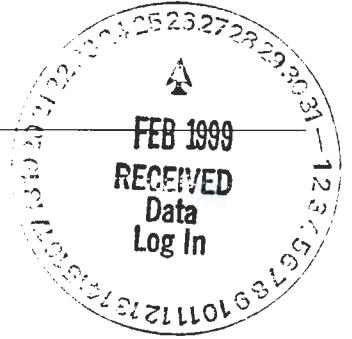


H0339-7/W



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Virtual Laboratories Everywhere

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Recra LabNet Philadelphia
Analytical Report

Client : TNU-HANFORD C99-014
RFW# : 9901L009
SDG# : H0339
SAF# : C99-014

W.O. # : 10985-001-001-9999-00
Date Received: 01-29-99

INORGANIC CASE NARRATIVE

1. This narrative covers the analysis of 2 water samples.
2. The samples were prepared and analyzed in accordance with the method checked on the attached glossary.
3. Sample holding times as required by the method and/or contract were not met as the samples were received past hold.
4. The cooler temperature was recorded on the chain-of-custody.
5. The method blank was within method criteria.
6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS was within the 20% Relative Percent Difference (RPD) control limit.
7. The matrix spike recovery was within the 75-125% control limits.
8. The replicate analysis was within the 20% RPD control limit.

J. Michael Taylor
J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

2-17-99
Date

njp i01-009

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

2/17/99

WET CHEMISTRY METHODS GLOSSARY, FOR ANALYSIS OF WATER SAMPLES

	<u>EPA 600</u>	<u>SW846</u>	<u>OTHER</u>
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: _____	

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 02/16/99

CLIENT: TNU-HANFORD C99-014
WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 9901L009

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
*****	*****	*****	*****	*****	*****	*****
-001	B0TDL8	Chromium VI	0.43	MG/L	0.020	1.0
-002	B0TDL1	Chromium VI	0.10	MG/L	0.020	1.0

Recra LabNet - Lionville

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/16/99

CLIENT: TNU-HANFORD C99-014
WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 9901L009

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	99LVI008-MB1	Chromium VI	0.020u	MG/L	0.020	1.0

Recra LabNet - Lionville

INORGANICS ACCURACY REPORT 02/16/99

CLIENT: TNU-HANFORD C99-014

RECRA LOT #: 9901L009

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-002	B0TDL1	Chromium VI	1.0	0.10	1.0	94.8	1.0
BLANK10	99LVI008-MB1	Chromium VI	0.97	0.02u	1.0	96.7	1.0
		Chromium VI MSD	0.96	0.02u	1.0	96.3	1.0

Recra LabNet - Lionville

INORGANICS DUPLICATE SPIKE REPORT 02/16/99

CLIENT: TNU-HANFORD C99-014

RECRA LOT #: 9901L009

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

SAMPLE	SITE ID	ANALYTE	SPIKE#1	SPIKE#2	%DIFF
			%RECOV	%RECOV	
BLANK10	99LVI008-MB1	Chromium VI	96.7	96.3	0.41

Recre LabNet - Lionville

INORGANICS PRECISION REPORT 02/16/99

CLIENT: TNU-HANFORD C99-014

RECRA LOT #: 9901L009

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	B0TDL1	Chromium VI	0.10	0.096	5.1	1.0

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD C99-014

DATE RECEIVED: 01/29/99

RFW LOT # :9901L009

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0TDL8						
CHROMIUM VI	001	W	99LVI008	01/27/99	02/01/99	02/01/99
B0TDL1						
CHROMIUM VI	002	W	99LVI008	01/27/99	02/01/99	02/01/99
CHROMIUM VI	002 REP	W	99LVI008	01/27/99	02/01/99	02/01/99
CHROMIUM VI	002 MS	W	99LVI008	01/27/99	02/01/99	02/01/99

LAB QC:

CHROMIUM VI	MB1	W	99LVI008	N/A	02/01/99	02/01/99
CHROMIUM VI	MB1 BS	W	99LVI008	N/A	02/01/99	02/01/99
CHROMIUM VI	MB1 BSD	W	99LVI008	N/A	02/01/99	02/01/99

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#

C99-014-2

Page 1 of 1

H0334

Collector <i>D. Hollingsworth</i>	Contact/Requester JH KESSNER	Telephone No. (509) 372-9538	MSIN FAX
AF No. C99-014	Sampling Origin HANFORD SITE	Purchase Order/Charge Code	
Project Title 100-KR-4 (LA 2) IAM GW. JANUARY 1999	Logbook No. <i>WM - SML - 419</i>	Ice Chest No. SML-223	Temp.
Shipped To (Lab) TMA/RECRA	Method of Shipment GOVT VEHICLE	Bill of Lading/Air Bill No.	
Protocol CERCLA	Data Turnaround 45 Days	Offsite Property No.	

