0054568

RECRA ENVIRONMENTAL INC.

Chemical and Environmental Measurement Information

Recra LabNet Philadelphia
Analytical Report

Client: TNU-HANFORD B99-008
RFW #: 0010L069
SDG/SAF #: H1109/B99-008

W.O. #: 10985-001-001-9999-00
Date Received: 10-27-2000

GC/MS VOLATILE

Eleven (11) water samples were collected on 10-25-2000.

The samples and their associated QC samples were analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8260B for client specified Volatile target compounds on 10-31-2000 and 11-01,02-2000.

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 temperatures upon receipt have been recorded on the chain-of-custody.
2. The samples were analyzed within required holding time.
3. Most of the samples required 5 to 25-fold dilution due to high levels of target compounds. Due to the programming limitations, the dilution factor on the summary report is not the true dilution factor.
4. All surrogate recoveries were within EPA QC limits.
5. All matrix spike recoveries were within EPA QC limits.

   The blank spike recovery was within EPA QC limits.

   The target compounds are not included in the spiking solution. (CLP spike recoveries have been reported on the Form 3.)
6. The method blanks contained the common laboratory contaminants Methylene Chloride and Acetone at levels less than 2x the CRQL.
7. Internal standard area and retention time criteria were met.
8. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

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

12-29-00
Date

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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 15 pages.

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

Recra LabNet - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B99-008 H1109

DATE RECEIVED: 10/27/00 RFW LOT # :0010L069

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B10LY1	001	W	00LNV377	10/25/00	N/A	10/31/00
B10LY1	001 D1	W	00LVN378	10/25/00	N/A	11/01/00
B10LX1	002	W	00LNV377	10/25/00	N/A	10/31/00
B10LX1	002 MS	W	00LVN378	10/25/00	N/A	11/01/00
B10LX1	002 MSD	W	00LVN378	10/25/00	N/A	11/01/00
B10LX2	003	W	00LNV377	10/25/00	N/A	10/31/00
B10LX3	004	W	00LNV377	10/25/00	N/A	10/31/00
B10LX4	005	W	00LNV377	10/25/00	N/A	10/31/00
B10LX4	005 D1	W	00LVN379	10/25/00	N/A	11/02/00
B10LX5	006	W	00LNV377	10/25/00	N/A	10/31/00
B10LX5	006 D1	W	00LVN379	10/25/00	N/A	11/02/00
B10LX6	007	W	00LVN378	10/25/00	N/A	11/01/00
B10LX6	007 D1	W	00LVN379	10/25/00	N/A	11/02/00
B10LX7	008	W	00LVN379	10/25/00	N/A	11/02/00
B10LX8	009	W	00LVN378	10/25/00	N/A	11/01/00
B10LX8	009 D1	W	00LVN379	10/25/00	N/A	11/02/00
B10LX9	010	W	00LVN378	10/25/00	N/A	11/01/00
B10LX9	010 D1	W	00LVN379	10/25/00	N/A	11/02/00
B10LY0	011	W	00LVN378	10/25/00	N/A	11/01/00
B10LY0	011 D1	W	00LVN379	10/25/00	N/A	11/02/00

LAB QC:

VBLKZV	MB1	W	00LNV377	N/A	N/A	10/31/00
VBLKYP	MB1	W	00LVN378	N/A	N/A	11/01/00
VBLKYP	MB1 BS	W	00LVN378	N/A	N/A	11/01/00
VBLKYN	MB1	W	00LVN379	N/A	N/A	11/02/00

JAN 2001
RECEIVED

GLOSSARY OF VOA DATA

DATA QUALIFIERS

U	=	Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
J	=	Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
B	=	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
E	=	Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
D	=	Identifies all compounds identified in an analysis at a secondary dilution factor.
I	=	Interference.
NQ	=	Result qualitatively confirmed but not able to quantify.
N	=	Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs). where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
X	=	This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
Y	=	Additional qualifiers used as required are explained in the case narrative.

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GLOSSARY OF VOA DATA

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

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Recra LabNet - Lionville Laboratory

Volatiles By GC/MS, Special List

Report Date: 12/13/00 10:01

RFW Batch Number: **0010L069** Client: **TNUHANFORD B99-008 H1109** Work Order: 10985001001 Page: 1a

	Cust ID:	B10LY1		B10LY1		B10LX1		B10LX1		B10LX1		B10LX2	
Sample Information	RFW#:	001		001 DL		002		002 MS		002 MSD		003	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		5.00		1.00		1.00		1.00		1.00	
	Units:	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
Surrogate Recovery	1,2-Dichloroethane-d4	110	%	109	%	115	%	111	%	114	%	105	%
	Toluene-d8	108	%	100	%	107	%	102	%	105	%	104	%
	Bromofluorobenzene	96	%	85	%	92	%	90	%	88	%	89	%
			fl		fl		fl		fl		fl		fl
Methylene Chloride		7	B	64	BD	13	B	12	B	14	B	13	B
Acetone		7	JB	41	JBD	8	JB	7	JB	8	JB	8	JB
2-Butanone		10	U	50	U	10	U	10	U	10	U	10	U
Chloroform		18		17	JD	5	U	5	U	5	U	5	U
Carbon Tetrachloride		290	E	280	D	5	U	5	U	5	U	5	U
Trichloroethene		5	U	25	U	5	U	98	%	108	%	5	U
Tetrachloroethene		5	U	25	U	5	U	5	U	5	U	5	U
Trichlorofluoromethane		5	U	25	U	5	U	5	U	5	U	5	U

*= Outside of EPA CLP QC limits.

