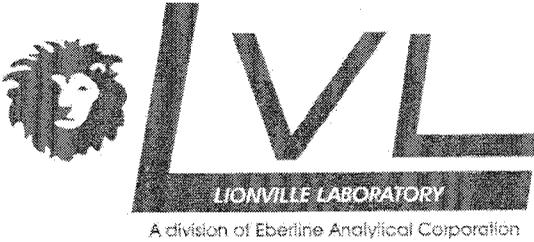


OCTOBER 03, 2012



264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

3 October 2012

Mr. Scot Fitzgerald
CH2M Hill Plateau Remediation Company
P.O. Box 1600
Mail Stop - B6-06
Richland, WA 99352

Subject: Contract No. 630 - Analytical Data Package

Dear Mr. Fitzgerald:

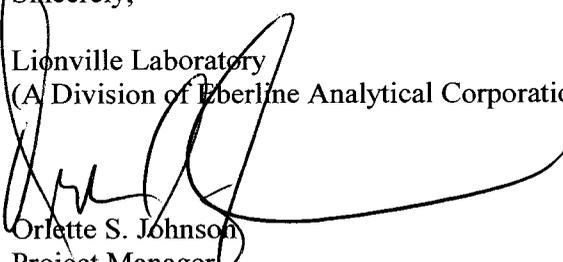
Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvL Batch #	1209019
SDG #	L0047
SAF #	X12-040
Date Received	09/07/2012
# Samples	7
Matrix	Water
Volatiles	
Semivolatiles	
Pest/PCB	
DRO/GRO/KRO	
PAH	
Acrylamide	
Metals	
Inorganics	X

The electronic data deliverable (EDD) has been uploaded to EDDPro. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,

Lionville Laboratory
(A Division of Eberline Analytical Corporation)


Orlette S. Johnson
Project Manager

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.

OCTOBER 03, 2012

CHAIN OF CUSTODY

000000002

CH2M Hill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # X12-040-020
		Page 1 of 1

Collector L.D. Wall CHPRC	Contact/Requester WATERS-HUSTED, K	Telephone No. 376-4650
SAF No. X12-040	Sampling Origin HANFORD SITE	Purchase Order/Charge Code 300071ES20
Project Title Special Sampling GW Sitewide, July 201	Logbook No. HNF-N-506 49/62	Ice Chest No. GWS-294
Shipped To (Lab) Lionville Laboratory Incorporated	Method of Shipment Commercial Carrier	Bill of Lading/Air Bill No. 17989 08478881
Protocol SURV	Priority: 45 Days <i>30 days 9/12/12 per client</i>	Offsite Property No. 4011

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CRF but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes No
 Site Wide Generator Knowledge Information Form applies.
 The CACN for all analytical work at WSCF is 401647.

Sample No.	Filter	*	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2LTM6	N	W	9/6/12	1000	1x250-mL aG	9060_TOC: TOC (1)	28 Days	HCl or H2SO4 to pH <2/Cool-4C
B2LTM4	N	W	↓	↓	1x250-mL aG	9060_TOC: TOC (1)	28 Days	HCl or H2SO4 to pH <2/Cool-4C
B2LTM8	N	W	↓	↓	1x20-mL P	Activity Scan	6 Months	None
B2LTM8	N	W	↓	↓	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	48 Hours	Cool-4C
B2LTM7	N	W	↓	↓	1x250-mL aG	9060_TOC: TOC (1)	28 Days	HCl or H2SO4 to pH <2/Cool-4C
B2LTM5	N	W	↓	↓	1x250-mL aG	9060_TOC: TOC (1)	28 Days	HCl or H2SO4 to pH <2/Cool-4C

OCTOBER 03, 2012

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Relinquished By L.D. Wall CHPRC	Print <i>L.D. Wall</i>	Sign <i>L.D. Wall</i>	Date/Time SEP 06 2012 1400	Received By FEDEX	Print <i>FEDEX</i>	Sign <i>FEDEX</i>	Date/Time SEP 06 2012 1400	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquids SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other	
Relinquished By FEDE			Date/Time 9-7-12 0955	Received By <i>VICTOR HERNANDEZ</i>			Date/Time 9-7-12 0955		
Relinquished By			Date/Time	Received By			Date/Time		
Relinquished By			Date/Time	Received By			Date/Time		
FINAL SAMPLE DISPOSITION				Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By	Date/Time

CH2M Hill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # X12-040-021
		Page 1 of 1

Collector L.D. Wall CHPRC	Contact/Requester WATERS-HUSTED, K	Telephone No. 376-4650
SAF No. X12-040	Sampling Origin HANFORD SITE	Purchase Order/Charge Code 300071ES20
Project Title Special Sampling GW Sitewide, July 201	Logbook No. HNF-N-506 49/62	Ice Chest No. 6WS-294
Shipped To (Lab) Lionville Laboratory Incorporated	Method of Shipment Commercial Carrier	Bill of Lading/Air Bill No. 798908478881
Protocol SURV	Priority: 45 Days	Offsite Property No. 401

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CRF but are not releasable per DOE Order 5400 5 (1990/1993)

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes No
 Site Wide Generator Knowledge Information Form applies.
 The CACN for all analytical work at WSCF is 401647.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2LTM9	N	W	9/6/12	1000	1x20-mL P	Activity Scan	6 Months	None
B2LTM9	N	W	↓	↓	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	48 Hours	Cool-4C

OCTOBER 03, 2012

000000005

Relinquished By L.D. Wall CHPRC	Print <i>L.D. Wall</i>	Sign <i>L.D. Wall</i>	Date/Time SEP 06 2012 1400	Received By FEDEX	Print	Sign	Date/Time	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquids SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By <i>FedEx</i>			Date/Time 9-7-12 0955	Received By <i>Victor Hernandez</i>			Date/Time 9-7-10 0955	
Relinquished By			Date/Time	Received By			Date/Time	
Relinquished By			Date/Time	Received By			Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By			Date/Time	

OCTOBER 03, 2012

Lionville Laboratory
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: CHPRC
Project/SAF/SOW/Release #: X12-040

Date: 9/17/12

LvL Batch #: 1209019

Sample Custodian: [Signature]

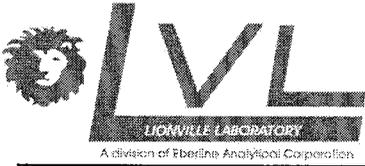
NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or <u>Shipped?</u>	Carrier <u>Fed Ex</u>	Airbill # <u>79890487 8881</u>
2. Custody Seals on coolers or shipping containers intact, signed & dated?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
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 & 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 <u>2.1</u> °C	Cooler # <u>GWS-294</u>
How was the temperature taken?	<input checked="" type="checkbox"/> IR	<input type="checkbox"/> Temp. Blank
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> Other (Specify):
6. Custody seals on sample containers intact, signed and dated?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
7. COC (Client & LvL) signed & 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?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
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? (If #5 is no, then this is no.)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
12. Samples received within hold times?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
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 type="checkbox"/> No
14. QC stickers placed on bottles designated by client?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
15. Shipment meets LvL Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
16. Project Manager contacted concerning any discrepancies?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Person Contacted _____	Date _____	<input checked="" type="checkbox"/> N/A

OCTOBER 03, 2012

WET CHEMISTRY

OCTOBER 03, 2012



Lionville Laboratory, PADEP Lab ID# 15-00009
264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