POSSIBLE SAMPLE HAZARDS/REMARKS
.. ..

009

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes No
FAX copies of TMA log-in to DL Stewart (172-1704) & JM Duncan (372-9052).

Sample No.	Lab ID	Date	Time	No/Type Container	Sample Analysis	Preservative
BOTDL8 (F)		W 1/27/99	1200	1x500-mL G/P	Chromium Hex - 7198	Cool 4C
BOTDL8 (F)		W 1/27/99	1200	1x20-mL P	Activity Scan	None

Relinquished By <i>D. Hollingsworth</i>	Print <i>D. Hollingsworth</i>	Sign <i>D. Hollingsworth</i>	Date/Time 1/27/99 1206	Received By <i>RZ Steffler</i>	Print <i>RZ Steffler</i>	Sign <i>RZ Steffler</i>	Date/Time 1-27-99 1206	Matrix * S = Soil DS = Drum Solid SE = Sediment DL = Drum Liquid SO = Solid T = Trume SL = Sludge W1 = Wire W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By <i>RZ Steffler</i>			Date/Time 1-27-99 1400	Received By <i>Feed Ex</i>			Date/Time 1-27-99	
Relinquished By <i>Feed Ex</i>			Date/Time 1-28-99 11:00	Received By <i>JR Corso</i>			Date/Time 1-28-99 11:00	
Relinquished By <i>Feed Ex</i>			Date/Time 1/29/99	Received By <i>Joller</i>			Date/Time 1/29/99 0930	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

011

PNNL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C.# C99-014-15
	HO339	Page 1 of 1

Collector <i>D. Hollingsworth</i>	Contact/Requester JH KESSNER	Telephone No. MSIN FAX (509) 372-9538
SAF No. C99-014	Sampling Origin HANFORD SITE	Purchase Order/Charge Code
Project Title 100-KR-4 (1 & 2) IAM GW JANUARY 1999	Logbook No. <i>WM-SML-1419</i>	Ice Chest No. <i>SML-223</i> Temp.
Shipped To (Lab) TMA/RECRA	Method of Shipment GOVT VEHICLE	Bill of Lading/Air Rtn No.
Protocol CERCLA	Data Turnaround 45 Days	Office Property No. <i>216</i>
POSSIBLE SAMPLE HAZARDS/REMARKS ** **		SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> FAX copies of TMA log-in to DL Stewart (372-1704) & JM Duncan (372-9052).

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
BOTDL1 (F)		W	<i>1-27-99</i>	<i>1238</i>	1x500-ml G/P	Chromium Hex - 7198	Cool 4C
BOTDL1 (F)		W	<i>1-27-99</i>	<i>1238</i>	1x20-ml P	Activity Scan	None

Relinquished By <i>D. Hollingsworth</i> <i>D. Hollingsworth</i> <i>1/27/99</i> <i>1246</i>	Received By <i>RZ Steffler</i> <i>R.Z. Steffler</i> <i>1-27-99</i> <i>1246</i>	Matrix * S = Soil DS = Drum Solid SE = Sediment DL = Drum Liquid SD = Solid T = Time SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By <i>RZ Steffler</i> <i>R.Z. Steffler</i> <i>1-27-99</i> <i>1400</i>	Received By <i>Fed Ex</i> <i>Fed Ex</i> <i>1-27-99</i>	
Relinquished By <i>Fed Ex</i> <i>Fed Ex</i> <i>1-28-99</i> <i>11:00</i>	Received By <i>JR Pores</i> <i>JR Pores</i> <i>1-28-99</i> <i>11:00</i>	
Relinquished By <i>Fed Ex</i> <i>Fed Ex</i> <i>1-28-99</i> <i>11:00</i>	Received By <i>JR Pores</i> <i>JR Pores</i> <i>1-28-99</i> <i>11:00</i>	
Relinquished By <i>Fed Ex</i> <i>Fed Ex</i> <i>1-28-99</i> <i>11:00</i>	Received By <i>JR Pores</i> <i>JR Pores</i> <i>1-28-99</i> <i>11:00</i>	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By <i>Joder</i> <i>Joder</i> <i>1/29/99</i> <i>0930</i>

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