Recra LabNet - Lionville Laboratory

Volatiles By GC/MS, Special List

Report Date: 12/13/00 10:01

RFW Batch Number: **0010L069** Client: **TNUHANFORD B99-008 H1109** Work Order: 10985001001 Page: 2a

	Cust ID:	B10LX3		B10LX4		B10LX4		B10LX5		B10LX5		B10LX6	
Sample Information	RFW#:	004		005		005 DL		006		006 DL		007	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		25.0		1.00		20.0		1.00	
	Units:	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
Surrogate Recovery	1,2-Dichloroethane-d4	108	%	107	%	114	%	108	%	105	%	107	%
	Toluene-d8	104	%	104	%	104	%	104	%	105	%	102	%
	Bromofluorobenzene	91	%	87	%	88	%	89	%	83	%	83	%
			fl		fl		fl		fl		fl		fl
Methylene Chloride		13	B	13	B	290	BD	13	B	330	BD	43	B
Acetone		7	JB	6	JB	160	JBD	7	JB	140	JBD	6	JB
2-Butanone		10	U	10	U	250	U	10	U	200	U	10	U
Chloroform		5	U	17		120	U	16		20	JD	18	
Carbon Tetrachloride		5	U	1600	E	2400	D	1600	E	2500	D	2000	E
Trichloroethene		5	U	4	J	120	U	4	J	100	U	3	J
Tetrachloroethene		5	U	5	U	120	U	5	U	100	U	5	U
Trichlorofluoromethane		5	U	5	U	120	U	5	U	100	U	5	U

*= Outside of EPA CLP QC limits.

Recra LabNet - Lionville Laboratory

Volatiles By GC/MS, Special List

Report Date: 12/13/00 10:01

RFW Batch Number: **0010L069** Client: **TNUHANFORD B99-008 H1109** Work Order: 10985001001 Page: 3a

	Cust ID:	B10LX6		B10LX7		B10LX8		B10LX8		B10LX9		B10LX9	
Sample Information	RFW#:	007 DL		008		009		009 DL		010		010 DL	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	25.0		25.0		1.00		25.0		1.00		25.0	
	Units:	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
Surrogate Recovery	1,2-Dichloroethane-d4	116	%	107	%	106	%	104	%	116	%	110	%
	Toluene-d8	111	%	107	%	107	%	105	%	107	%	107	%
	Bromofluorobenzene	91	%	88	%	87	%	88	%	87	%	89	%
			fl		fl		fl		fl		fl		fl
Methylene Chloride		220	BD	230	B	6	B	240	BD	5	B	250	BD
Acetone		150	JBD	140	JB	5	BJ	140	JBD	7	BJ	170	JBD
2-Butanone		250	U	250	U	10	U	250	U	10	U	250	U
Chloroform		120	U	120	U	15		120	U	20		23	JD
Carbon Tetrachloride		3600	D	3900		1700	E	2600	D	1800	E	2600	D
Trichloroethene		120	U	120	U	5		120	U	3	J	120	U
Tetrachloroethene		120	U	120	U	5	U	120	U	5	U	120	U
Trichlorofluoromethane		120	U	120	U	5	U	120	U	5	U	120	U

*= Outside of EPA CLP QC limits.

Recra LabNet - Lionville Laboratory

Volatiles By GC/MS, Special List

Report Date: 12/13/00 10:01

RFW Batch Number: **0010L069** Client: **TNUHANFORD B99-008 H1109** Work Order: 10985001001 Page: 4a

	Cust ID:	B10LY0		B10LY0		VBLKZV		VBLKYP		VBLKYP BS		VBLKYN	
Sample Information	RFW#:	011		011 DL		00LNV377-MB1		00LVN378-MB1		00LVN378-MB1		00LVN379-MB1	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		10.0		1.00		1.00		1.00		1.00	
	Units:	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
Surrogate Recovery	1,2-Dichloroethane-d4	107	%	105	%	113	%	108	%	113	%	108	%
	Toluene-d8	96	%	104	%	101	%	103	%	99	%	102	%
	Bromofluorobenzene	81	%	86	%	86	%	88	%	87	%	86	%
			fl		fl		fl		fl		fl		fl
Methylene Chloride		5	B	170	BD	7		6		15	B	8	
Acetone		6	JB	82	JBD	6	J	8	J	7	JB	7	J
2-Butanone		10	U	100	U	10	U	10	U	10	U	10	U
Chloroform		17		19	JD	5	U	5	U	5	U	5	U
Carbon Tetrachloride		900	E	1100	D	5	U	5	U	5	U	5	U
Trichloroethene		2	J	50	U	5	U	5	U	101	%	5	U
Tetrachloroethene		5	U	50	U	5	U	5	U	5	U	5	U
Trichlorofluoromethane		5	U	50	U	5	U	5	U	5	U	5	U

*= Outside of EPA CLP QC limits.

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Recra.LabNet.Philadelphia Contract: 10985-001-001-9999-00

Lab Code: RECRA Case No.: SAS No.: SDG No.: 10L069

Matrix Spike - EPA Sample No.: B10LX1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	50.000	0.0000	41.106	82	61-145
Trichloroethene	50.000	0.0000	48.925	98	71-120
Benzene	50.000	0.0000	48.968	98	76-127
Toluene	50.000	0.0000	50.475	101	76-125
Chlorobenzene	50.000	0.0000	49.782	100	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50.000	44.087	88	7	14	61-145
Trichloroethene	50.000	53.814	108	10	14	71-120
Benzene	50.000	52.746	105	7	11	76-127
Toluene	50.000	56.030	112	10	13	76-125
Chlorobenzene	50.000	55.009	110	10	13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS:

3A
WATER VOLATILE BLANK SPIKE RECOVERY

Lab Name: Recra.LabNet.Philadelphia Contract: 10985-001-001-9999-00

Lab Code: RECRA Case No.: SAS No.: SDG No.: 10L069

Matrix Spike - EPA Sample No.: VBLKYP

COMPOUND	SPIKE ADDED (ug/L)	BLANK CONCENTRATION (ug/L)	BS CONCENTRATION (ug/L)	BS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	50.000	0.0000	41.289	82	61-145
Trichloroethene	50.000	0.0000	50.675	101	71-120
Benzene	50.000	0.0000	49.904	100	76-127
Toluene	50.000	0.0000	51.153	102	76-125
Chlorobenzene	50.000	0.0000	50.004	100	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 5 outside limits

COMMENTS:

RECRA LabNet Use Only
00106069

Custody Transfer Record/Lab Work Request

Page 1 of 2

ALL FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: TNU- HANFORD SAF# B99-008
Est. Final Proj. Sampling Date:
Project #: 10985-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: OJ
QC: Spec Del: Std TAT: 30 day
Date Rec'd: 10-27-00 Date Due: 11-26-00
Account #:

		A-C									D		E	F		G
Refrigerator #		1									4		4	4		4
#/Type Container	Liquid	3GL									1PL		1PL	1PL		1PL
	Solid															
Volume	Liquid	40									500		500	125		1LT
	Solid															
Preservatives		—									—		—	—		—
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb				INORG: Metal	CN	IC Anions		Hardness	PH		BOD
RECRA LabNet Use Only		0024X									ICNO3		IHARD	IPH		IBOD5

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	0024X									ICNO3		IHARD	IPH		IBOD5
001	B10LY1			W	10-25-00	1200	3									1		1	1		1
002	X1					0818	3									1		1	1		1
003	2					0849	3									1		1	1		1
004	3					0915	3									1		1	1		1
005	4					0933	3									1		1	1		1
006	5					0933	3									1		1	1		1
007	6					1000	3									1		1	1		1
008	7					1020	3									1		1	1		1
009	8					1124	3									1		1	1		1
010	9					1136	3									1		1	1		1

Special Instructions: Saf B99-008

Run Matrix QC
BOD's rec'd in hold - 001, 004-011
BOD's rec'd out of hold - 002, 003

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

RECRA LabNet Use Only

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

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

Relinquished by	Received by	Date	Time
[signature]	[signature]	10-27-00	0915

Relinquished by	Received by	Date	Time
COMPOSITE WASTE		ORIGINAL! REWRITTEN	

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:
4235 7954 0018
4235 7953 9996
4235 7954 0007

RECRA LabNet Use Only
00101069

Custody Transfer Record/Lab Work Request

RECRA LabNet

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TMU-HANFORD B99-008
Est. Final Proj. Sampling Date:
Project #:
Project Contact/Phone #:
RECRA Project Manager:
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

		A-C									D		E	F		G
Refrigerator #		1									4		4	4		4
#/Type Container	Liquid	3GL									1PL		1PL	1PL		1PL
	Solid															
Volume	Liquid	1/0									500		500	125		1CT
	Solid															
Preservatives		—									—		—	—		—
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb				INORG: Metal	CN	Se Pb Cd		Hg Ag Cr	PH		BOD

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb				Metal	CN	Se Pb Cd		Hg Ag Cr	PH		BOD
								RECRA LabNet Use Only														
								0024X									TC03		THHD	HPI		PRS
S - Soil	011	BIOLYO			W	10/5/00	1713	3									1		1	1		1
SE - Sediment																						
SO - Solid																						
SL - Sludge																						
W - Water																						
O - Oil																						
A - Air																						
DS - Drum Solids																						
DL - Drum Liquids																						
L - EP/TCLP Leachate																						
WI - Wipe																						
X - Other																						
F - Fish																						

Special Instructions:

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

Relinquished by	Received by	Date	Time
Fed Ex	[illegible]	10/6/00	0915

Relinquished by	Received by	Date	Time

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

RECRA LabNet Use Only

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

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. °C

00104407

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-008-13	Page 2 of 2

Collector: Baechler/Cowgill/Johansen	Company Contact: K Maki	Telephone No.: 373-4989	Project Coordinator: TRENT, SJ
Price Code: 7N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 200-ZP-1 Process Sampling and Analysis - Bi-Weekly/Quart	Sampling Location: 200 West	SAF No.: B99-008	
Ice Chest No.: ERC 96-044	Field Logbook No.: EL-1330	COA: R20ZP1D760	Method of Shipment: FED EX
Shipped To: TMA/RECRA	Offsite Property No.: A010007	Bill of Lading/Air Bill No.: 12357453-0018 RT 10/26/00	

POSSIBLE SAMPLE HAZARDS/REMARKS
Samples originated from non Rad Controlled area. NOTA Required

Special Handling and/or Storage

Preservation	F None	D Cool 4C	E HNO3 to pH <2	G Cool 4C	A-C HCl to pH <2 Cool 4C					
Type of Container	P	P	P	P	aGs*					
No. of Container(s)	1	1	1	1	3					
Volume	125mL	500mL	500mL	1000mL	40mL					
SAMPLE ANALYSIS	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness - 130.2	BOD - 405.1	See item (1) in Special Instructions.					

Sample No.	Matrix *	Sample Date	Sample Time										
B10LY1	WATER	10/25/00	1200	X	X	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By	Date/Time	Received By	Date/Time
JA Cowgill / Jason Johansen	10-25-00/1320	R. Thorell	10/25/00 1320
R. Thorell	10/25/00 1400	Storedell	10/25/00 1400
Removed from Stored 2C 3728	10/26/00 0600	R. Thorell	10/26/00 0600
R. Thorell	10/26/00 1430	FEDEX	
FedEx	10/27/00 0915	Kent Hemmy	10-27-00 0915
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
** Sample analysis for nitrate by IC 300.0 and BOD by 405.1 are for information only. ERC acknowledges that the holding time may not be met.

(1) VOA - 8240A (SW-846) (2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene, Trichloromonofluoromethane)

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (10/99)

14

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-008-13	Page 1 of 3
Collector: Baechler/Cowgill/Johansen	Company Contact: K Maki	Telephone No.: 373-4989	Project Coordinator: TRENT, SJ	Price Code: 7N; Air Quality ☐; Data Turnaround: 45 Days
Project Designation: 200-ZP-1 Process Sampling and Analysis - Bi-Weekly/Quart	Sampling Location: 200 West		SAF No.: B99-008	
Ice Chest No.: ERC 99-052	Field Logbook No.: EL-1330	COA: R20ZP1D760	Method of Shipment: FEDEX	
Shipped To: TMA/RECRA	Offsite Property No.: A010007		Bill of Lading/Air Bill No.: 42357953-9996	

POSSIBLE SAMPLE HAZARDS/REMARKS
Samples originated from non RAD Controlled area. NOTA Required

Special Handling and/or Storage

Preservation	None	Cool 4C	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C					
Type of Container	P	P	P	P	aGs*					
No. of Container(s)	1	1	1	1	3					
Volume	125mL	500mL	500mL	1000mL	40mL					
SAMPLE ANALYSIS	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness - 130.2	BOD - 405.1	See item (1) in Special Instructions.					

	Sample No.	Matrix *	Sample Date	Sample Time										
2	B10LX1	WATER	10/25/00	0818	X	X	X	X	X					
3	B10LX2	WATER	10/25/00	0849	X	X	X	X	X					
4	B10LX3	WATER	10/25/00	0915	X	X	X	X	X					
5	B10LX4	WATER	10/25/00	0933	X	X	X	X	X					
6	B10LX5	WATER	10/25/00	0933	X	X	X	X	X					

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By	Date/Time	Received By	Date/Time
G Cowgill/Jason Cowgill	10/25/00 1320	R. Thoren	10/25/00 1320
R Thoren	10/25/00 1400	Stored in Ruf 2C 3728	10/25/00 1400
Removed from Ruf 2C 3728	10/26/00 0600	R. Thoren	10/26/00 0600
R Thoren	10/26/00 1430	FEDEX	
Fed Ex	10/27/00 0915	[illegible]	10-27-00 0915

SPECIAL INSTRUCTIONS
** Sample analysis for nitrate by IC 300.0 and BOD by 405.1 are for information only. ERC acknowledges that the holding time may not be met.

(1) VOA - 8240A (SW-846) [2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene, Trichloromonofluoromethane]

Matrix *
S=Soil
SE=Sediment
SO=Solid
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X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (10/99)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-008-13	Page 2 of 3
Collector: Baechler/Cowgill/Johansen	Company Contact: K Maki	Telephone No.: 373-4989	Project Coordinator: TRENT, SJ	Price Code: 7N; Data Turnaround: 45 Days
Project Designation: 200-ZP-1 Process Sampling and Analysis - Bi-Weekly/Quart	Sampling Location: 200 West		SAF No.: B99-008	Air Quality ☐
Ice Chest No.: ERC 96-034	Field Logbook No.: EL-1330	COA: R20ZP1D760	Method of Shipment: FEDEX	
Shipped To: TMA/RECRA	Offsite Property No.: A010007		Bill of Lading/Air Bill No.: 42357953-0007	

POSSIBLE SAMPLE HAZARDS/REMARKS
Samples originated from non-RAD Controlled area. NOTA Required

Special Handling and/or Storage

Preservation	None	Cool 4C	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C					
Type of Container	P	P	P	P	aGs*					
No. of Container(s)	1	1	1	1	3					
Volume	125mL	500mL	500mL	1000mL	40mL					
SAMPLE ANALYSIS	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness - 130.2	BOD - 405.1	See item (1) in Special Instructions.					

	Sample No.	Matrix *	Sample Date	Sample Time										
7	B10LX6	WATER	10/25/00	1000	X	X	X	X	X					
8	B10LX7	WATER	10/25/00	1020	X	X	X	X	X					
9	B10LX8	WATER	10/25/00	1124	X	X	X	X	X					
0	B10LX9	WATER	10/25/00	1136	X	X	X	X	X					
1	B10LY0	WATER	10/25/00	1213	X	X	X	X	X					

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By	Date/Time	Received By	Date/Time
JA Cowgill/[signature]	10-25-00 / 1320	R. Thoren [signature]	1320 10/25/00
R. Thoren [signature]	1400 10/25/00	Stored in Ref 2C 3728	1400 10/25/00
Removed from Ref 2C 3728	0600 10/26/00	R. Thoren [signature]	0600 10/26/00
R. Thoren [signature]	1430 10/26/00	FEDEX	
FedEx	10/27/00 0915	[signature]	10/27/00 0915

SPECIAL INSTRUCTIONS
** Sample analysis for nitrate by IC 300.0 and BOD by 405.1 are for information only. ERC acknowledges that the holding time may not be met.

(1) VOA - 8240A (SW-846) {2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene, Trichloromonofluoromethane}

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T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (10/99)

H1109

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B99-008 H1109

DATE RECEIVED: 10/27/00 RFW LOT # :0010L069

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B10LY1						
BIOCHEMICAL OXYGEN D	001	W	00LIB032	10/25/00	10/27/00	11/01/00
NITRATE BY IC	001	W	00LIC067	10/25/00	10/28/00	10/28/00
NITRATE BY IC	001 REP	W	00LIC067	10/25/00	10/28/00	10/28/00
NITRATE BY IC	001 MS	W	00LIC067	10/25/00	10/28/00	10/28/00
HARDNESS	001	W	00LHD012	10/25/00	11/01/00	11/01/00
HARDNESS	001 REP	W	00LHD012	10/25/00	11/01/00	11/01/00
PH	001	W	00LPH092	10/25/00	10/30/00	10/30/00
PH	001 REP	W	00LPH092	10/25/00	10/30/00	10/30/00
B10LX1						
BIOCHEMICAL OXYGEN D	002	W	00LIB032	10/25/00	10/27/00	11/01/00
NITRATE BY IC	002	W	00LIC067	10/25/00	10/28/00	10/28/00
HARDNESS	002	W	00LHD012	10/25/00	11/01/00	11/01/00
PH	002	W	00LPH092	10/25/00	10/30/00	10/30/00
B10LX2						
BIOCHEMICAL OXYGEN D	003	W	00LIB032	10/25/00	10/27/00	11/01/00
NITRATE BY IC	003	W	00LIC067	10/25/00	10/28/00	10/28/00
HARDNESS	003	W	00LHD012	10/25/00	11/01/00	11/01/00
PH	003	W	00LPH092	10/25/00	10/30/00	10/30/00
B10LX3						
BIOCHEMICAL OXYGEN D	004	W	00LIB032	10/25/00	10/27/00	11/01/00
NITRATE BY IC	004	W	00LIC067	10/25/00	10/28/00	10/28/00
HARDNESS	004	W	00LHD012	10/25/00	11/01/00	11/01/00
PH	004	W	00LPH092	10/25/00	10/30/00	10/30/00
B10LX4						
BIOCHEMICAL OXYGEN D	005	W	00LIB032	10/25/00	10/27/00	11/01/00
NITRATE BY IC	005	W	00LIC067	10/25/00	10/28/00	10/28/00
HARDNESS	005	W	00LHD012	10/25/00	11/01/00	11/01/00