CHPRC Hanford
PO Box 1600, Mail Stop - R3-60
Richland WA, 99352

Project: X12-040
Project Number: L0047
Project Manager: Scot Fitzgerald

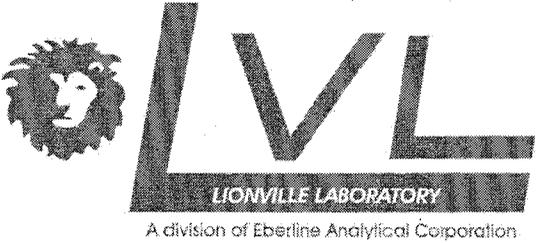
Reported:
09/27/2012 17:32

Analytical Report for Wet Chemistry

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B2LTM6	1209019-01	Water	09/06/2012 10:00	09/07/2012 09:55
B2LTM4	1209019-02	Water	09/06/2012 10:00	09/07/2012 09:55
B2LTM8	1209019-03	Water	09/06/2012 10:00	09/07/2012 09:55
B2LTM7	1209019-04	Water	09/06/2012 10:00	09/07/2012 09:55
B2LTM5	1209019-05	Water	09/06/2012 10:00	09/07/2012 09:55
B2LTM9	1209019-06	Water	09/06/2012 10:00	09/07/2012 09:55
B2LTN0	1209019-07	Water	09/06/2012 10:00	09/07/2012 09:55

000000009

OCTOBER 03, 2012



264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
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Case Narrative

Client: CHPRC HANFORD X12-040
LVL#: 1209019

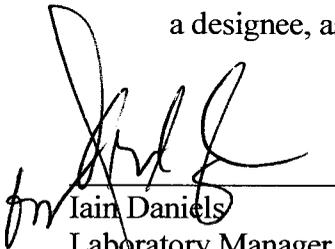
Date Received: 09-07-12

INORGANIC NARRATIVE

1. This narrative covers the analyses of 7 water samples.
2. The samples were prepared and analyzed in accordance with the methods indicated on the data summary report.

Lionville Lab (LvL) is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

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 met LvL's sample acceptance policy.
5. The method blanks were within the method criteria.
6. The Laboratory Control Samples (LCS) were within the laboratory control limits.
7. The matrix spike recoveries were within the 75-125% or 80-120% control limits as noted in the Analytical Report.
8. The replicate analyses were 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.

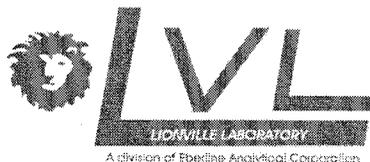


Iain Daniels
Laboratory Manager
Lionville Laboratory

njpi09-019

10/3/12
Date

OCTOBER 03, 2012



Lionville Laboratory, PADEP Lab ID# 15-00009
264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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CHPRC Hanford
PO Box 1600, Mail Stop - R3-60
Richland WA, 99352

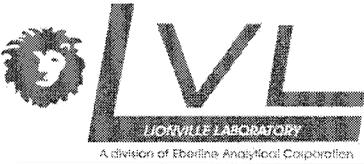
Project: X12-040
Project Number: L0047
Project Manager: Scot Fitzgerald

Reported:
09/27/2012 17:32

Notes and Definitions

- U Analyte included in the analysis, but not detected
- D Results reported from a dilution; related reporting limits are elevated due to the presence of an interference or a high target value.
- B Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
- * Value outside QC acceptance criteria
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- Dry Sample results reported on a dry weight basis
- Wet Sample results reported on a wet weight basis
- RPD Relative Percent Difference
- LOD Limit of Detection (LOD): the minimum estimated concentration of a target analyte that can be detected reliably. Concentrations at the LOD or between the LOD and LOQ are flagged estimated with either a 'J' qualifier or client-specific qualifier.
- LOQ Limit of Quantitation (LOQ): the minimum concentration of a target analyte that can be quantified reliably

OCTOBER 03, 2012



Lionville Laboratory, PADEP Lab ID# 15-00009
264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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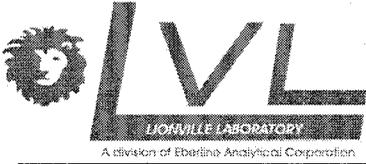
CHPRC Hanford PO Box 1600, Mail Stop - R3-60 Richland WA, 99352	Project: X12-040 Project Number: L0047 Project Manager: Scot Fitzgerald	Reported: 09/27/2012 17:32
-----------------------------------------------------------------------	-------------------------------------------------------------------------------	-------------------------------

