

Lionville Laboratory, Inc.
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD X03-047 H2305

DATE RECEIVED: 08/05/03

LVL LOT # :0308L065

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
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B17B21

TOTAL ORGANIC CARBON	001	W	03LTC028	07/31/03	08/12/03	08/12/03
TOTAL ORGANIC CARBON	001 REP	W	03LTC028	07/31/03	08/12/03	08/12/03
TOTAL ORGANIC CARBON	001 MS	W	03LTC028	07/31/03	08/12/03	08/12/03

B17B16

TOTAL ORGANIC CARBON	002	W	03LTC028	07/31/03	08/12/03	08/12/03
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B17B17

TOTAL ORGANIC CARBON	003	W	03LTC028	07/31/03	08/12/03	08/12/03
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B17B18

TOTAL ORGANIC CARBON	004	W	03LTC028	07/31/03	08/12/03	08/12/03
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B17B19

TOTAL ORGANIC CARBON	005	W	03LTC028	07/31/03	08/12/03	08/12/03
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LAB QC:

TOTAL ORGANIC CARBON	MB1	W	03LTC028	N/A	08/12/03	08/12/03
TOTAL ORGANIC CARBON	MB1 BS	W	03LTC028	N/A	08/12/03	08/12/03



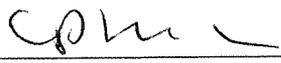
Analytical Report

Client: TNU-HANFORD X03-047 H2305
LVL#: 0308L065

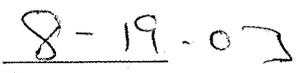
W.O.#: 11343-606-001-9999-00
Date Received: 08-05-03

INORGANIC NARRATIVE

1. This narrative covers the analysis of 5 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 met.
4. The results presented in this report are derived from samples that did not meet LvLI's sample acceptance policy as noted on the Sample Receipt Checklist.
5. The method blank was within the method criteria.
6. The Laboratory Control Sample (LCS) was within the laboratory control limits.
7. The matrix spike recovery for sample B17B21 was within the 75-125% control limits.
8. The replicate analysis was within the 20% Relative Percent Difference (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 package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.



Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated



Date

njp\08-065

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 12 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR WATER SAMPLE ANALYSIS

	<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	
___Nitrate ___Nitrite ___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	___ 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	351.3		
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		___ 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:	

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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.

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INORGANICS DATA SUMMARY REPORT 08/18/03

CLIENT: TNUHANFORD X03-047 H2305
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0308L065

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-001	B17B21	Total Organic Carbon	0.50 u	MG/L	0.50	1.0
-002	B17B16	Total Organic Carbon	0.66	MG/L	0.50	1.0
-003	B17B17	Total Organic Carbon	0.63	MG/L	0.50	1.0
-004	B17B18	Total Organic Carbon	0.69	MG/L	0.50	1.0
-005	B17B19	Total Organic Carbon	0.61	MG/L	0.50	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 08/18/03

CLIENT: TNUHANFORD X03-047 H2305
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0308L065

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
BLANK10	03LTC028-MB1	Total Organic Carbon	0.50 u	MG/L	0.50	1.0

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INORGANICS ACCURACY REPORT 08/18/03

CLIENT: TNUHANFORD X03-047 H2305
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0308L065

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
=====	=====	=====	=====	=====	=====	=====	=====
-001	B17B21	Total Organic Carbon	5.3	0.24	5.0	100.3	1.0
BLANK10	03LTC028-MB1	Total Organic Carbon	4.9	0.50u	5.0	98.8	1.0

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INORGANICS PRECISION REPORT 08/18/03

CLIENT: TNUHANFORD X03-047 H2305
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0308L065

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
=====	=====	=====	=====	=====	=====	=====
-001REP	B17E21	Total Organic Carbon	0.50u	0.50u	NC	1.0

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

X03-047-2

Page 1 of 1

Collector L.D. WALL	Contact/Requester DL STEWART <i>SDG H2305</i>	Telephone No. 509-376-5056	MSIN FAX
SAF No. X03-047	Sampling Origin HANFORD SITE	Purchase Order/Charge Code	
Project Title RCRA VERIFICATION SAMPLING, JULY 2003	Logbook No. <i>SAWS-473</i>	Ice Chest No. <i>SAWS-075</i>	Temp.
Shipped To (Lab) EBERLINE SERVICES (Formerly TMA)	Method of Shipment GOVT. VEHICLE	Bill of Lading/Air Bill No. <i>7916 4348 4463</i>	
Protocol SURV	Data Turnaround 15 Days	PRIORITY	
POSSIBLE SAMPLE HAZARDS/REMARKS ** **		SPECIAL INSTRUCTIONS Hold Time TOTAL ACTIVITY EXEMPTION APPLIES Batch samples submitted under this SAF into one SDG, not to exceed rapid turnaround time.	
		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B17B16		W	<i>7-31-03</i>	<i>1016</i>	1x20-mL P	Activity Scan	None
B17B16		W	↓	↓	1x250-mL aGs*	TOC - 9060	HCl or H2SO4 to pH <2 Cool 4C
B17B17		W	↓	↓	1x250-mL aGs*	TOC - 9060	HCl or H2SO4 to pH <2 Cool 4C
B17B18		W	↓	↓	1x250-mL aGs*	TOC - 9060	HCl or H2SO4 to pH <2 Cool 4C
B17B19		W	↓	↓	1x250-mL aGs*	TOC - 9060	HCl or H2SO4 to pH <2 Cool 4C

Relinquished By L.D. WALL <i>L.D. Wall</i>	Print	Sign	Date/Time <i>140</i>	Received By <i>Fed Ex</i>	Print	Sign	Date/Time <i>7-31-03</i>	Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SI = Sludge WT = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By <i>Fed Ex</i>			Date/Time <i>8-1-03 9:30</i>	Received By <i>JRL DVS0 JRCorson</i>			Date/Time <i>8-1-03 9:30</i>	
Relinquished By <i>JRL DVS0 JRCorson</i>			Date/Time <i>8-4-03 17:00</i>	Received By <i>Fed Ex</i>			Date/Time <i>8-4-03 17:00</i>	
Relinquished By <i>Fed Ex</i>			Date/Time <i>8/5/03 0915</i>	Received By <i>J Perry</i>			Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By	Date/Time

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TKU Hartford
 Purchase Order/Project:

DATE: 8/5/03

SAF# / SOW# / Release #: X03-047

Laboratory SDG #: 0308L065

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
1. Custody seals on coolers or shipping container intact, signed and dated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Outside of coolers or shipping containers are free from damage?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Airbill # recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Sample containers are intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Custody seals on sample containers intact, signed and dated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. All samples on coc received?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. All sample label information matches coc?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10. Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Where applicable, bar code labels are affixed to coc?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12. coc signed and dated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. coc will be faxed or emailed to client?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Project Manager/Client contacted concerning discrepancies? (name/date)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

MP 8/5/03

1

Cooler # / temp (°C) and Comments:

#SAWS-035 / 5.6°C

1 headspace present in bottles.

Laboratory Sample Custodian: J Perry 8/5/03 0915

Laboratory Project Manager: