
		Barium, Soluble MSD	2030	32.9	2000	99.9	1.0
		Beryllium, Soluble	46.1	0.30u	50.0	92.2	1.0
		Beryllium, Soluble MS	47.4	0.30u	50.0	94.8	1.0
		Calcium, Soluble	53600	28300	25000	101.3	1.0
		Calcium, Soluble MSD	52600	28300	25000	97.0	1.0
		Cadmium, Soluble	40.7	3.8 u	50.0	81.4	1.0
		Cadmium, Soluble MSD	45.1	3.8 u	50.0	90.2	1.0
		Cobalt, Soluble	470	4.1 u	500	93.9	1.0
		Cobalt, Soluble MSD	477	4.1 u	500	95.4	1.0
		Chromium, Soluble	188	3.3	200	92.2	1.0
		Chromium, Soluble MSD	193	3.3	200	94.8	1.0
		Copper, Soluble	229	4.2 u	250	91.6	1.0
		Copper, Soluble MSD	238	4.2 u	250	95.1	1.0
		Iron, Soluble	979	22.5	1000	95.6	1.0
		Iron, Soluble MSD	980	22.5	1000	95.8	1.0
		Mercury, Soluble	1.91	0.10u	1.0	90.6	1.0
		Mercury, Soluble MSD	1.91	0.10u	1.0	90.6	1.0
		Potassium, Soluble	24400	1750	25000	90.7	1.0
		Potassium, Soluble MS	25500	1750	25000	94.9	1.0
		Magnesium, Soluble	29200	5580	25000	94.4	1.0
		Magnesium, Soluble MS	29000	5580	25000	96.2	1.0
		Manganese, Soluble	467	1.7	500	[illegible]	1.0
		Manganese, Soluble MS	478	1.7	500	[illegible]	1.0
		Sodium, Soluble	2[illegible]	3540	25000	[illegible]	1.0
		Sodium, Soluble MSD	28[illegible]	3540	25000	98.6	1.0
		Nickel, Soluble	4[illegible]2	10.5 u	500	92.5	1.0
		Nickel, Soluble MSD	467	10.5 u	500	93.4	1.0
		Lead, Soluble	457	37.0	500	90.1	1.0
		Lead, Soluble MSD	477	37.0	500	88.1	1.0
		Antimony, Soluble	478	30.0 u	500	95.5	1.0
		Antimony, Soluble MSD	467	30.0 u	500	97.3	1.0
		Selenium, Soluble	1330	42.6 u	2000	96.5	1.0
		Selenium, Soluble MSD	1343	42.6 u	2000	97.1	1.0

Recra LabNet Lionville

INORGANICS ACCURACY REPORT 10/30/97

CLIENT: TNU-HANFORD

RECRA LOT #: 9709L523

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	BOLY52	Thallium, Soluble	1880	34.6 u	2000	94.0	1.0
		Thallium, Soluble MSD	1920	34.6 u	2000	96.2	1.0
		Vanadium, Soluble	467	4.6 u	500	93.3	1.0
		Vanadium, Soluble MSD	479	4.6 u	500	95.8	1.0
		Zinc, Soluble	458	6.8	500	90.3	1.0
		Zinc, Soluble MSD	471	6.8	500	92.8	1.0

Recra LabNet - Lionville

INORGANICS DUPLICATE SPIKE REPORT 10/30/97

CLIENT: TNU-HANFORD

RECRA LOT #: 97[illegible]

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

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
-002	BOLY52	Silver, Soluble	87.6	83.0	5.4
		Aluminum, Soluble	100.1	102.5	2.4
		Arsenic, Soluble	96.7	98.6	2.0
		Barium, Soluble	94.4	99.9	5.7
		Beryllium, Soluble	92.2	94.8	2.8
		Calcium, Soluble	101.3	97.0	4.3
		Cadmium, Soluble	81.4	90.2	10.3
		Cobalt, Soluble	93.9	95.4	1.5
		Chromium, Soluble	92.2	94.8	2.8
		Copper, Soluble	91.6	95.1	3.7
		Iron, Soluble	95.6	95.8	0.14
		Mercury, Soluble	90.6	90.6	0.00
		Potassium, Soluble	90.7	94.9	4.5
		Magnesium, Soluble	94.4	96.2	1.9
		Manganese, Soluble	93.0	95.3	2.4
		Sodium, Soluble	92.0	98.0	6.3
		Nickel, Soluble	92.5	93.4	1.0
		Lead, Soluble	86.1	88.1	2.3
		Antimony, Soluble	95.5	97.4	2.0
		Selenium, Soluble	96.3	97.0	0.64
		Thallium, Soluble	94.0	96.2	2.4
		Vanadium, Soluble	93.3	95.8	2.6
		Zinc, Soluble	90.3	92.8	2.7

Recra LabNet - Lionville

INORGANICS PRECISION REPORT 10/30/97

CLIENT: TNU-HANFORD

RECRA LOT #: 9709L523

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	BOLY52	Silver, Soluble	5.0 u	5.0 u	NC	1.0
		Aluminum, Soluble	38.2 u	38.2 u	NC	1.0
		Arsenic, Soluble	30.6 u	30.6 u	NC	1.0
		Barium, Soluble	32.9	32.9	0.00	1.0
		Beryllium, Soluble	0.30u	0.30u	NC	1.0
		Calcium, Soluble	28300	29000	2.2	1.0
		Cadmium, Soluble	3.8 u	3.8 u	NC	1.0
		Cobalt, Soluble	4.1 u	4.1 u	NC	1.0
		Chromium, Soluble	3.3	5.2	44.7	1.0
		Copper, Soluble	4.2 u	4.2 u	NC	1.0
		Iron, Soluble	22.5	21.7	3.6	1.0
		Mercury, Soluble	0.10u	0.10u	NC	1.0
		Potassium, Soluble	1750	1880	7.2	1.0
		Magnesium, Soluble	5580	5650	1.2	1.0
		Manganese, Soluble	1.7	1.5	12.5	1.0
		Sodium, Soluble	3540	3610	1.8	1.0
		Nickel, Soluble	10.5 u	10.5 u	NC	1.0
		Lead, Soluble	37.0	25.8	35.7	1.0
		Antimony, Soluble	30.0 u	30.0 u	NC	1.0
		Selenium, Soluble	42.6 u	42.6 u	NC	1.0
		Thallium, Soluble	34.6 u	34.6 u	NC	1.0
		Vanadium, Soluble	4.6 u	4.6 u	NC	1.0
		Zinc, Soluble	6.8	6.2	9.2	1.0

Recra LabNet - Lionville

INORGANICS LABORATORY CONTROL STANDARDS REPORT 10/30/97

TNU-HANFORD

RECRA LOT #: 9709L523

K ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	97L2133-LC1	Silver, LCS	486	500	UG/L	97.2
		Aluminum, LCS	5000	5000	UG/L	99.9
		Arsenic, LCS	9930	10000	UG/L	99.3
		Barium, LCS	4810	5000	UG/L	96.2
		Beryllium, LCS	231	250	UG/L	92.4
		Calcium, LCS	24900	25000	UG/L	99.6
		Cadmium, LCS	236	250	UG/L	94.2
		Cobalt, LCS	2430	2500	UG/L	97.0
		Chromium, LCS	478	500	UG/L	95.5
		Copper, LCS	1160	1250	UG/L	92.7
		Iron, LCS	4790	5000	UG/L	95.8
		Potassium, LCS	23300	25000	UG/L	93.3
		Magnesium, LCS	24100	25000	UG/L	96.3
		Manganese, LCS	717	750	UG/L	95.6
		Sodium, LCS	23600	25000	UG/L	94.3
		Nickel, LCS	1930	2000	UG/L	96.5
		Lead, LCS	2400	2500	UG/L	96.1
		Antimony, LCS	2990	3000	UG/L	99.5
		Selenium, LCS	9910	10000	UG/L	99.1
		Thallium, LCS	9860	10000	UG/L	98.6
		Vanadium, LCS	2370	2500	UG/L	94.7
		Zinc, LCS	942	1000	UG/L	94.2
LCS1	97C0757-LC1	Mercury, LCS	5.4	5.0	UG/L	108.4

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

DATE RECEIVED: 09/26/97 RFW LOT # :9709L523

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BOLY52						
SILVER, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
SILVER, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
SILVER, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
SILVER, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
ALUMINUM, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
ALUMINUM, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
ALUMINUM, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
ALUMINUM, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
ARSENIC, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
ARSENIC, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
ARSENIC, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
ARSENIC, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
BARIUM, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
BARIUM, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
BARIUM, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
BARIUM, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
BERYLLIUM, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
BERYLLIUM, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
BERYLLIUM, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
BERYLLIUM, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
CALCIUM, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
CALCIUM, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
CALCIUM, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
CALCIUM, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
CADMIUM, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
CADMIUM, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
CADMIUM, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
CADMIUM, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
COBALT, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
COBALT, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
COBALT, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
COBALT, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
CHROMIUM, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
CHROMIUM, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
CHROMIUM, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97

Recra LabNet - Lionville Laboratory
_INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD

DATE RECEIVED: 09/26/97 RFW LOT # :9709L523

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
COPPER, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
COPPER, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
COPPER, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
COPPER, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
IRON, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
IRON, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
IRON, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
IRON, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
MERCURY, SOLUBLE	002	W	97C0757	09/24/97	10/07/97	10/08/97
MERCURY, SOLUBLE	002 REP	W	97C0757	09/24/97	10/07/97	10/08/97
MERCURY, SOLUBLE	002 MS	W	97C0757	09/24/97	10/07/97	10/08/97
MERCURY, SOLUBLE	002 MSD	W	97C0757	09/24/97	10/07/97	10/08/97
POTASSIUM, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
POTASSIUM, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
POTASSIUM, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
POTASSIUM, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
MAGNESIUM, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
MAGNESIUM, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
MAGNESIUM, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
MAGNESIUM, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
MANGANESE, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
MANGANESE, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
MANGANESE, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
MANGANESE, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
SODIUM, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
SODIUM, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
SODIUM, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
SODIUM, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
NICKEL, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
NICKEL, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
NICKEL, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
NICKEL, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
LEAD, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
LEAD, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
LEAD, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
LEAD, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
ANTIMONY, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97

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

DATE RECEIVED: 09/26/97 RFW LOT # :9709L523

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ANTIMONY, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
ANTIMONY, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
ANTIMONY, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
SELENIUM, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
SELENIUM, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
SELENIUM, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
SELENIUM, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
THALLIUM, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
THALLIUM, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
THALLIUM, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
THALLIUM, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
VANADIUM, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
VANADIUM, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
VANADIUM, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
VANADIUM, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97
ZINC, SOLUBLE	002	W	97L2133	09/24/97	10/24/97	10/27/97
ZINC, SOLUBLE	002 REP	W	97L2133	09/24/97	10/24/97	10/27/97
ZINC, SOLUBLE	002 MS	W	97L2133	09/24/97	10/24/97	10/27/97
ZINC, SOLUBLE	002 MSD	W	97L2133	09/24/97	10/24/97	10/27/97

LAB QC:

SILVER LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
SILVER, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
ALUMINUM LABORTORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
ALUMINUM, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
ARSENIC LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
ARSENIC, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
BARIUM LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
BARIUM, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
BERYLLIUM LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
BERYLLIUM, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
CALCIUM LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
CALCIUM, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
CADMIUM LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
CADMIUM, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
COBALT LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
COBALT, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97

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

DATE RECEIVED: 09/26/97 RFW LOT # :9709L523

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
CHROMIUM, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
COPPER LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
COPPER, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
IRON LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
IRON, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
MERCURY LABORATORY	LC1 BS	W	97C0757	N/A	10/07/97	10/08/97
MERCURY, TOTAL	MB1	W	97C0757	N/A	10/07/97	10/08/97
POTASSIUM LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
POTASSIUM, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
MAGNESIUM LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
MAGNESIUM, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
MANGANESE LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
MANGANESE, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
SODIUM LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
SODIUM, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
NICKEL LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
NICKEL, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
LEAD LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
LEAD, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
ANTIMONY LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
ANTIMONY, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
SELENIUM LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
SELENIUM, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
THALLIUM LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
THALLIUM, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
VANADIUM LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
VANADIUM, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97
ZINC LABORATORY	LC1 BS	W	97L2133	N/A	10/24/97	10/27/97
ZINC, TOTAL	MB1	W	97L2133	N/A	10/24/97	10/27/97

RECRA LabNet Use Only

9709L 523

Custody Transfer Record/Lab Work Request

RECRA LabNet

Client TNU-HANFORD

Est. Final Proj. Sampling Date

Project # 10985-001-001-9999-00

Project Contact/Phone #

RECRA Project Manager KC

QC STD Del STD TAT 30 DAY

Date Rec'd 9-26-97 Date Due 10-26-97

Account # TNU-HANFORD

Refrigerator #								2		2							
#/Type Container	Liquid							1P		1P							
	Solid																
Volume	Liquid							500		500							
	Solid																
Preservatives								—		HNO3							
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb					Metal	CN						

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	RECRA LabNet Use Only: INORG ①	RECRA LabNet Use Only: MMSL SOLID
001	BOLY51	✓	✓	W	9/24/97	1153	✓	
2	2	✓	✓					✓

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
ASA - CLIENT INFO
AMSC - COMP

SDDH0105

5.5°C

DATE/REVISIONS:
1 INORG ① = ICCL, ICPL, ICNO3,
2 ICNO2, ICSO4
3
4
5
6

RECRA LabNet Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___ Airbill # 4171415463
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec'd Y or N

Discrepancies Between Samples Lables and COC Record? Y or N

NOTES

Relinquished by	Received by	Date	Time
FEDEX	[signature]	9/26/97	1000

Relinquished by	Received by	Date	Time

ORIGINAL

016

Case Narrative

1.0 GENERAL

Thermo NUtech Sample Delivery Group H0105 is comprised of the single water sample designated as SAF C97-017 delivered under Project Designation 100-NR-2 RI Groundwater Sampling FY1997

The sample was received as stated on the Chain-of-Custody document.

2.0 ANALYSIS NOTES

2.1 Gross Beta Analyses
No problems were encountered with the analysis.

2.2 Tritium Analyses
No problems were encountered with the analysis.

2.3 Total Strontium Analyses
No problems were encountered with the analysis.

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0105

SAMPLE SUMMARY

SDG 7455
Contact N. Joseph Verville

Client Westinghouse Hanford
Contract TSH-SVV-207925
Case no SDG H0105

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
B0LY51	100-N	LIQUID		N709062-01	C97-017	C97-017-31	09/24/97 11:53
Method Blank		LIQUID		N709062-03	C97-017		
Lab Control Sample		LIQUID		N709062-02	C97-017		
Duplicate (N709062-01)	100-N	LIQUID		N709062-04	C97-017		09/24/97 11:53

Lab id TMANC
Protocol WHC-HASM-1
Version Ver 1.0
Form DVD-CS
Version 3.06
Report date 10/20/97

N709062-01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0105

DATA SHEET

B0LY51

SDG 7455 Client/Case no Westinghouse Hanford SDG H0105
Contact N. Joseph Verville Case no TSH-SVV-207925

Lab sample id N709062-01 Client sample id B0LY51
Dept sample id 7455-001 Location/Matrix 100-N LIQUID
Received 09/25/97 Collected 09/24/97 11:53
Custody/SAF No C97-017-31 C97-017

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Tritium	10028-17-8	19000	420	200	400		H
Total Strontium	10098-97-2	0.25	0.20	0.32	2.0	U	SR
Gross Beta	12587-47-2	4.8	1.5	2.1	4.0		82B

Lab id TMANC
Protocol WHC-HASM-1
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 10/20/97