JAN 2001 RECEIVED

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B99-008 H1109

DATE RECEIVED: 10/27/00 RFW LOT # :0010L069

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
PH	005	W	00LPH092	10/25/00	10/30/00	10/30/00
B10LX5						
BIOCHEMICAL OXYGEN D	006	W	00LIB032	10/25/00	10/27/00	11/01/00
BOD 5 DAY	006 REP	W	00LIB032	10/25/00	10/27/00	11/01/00
NITRATE BY IC	006	W	00LIC067	10/25/00	10/28/00	10/28/00
HARDNESS	006	W	00LHD012	10/25/00	11/01/00	11/01/00
PH	006	W	00LPH092	10/25/00	10/30/00	10/30/00
B10LX6						
BIOCHEMICAL OXYGEN D	007	W	00LIB032	10/25/00	10/27/00	11/01/00
NITRATE BY IC	007	W	00LIC067	10/25/00	10/28/00	10/28/00
HARDNESS	007	W	00LHD012	10/25/00	11/01/00	11/01/00
PH	007	W	00LPH092	10/25/00	10/30/00	10/30/00
B10LX7						
BIOCHEMICAL OXYGEN D	008	W	00LIB032	10/25/00	10/27/00	11/01/00
NITRATE BY IC	008	W	00LIC067	10/25/00	10/28/00	10/28/00
HARDNESS	008	W	00LHD012	10/25/00	11/01/00	11/01/00
PH	008	W	00LPH092	10/25/00	10/30/00	10/30/00
B10LX8						
BIOCHEMICAL OXYGEN D	009	W	00LIB032	10/25/00	10/27/00	11/01/00
NITRATE BY IC	009	W	00LIC067	10/25/00	10/28/00	10/28/00
HARDNESS	009	W	00LHD012	10/25/00	11/01/00	11/01/00
PH	009	W	00LPH092	10/25/00	10/30/00	10/30/00
B10LX9						
BIOCHEMICAL OXYGEN D	010	W	00LIB032	10/25/00	10/27/00	11/01/00
NITRATE BY IC	010	W	00LIC067	10/25/00	10/28/00	10/28/00
HARDNESS	010	W	00LHD012	10/25/00	11/01/00	11/01/00
PH	010	W	00LPH092	10/25/00	10/30/00	10/30/00
B10LY0						
BIOCHEMICAL OXYGEN D	011	W	00LIB032	10/25/00	10/27/00	11/01/00

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B99-008 H1109

DATE RECEIVED: 10/27/00 RFW LOT # :0010L069

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRATE BY IC	011	W	00LIC067	10/25/00	10/28/00	10/28/00
HARDNESS	011	W	00LHD012	10/25/00	11/01/00	11/01/00
HARDNESS	011 REP	W	00LHD012	10/25/00	11/01/00	11/01/00
PH	011	W	00LPH092	10/25/00	10/30/00	10/30/00
PH	011 REP	W	00LPH092	10/25/00	10/30/00	10/30/00

LAB QC:

BIOCHEMICAL OXYGEN D	MB1	W	00LIB032	N/A	10/27/00	11/01/00
BOD 5 DAY	MB1 BS	W	00LIB032	N/A	10/27/00	11/01/00
NITRATE BY IC	MB1	W	00LIC067	N/A	10/28/00	10/28/00
NITRATE BY IC	MB1 BS	W	00LIC067	N/A	10/28/00	10/28/00
HARDNESS	MB1	W	00LHD012	N/A	11/01/00	11/01/00
HARDNESS	MB1 BS	W	00LHD012	N/A	11/01/00	11/01/00
HARDNESS	MB1 BSD	W	00LHD012	N/A	11/01/00	11/01/00

RECRA
ENVIRONMENTAL
INC.

Chemical and Environmental Measurement Information

Recra LabNet Philadelphia
Analytical Report

Client : TNU-HANFORD B99-008 H1109
RFW# : 0010L069

W.O. # : 10985-001-001-9999-00
Date Received: 10-27-00

INORGANIC CASE NARRATIVE

1. This narrative covers the analyses of 11 water samples.

2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary.

3. Sample holding times as required by the method and/or contract were met with the exception of pH which was received past hold and Biochemical Oxygen Demand (BOD) and Nitrate which were analyzed past hold.

4. The cooler temperatures were 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 with the exception of 00LIB032-MB1 for BOD which was below the 80-120% acceptance limits. The duplicate LCS for Hardness was within the 20% Relative Percent Difference (RPD) control limit.

7. The matrix spike recovery for Nitrate was within the 75-125% control limits.

8. The replicate analyses were within the 20% RPD control limit.

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
VP, Laboratory General Manager
Lionville Laboratory

12-14-00
Date

njp\i10-069

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 17 pages.

Recra LabNet Philadelphia

WET CHEMISTRY

METHODS GLOSSARY FOR WATER SAMPLE ANALYSIS

	EPA /600	SW846	OTHER
Acidity	___ 305.1		
___Alkalinity ___Bicarbonate ___Carbonate	___ 310.1		
BOD	✓ 405.1		___ 5210B (b)
Ion Chormatography:			
___Bromide ___Chloride ___Fluoride	___ 300.0	___ 9056	
✓ Nitrate ___Nitrite ___Phosphate	✓ 300.0	___ 9056	
___Sulfate ___Formate ___Acetate ___Oxalate	___ 300.0	___ 9056	
Chloride	___ 325.2	___ 9251	
Chorine, Residual	___ 330.5 (mod)		
Cyanide, Amenable to Chorination	___ 335.2	___ 9010B	
Cyanide, Total	___ 335.2	___ 9010B ___ 9014	___ ILMO4.0 (e)
Cyanide, Weak Acid Dissociable		___	___ 412 (a) ___ 4500CN-I (b
COD	___ 410.4(mod)		___ 5220C (b)
Color	___ 110.2		
Corrosivity by Coupon		___ 1110(mod)	
Chromium VI		___ 7196A	___ 3500Cr-D (b)
Fluoride	___ 340.2		___ 4500-FC
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 ___ Organic Nitrogen	___ 351.4		
Total___ Organic ___ Inorganic Carbon	___ 415.1	___ 9060	
Oil & Grease	___ 413.1	___ 9070	
✓ pH ___ pH; paper	___ 150.1	✓ 9040B ___ 9041A	
Petroleum Hydrocarbons, Total Recoverable	___ 418.1		
Phenol	___ 420.1 ___ 420.2	___ 9065 ___ 9066	
___Ortho ___Total Phosphate	___ 365.2		___ 4500-P B ___ C
Salinity			___ 210A (a) ___ 2520 (b)
Settleable Solids	___ 160.5		
Sulfide	___ 376.1 ___ 376.2	___ 9030B/9034 (acid soluble)	
Reactive ___Cyanide ___Sulfide		___ Section 7.3 (__9014__9030B)	
Silica	___ 370.1		
Sulfite	___ 377.1		
Sulfate	___ 375.4	___ 9038	
Specific Conductance	___ 120.1	___ 9050A	
Specific Gravity			___ D5057-90 ___ 213E (a)
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:	

Recra LabNet Philadelphia
METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).

b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).

c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).

d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).

e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.

f. Code of Federal Regulations.

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 11/06/00

CLIENT: TNUHANFORD B99-008 H1109

RECRA LOT #: 0010L069

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B10LY1	BOD 5 Day	1.0	u	MG/L	1.0	1.0
		Nitrate by IC	14		MG/L	1.2	5.0
		Hardness	101		MG/L	2.0	1.0
		pH	7.4		PH UNIT	0.01	1.0
-002	B10LX1	BOD 5 Day	1.2		MG/L	1.0	1.0
		Nitrate by IC	110		MG/L	5.0	20
		Hardness	198		MG/L	2.0	1.0
		pH	8.1		PH UNIT	0.01	1.0
-003	B10LX2	BOD 5 Day	1.0		MG/L	1.0	1.0
		Nitrate by IC	100		MG/L	5.0	20
		Hardness	220		MG/L	2.0	1.0
		pH	8.1		PH UNIT	0.01	1.0
-004	B10LX3	BOD 5 Day	1.0	u	MG/L	1.0	1.0
		Nitrate by IC	100		MG/L	5.0	20
		Hardness	210		MG/L	2.0	1.0
		pH	8.2		PH UNIT	0.01	1.0
-005	B10LX4	BOD 5 Day	1.4		MG/L	1.0	1.0
		Nitrate by IC	110		MG/L	5.0	20
		Hardness	206		MG/L	2.0	1.0
		pH	7.9		PH UNIT	0.01	1.0
-006	B10LX5	BOD 5 Day	1.0	u	MG/L	1.0	1.0
		Nitrate by IC	110		MG/L	5.0	20
		Hardness	196		MG/L	2.0	1.0
		pH	7.9		PH UNIT	0.01	1.0

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 11/06/00

CLIENT: TNUHANFORD B99-008 H1109 RECRA LOT #: 0010L069

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	B10LX6	BOD 5 Day	1.2	MG/L	1.0	1.0
		Nitrate by IC	92	MG/L	5.0	20
		Hardness	224	MG/L	2.0	1.0
		pH	7.8	PH UNIT	0.01	1.0
-008	B10LX7	BOD 5 Day	1.1	MG/L	1.0	1.0
		Nitrate by IC	91	MG/L	5.0	20
		Hardness	232	MG/L	2.0	1.0
		pH	7.8	PH UNIT	0.01	1.0
-009	B10LX8	BOD 5 Day	1.3	MG/L	1.0	1.0
		Nitrate by IC	120	MG/L	5.0	20
		Hardness	208	MG/L	2.0	1.0
		pH	7.8	PH UNIT	0.01	1.0
-010	B10LX9	BOD 5 Day	1.4	MG/L	1.0	1.0
		Nitrate by IC	330	MG/L	12	50
		Hardness	327	MG/L	2.0	1.0
		pH	7.8	PH UNIT	0.01	1.0
-011	B10LY0	BOD 5 Day	1.3	MG/L	1.0	1.0
		Nitrate by IC	85	MG/L	5.0	20
		Hardness	164	MG/L	2.0	1.0
		pH	7.6	PH UNIT	0.01	1.0

Recra LabNet - Lionville

INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/06/00

CLIENT: TNUHANFORD B99-008 H1109 RECRA LOT #: 0010L069

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	00LIB032-MB1	BOD 5 Day	1.0 u	MG/L	1.0	1.0
BLANK10	00LIC067-MB1	Nitrate by IC	0.25 u	MG/L	0.25	1.0
BLANK10	00LHD012-MB1	Hardness	1.0 u	MG/L	1.0	1.0

Recra LabNet - Lionville

INORGANICS ACCURACY REPORT 11/06/00

CLIENT: TNUHANFORD B99-008 H1109 RECRA LOT #: 0010L069

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B10LY1	Nitrate by IC	39	14	25	101.6	5.0
BLANK10	00LIB032-MB1	BOD 5 Day	160	1.0 u	200	79.8	1.0
BLANK10	00LIC067-MB1	Nitrate by IC	5.0	0.25u	5.0	99.9	1.0
BLANK10	00LHD012-MB1	Hardness	39.6	1.0 u	40.0	99.0	1.0
		Hardness MSD	40.6	1.0 u	40.0	101.5	1.0

Recra LabNet - Lionville

INORGANICS DUPLICATE SPIKE REPORT 11/06/00

CLIENT: TNUHANFORD B99-008 H1109 RECRA LOT #: 0010L069

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

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
BLANK10	00LHD012-MB1	Hardness	99.0	101.5	2.5

Recra LabNet - Lionville

INORGANICS PRECISION REPORT 11/06/00

CLIENT: TNUHANFORD B99-008 H1109 RECRA LOT #: 0010L069

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
~001REP	B10LY1	Nitrate by IC	14	13	3.0	5.0
		Hardness	101	105	3.8	1.0
		pH	7.4	7.8	5.1	1.0
~006REP	B10LX5	BOD 5 Day	1.0 u	1.0	NC	1.0
~011REP	B10LY0	Hardness	164	176	7.0	1.0
		pH	7.6	7.7	1.4	1.0

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RECRA LabNet Use Only
00106069

Custody Transfer Record/Lab Work Request

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ALL FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: TNU- HANFORD SAF# B99-008
Est. Final Proj. Sampling Date:
Project #: 10985-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: OJ
QC: Spec Del: Std TAT: 30 day
Date Rec'd: 10-27-00 Date Due: 11-26-00
Account #:

		A-C									D		E	F		G
Refrigerator #		1									4		4	4		4
#/Type Container	Liquid	3GL									1PL		1PL	1PL		1PL
	Solid															
Volume	Liquid	40									500		500	125		1LT
	Solid															
Preservatives		—									—		—	—		—
ANALYSES REQUESTED		ORGANIC: VOA	BNA	Pest/PCB	Herb				INORG: Metal	CN	IC Anions		Hardness	PH		BOD

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 (✓) MS	MSD	Matrix	Date Collected	Time Collected	CO2HX									ICNO3		IHARD	IPH		IBOD5
001	BIOLYI			W	10-25-00	1200	3									1		1	1		1
002	X1					0818	3									1		1	1		1
003	2					0849	3									1		1	1		1
004	3					0915	3									1		1	1		1
005	4					0933	3									1		1	1		1
006	5					0933	3									1		1	1		1
007	6					1000	3									1		1	1		1
008	7					1020	3									1		1	1		1
009	8					1124	3									1		1	1		1
010	9					1136	3									1		1	1		1

Special Instructions: Saf B99-008

Run Matrix QC
BOD's rec'd in hold - 001, 004-011
BOD's rec'd out of hold - 002, 003

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

RECRA LabNet Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill # [signature]
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 PH Some BOD

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

Relinquished by	Received by	Date	Time
[signature]	[signature]	10-27-00	0915

Relinquished by	Received by	Date	Time
COMPOSITE WASTE		ORIGINAL REWRITTEN	

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:
4235 7954 0018

4235 7953 9996

RECRA LabNet Use Only
0010L069

Custody Transfer Record/Lab Work Request

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FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: TNU-HANFORD B99-008
Est. Final Proj. Sampling Date:
Project #:
Project Contact/Phone #:
RECRA Project Manager:
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Page 1

		A-C									D		E	F		G
Refrigerator #		1									4		4	4		4
#/Type Container	Liquid	36L									1PL		1PL	1PL		1PL
	Solid															
Volume	Liquid	40									500		500	125		1LT
	Solid															
Preservatives		—									—		—	—		—
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb				INORG: Metal	CN	Se Pb Cd		Na Fe Ni	PH		BOD
		RECRA LabNet Use Only														
		OL024X									ICNO3		IHARD	IPH		IBOD5
Lab ID	Client ID/Description															
011	BIOLYO	3									1		1	1		1

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

Special Instructions:

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

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
Ed Eo	[illegible]	10/27/00	0915				

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

RECRA LabNet Use Only

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

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

0010L009

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-008-13	Page 3 of 3
Collector: Baechler/Cowgill/Johansen	Company Contact: K Maki	Telephone No.: 373-4989	Project Coordinator: TRENT, SJ	Price Code: 7N; Data Turnaround: 45 Days
Project Designation: 200-ZP-1 Process Sampling and Analysis - Bi-Weekly/Quart	Sampling Location: 200 West		SAF No.: B99-008	Air Quality ☐
Ice Chest No.: ERC 96-044	Field Logbook No.: EL-1330	COA: R20ZP1D760	Method of Shipment: FED EX	
Shipped To: TMA/RECRA	Offsite Property No.: A010007		Bill of Lading/Air Bill No.: 42357953 - ~~0007~~ 0018 RT 10/26/	

POSSIBLE SAMPLE HAZARDS/REMARKS
Samples originated from non Rad Controlled area. NOT# Required

Special Handling and/or Storage

Preservation	F None	D Cool 4C	E HNO3 to pH <2	G Cool 4C	A-C HCl to pH <2 Cool 4C					
Type of Container	P	P	P	P	aGs*					
No. of Container(s)	1	1	1	1	3					
Volume	125mL	500mL	500mL	1000mL	40mL					
SAMPLE ANALYSIS	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness - 130.2	BOD - 405.1	See item (1) in Special Instructions					

Sample No.	Matrix *	Sample Date	Sample Time										
301 B10LY1	WATER	10/25/00	1200	X	X	X	X	X					

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By: JA Cowgill / Jason Cowgill	Date/Time: 10-25-00/1320	Received By: R. Thoren	Date/Time: 1320 10/25/00
Relinquished By: R. Thoren	Date/Time: 1400 10/25/00	Received By: Storedin Ref 2C 3728	Date/Time: 1400 10/25/00
RT Relinquished By: Removed from Ref 2C 3728	Date/Time: 0600 10/26/00	Received By: R. Thoren	Date/Time: 0600 10/26/00
Relinquished By: R. Thoren	Date/Time: 1430 10/26/00	Received By: FED EX	Date/Time:
Relinquished By: Fed Ex	Date/Time: 10/27/00 0915	Received By: [signature]	Date/Time: 10-27-00 0915
Relinquished By:	Date/Time:	Received By:	Date/Time:

SPECIAL INSTRUCTIONS
** Sample analysis for nitrate by IC 300.0 and BOD by 405.1 are for information only. ERC acknowledges that the holding time may not be met.

(1) VOA - 8240A (SW-846) (2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene, Trichloromonofluoromethane)

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (10/99)

1E

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-008-13	Page 1 of 3
Collector: Baechler/Cowgill/Johansen	Company Contact: K Maki	Telephone No.: 373-4989	Project Coordinator: TRENT, SJ	Price Code: 7N; Data Turnaround: 45 Days
Project Designation: 200-ZP-1 Process Sampling and Analysis - Bi-Weekly/Quart	Sampling Location: 200 West		SAF No.: B99-008	Air Quality ☐
Ice Chest No.: ERC 99-052	Field Logbook No.: EL-1330	COA: R20ZP1D760	Method of Shipment: FEDEX	
Shipped To: TMA/RECRA	Offsite Property No.: A010007		Bill of Lading/Air Bill No.: 42357953-9996	

POSSIBLE SAMPLE HAZARDS/REMARKS
Samples originated from non RAD Controlled area. NOTA Required

Special Handling and/or Storage

Preservation	None	Cool 4C	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C					
Type of Container	P	P	P	P	aGs*					
No. of Container(s)	1	1	1	1	3					
Volume	125mL	500mL	500mL	1000mL	40mL					
SAMPLE ANALYSIS	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness - 130.2	BOD - 405.1	See item (1) in Special Instructions.					

	Sample No.	Matrix *	Sample Date	Sample Time										
002	B10LX1	WATER	10/25/00	0818	X	X	X	X	X					
003	B10LX2	WATER	10/25/00	0849	X	X	X	X	X					
004	B10LX3	WATER	10/25/00	0915	X	X	X	X	X					
005	B10LX4	WATER	10/25/00	0933	X	X	X	X	X					
006	B10LX5	WATER	10/25/00	0933	X	X	X	X	X					

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By: [signature]	Date/Time: 10/25/00 1320	Received By: R. Thoren [signature]	Date/Time: 10/25/00 1320
Relinquished By: R Thoren [signature]	Date/Time: 10/25/00 1400	Received By: STORED IN Ref 2C 3728	Date/Time: 10/25/00 1400
RT 0/25/00 Relinquished By: Removed from Ref 2C 3728	Date/Time: 10/26/00 0600	Received By: R. Thoren [signature]	Date/Time: 10/26/00 0600
Relinquished By: R Thoren [signature]	Date/Time: 10/26/00 1430	Received By: FEDEX	Date/Time:
Relinquished By: FedEx	Date/Time: 10/27/00 0915	Received By: [signature]	Date/Time: 10-27-00 0915
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
** Sample analysis for nitrate by IC 300.0 and BOD by 405.1 are for information only. ERC acknowledges that the holding time may not be met.

(1) VOA - 8240A (SW-846) (2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene, Trichloromonofluoromethane)

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (10/99)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-008-13	Page 2 of 3

Collector: Baechler/Cowgill/Johansen	Company Contact: K Maki	Telephone No.: 373-4989	Project Coordinator: TRENT, SJ
Price Code: 7N	Data Turnaround: 45 Days	Air Quality: [ ]	
Project Designation: 200-ZP-1 Process Sampling and Analysis - Bi-Weekly/Quart	Sampling Location: 200 West		SAF No.: B99-008
Ice Chest No.: ERC96-034	Field Logbook No.: EL-1330	COA: R20ZP1D760	Method of Shipment: FEDEX
Shipped To: TMA/RECRA	Offsite Property No.: A010007		Bill of Lading/Air Bill No.: 4235453-0007

POSSIBLE SAMPLE HAZARDS/REMARKS
Samples originated from non-RAD Controlled area. NOTA Required

Special Handling and/or Storage

Preservation	None	Cool 4C	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C					
Type of Container	P	P	P	P	aGs*					
No. of Container(s)	1	1	1	1	3					
Volume	125mL	500mL	500mL	1000mL	40mL					
SAMPLE ANALYSIS	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness - 130.2	BOD - 405.1	See item (1) in Special Instructions.					

	Sample No.	Matrix *	Sample Date	Sample Time										
007	B10LX6	WATER	10/25/00	1000	X	X	X	X	X					
008	B10LX7	WATER	10/25/00	1020	X	X	X	X	X					
009	B10LX8	WATER	10/25/00	1124	X	X	X	X	X					
010	B10LX9	WATER	10/25/00	1136	X	X	X	X	X					
011	B10LY0	WATER	10/25/00	1213	X	X	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: J Morgan/Cowgill	Date/Time: 10-25-00/1320	Received By: R. Thorem	Date/Time: 1320 10/25/00
Relinquished By: R. Thorem	Date/Time: 1400 10/25/00	Received By: Sierra Lin / Rel 2C 3728	Date/Time: 1400 10/25/00
RT 10/26 Relinquished By: Removed from Rel 2C 3728	Date/Time: 0600 10/26/00	Received By: R. Thorem	Date/Time: 0600 10/26/00
Relinquished By: R. Thorem	Date/Time: 1430 10/26/00	Received By: FEDEX	Date/Time:
Relinquished By: FedEx	Date/Time: 10/27/00 0915	Received By: [signature]	Date/Time: 10/27/00 0915
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
** Sample analysis for nitrate by IC 300.0 and BOD by 405.1 are for information only. ERC acknowledges that the holding time may not be met.

(1) VOA - 8240A (SW-846) {2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene, Trichloromonofluoromethane}

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (10/99)