

Lionville Laboratory, Inc.
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD S05-004 H3182

DATE RECEIVED: 05/26/05

LVL LOT # :0505L609

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

B1CYF3

TOTAL ORGANIC CARBON	001	W	05LTC015	05/25/05	06/07/05	06/07/05
TOTAL ORGANIC CARBON	001 REP	W	05LTC015	05/25/05	06/07/05	06/07/05
TOTAL ORGANIC CARBON	001 MS	W	05LTC015	05/25/05	06/07/05	06/07/05

B1CYF4

TOTAL ORGANIC CARBON	002	W	05LTC015	05/25/05	06/07/05	06/07/05
----------------------	-----	---	----------	----------	----------	----------

B1CYF5

TOTAL ORGANIC CARBON	003	W	05LTC015	05/25/05	06/07/05	06/07/05
----------------------	-----	---	----------	----------	----------	----------

B1CYF6

TOTAL ORGANIC CARBON	004	W	05LTC015	05/25/05	06/07/05	06/07/05
----------------------	-----	---	----------	----------	----------	----------

LAB QC:

TOTAL ORGANIC CARBON	MB1	W	05LTC015	N/A	06/07/05	06/07/05
TOTAL ORGANIC CARBON	MB1 BS	W	05LTC015	N/A	06/07/05	06/07/05



Analytical Report

Client: TNU-HANFORD S05-004 H3182
LVL#: 0505L609

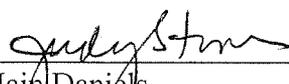
W.O.#: 11343-606-001-9999-00
Date Received: 05-26-05

INORGANIC NARRATIVE

1. This narrative covers the analysis of 4 water samples.
2. The samples were prepared and analyzed in accordance with the method checked on the attached glossary.

LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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 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

6/21/05
Date

njp05-609

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 11 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:	

Lionville Laboratory Incorporated

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.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/10/05

CLIENT: TNUHANFORD S05-004 H3182
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0505L609

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-001	B1CYF3	Total Organic Carbon	2.1	MG/L	0.50	1.0
-002	B1CYF4	Total Organic Carbon	2.0	MG/L	0.50	1.0
-003	B1CYF5	Total Organic Carbon	2.1	MG/L	0.50	1.0
-004	B1CYF6	Total Organic Carbon	2.0	MG/L	0.50	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/10/05

CLIENT: TNUHANFORD S05-004 H3182
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0505L609

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	05LTC015-MB1	Total Organic Carbon	0.50 u	MG/L	0.50	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 06/10/05

CLIENT: TNUHANFORD S05-004 H3182
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0505L609

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	B1CYF3	Total Organic Carbon	7.4	2.1	5.0	105.9	1.0
BLANK10	05LTC015-MB1	Total Organic Carbon	5.1	0.50u	5.0	102.6	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 06/10/05

CLIENT: TNUHANFORD S05-004 H3182
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0505L609

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
=====	=====	=====	=====	=====	=====	=====
-001REP	B1CYF3	Total Organic Carbon	2.1	2.0	3.2	1.0

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S05-004-142**

Page 1 of 1

10

Collector D.R. BREWINGTON		Contact/Requester DL STEWART	Telephone No. 509-376-5056	MSIN FAX
IAF No. S05-004		Sampling Origin HANFORD SITE	Purchase Order/Charge Code	
Project Title SURV/LTMC GW MONITORING, APRIL 2005		Ice Chest No. SAWS 210	Temp.	
Shipped To (Lab) Lionville Laboratory Incorporated		Method of Shipment GOVT. VEHICLE	Bill of Lading/Air Bill No. 79052435-157P	
Protocol SURV		Priority: 45 Days	Offsite Property No.	

POSSIBLE SAMPLE HAZARDS/REMARKS ** **	SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> A, G, I, S, and W SAFS may be grouped into one SDG to facilitate analytical batching, not to exceed SDG closure of 14 days. Submit invoices & deliverables to DL Stewart, PNNL.
---	---

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CYF3		W	5-25-05	1100	1x20-mL P	Activity Scan	None
B1CYF3		W	↓	↓	1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool 4C
B1CYF4		W	↓	↓	1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool 4C
B1CYF5		W	↓	↓	1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool 4C
B1CYF6		W	↓	↓	1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool 4C

Relinquished By D.R. BREWINGTON Relinquished By FedEx Relinquished By FedEx Relinquished By Date/Time Date/Time Date/Time	Sign [Signature] Sign [Signature] Sign [Signature]	Date/Time MAY 25 2005 Date/Time 5/25/05 1000 Date/Time Date/Time Date/Time	Received By FedEx Received By K. Cione Received By Date/Time Date/Time Date/Time	Matrix * S = Soil DS = Drum Solid SF = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
--	---	--	---	--

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 (SRC)

CLIENT: TNU-Hanford

Date: 5/26/05

Purchase Order / Project# /
 SAF# / SOW# / Release #:

LvLI Batch #: 0505LE09

Sample Custodian: H. Cione

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | | |
|---|---|--|--|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier | Fed Ex | Airbill# 7905 2435 1578 |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals Comments |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 5. Samples received cooled or ambient? | Temp | 2.8 °C | Cooler # SAWS-210 |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 11. Samples properly preserved? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 13. VOA, TOC, TOX free of headspace? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A headspace in 001-004 |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | see # 13 |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Discrepancies |