Wet Chemistry
Lionville Laboratory

Analyte	Result and Qualifier	LOD	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method
B2LTM6 (1209019-01) Water									
Total Organic Carbon	2.30	0.20	1.00	mg/L	1	L209186	09/25/2012 10:30	09/25/2012 11:20	SW846 9060
B2LTM4 (1209019-02) Water									
Total Organic Carbon	2.10	0.20	1.00	mg/L	1	L209186	09/25/2012 10:30	09/25/2012 11:20	SW846 9060
B2LTM8 (1209019-03) Water									
Chloride	61.0 D	1.00	2.00	mg/L	10	L209103	09/07/2012 09:41	09/07/2012 10:26	EPA 300.0 (1993)
Fluoride	2.19 D	0.20	1.00	mg/L	2	L209103	09/07/2012 09:41	09/07/2012 10:26	EPA 300.0 (1993)
Nitrate as N	1.50	0.02	0.11	mg/L	1	L209103	09/07/2012 09:41	09/07/2012 10:26	EPA 300.0 (1993)
Nitrite as N	0.15 U	0.15	0.75	mg/L	5	L209103	09/07/2012 09:41	09/07/2012 10:26	EPA 300.0 (1993)
Sulfate	13.8 D	0.20	1.00	mg/L	2	L209103	09/07/2012 09:41	09/07/2012 10:26	EPA 300.0 (1993)
B2LTM7 (1209019-04) Water									
Total Organic Carbon	2.26	0.20	1.00	mg/L	1	L209186	09/25/2012 10:30	09/25/2012 11:20	SW846 9060
B2LTM5 (1209019-05) Water									
Total Organic Carbon	2.15	0.20	1.00	mg/L	1	L209186	09/25/2012 10:30	09/25/2012 11:20	SW846 9060
B2LTM9 (1209019-06) Water									
Chloride	61.4 D	1.00	2.00	mg/L	10	L209103	09/07/2012 09:41	09/07/2012 10:26	EPA 300.0 (1993)
Fluoride	2.13 D	0.20	1.00	mg/L	2	L209103	09/07/2012 09:41	09/07/2012 10:26	EPA 300.0 (1993)
Nitrate as N	1.49	0.02	0.11	mg/L	1	L209103	09/07/2012 09:41	09/07/2012 10:26	EPA 300.0 (1993)
Nitrite as N	0.15 U	0.15	0.75	mg/L	5	L209103	09/07/2012 09:41	09/07/2012 10:26	EPA 300.0 (1993)
Sulfate	13.6 D	0.20	1.00	mg/L	2	L209103	09/07/2012 09:41	09/07/2012 10:26	EPA 300.0 (1993)

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OCTOBER 03, 2012



Lionville Laboratory, PADEP Lab ID# 15-00009
264 Welsh Pool Road
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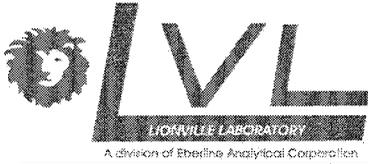
CHPRC Hanford PO Box 1600, Mail Stop - R3-60 Richland WA, 99352	Project: X12-040 Project Number: L0047 Project Manager: Scot Fitzgerald	Reported: 09/27/2012 17:32
-----------------------------------------------------------------------	-------------------------------------------------------------------------------	-------------------------------

Wet Chemistry
Lionville Laboratory

Analyte	Result and Qualifier	LOD	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method
B2LTN0 (1209019-07) Water									
Chloride	61.2 D	1.00	2.00	mg/L	10	L209103	09/07/2012 09:41	09/07/2012 10:26	EPA 300.0 (1993)
Fluoride	2.11 D	0.20	1.00	mg/L	2	L209103	09/07/2012 09:41	09/07/2012 10:26	EPA 300.0 (1993)
Nitrate as N	1.49	0.02	0.11	mg/L	1	L209103	09/07/2012 09:41	09/07/2012 10:26	EPA 300.0 (1993)
Nitrite as N	0.15 U	0.15	0.75	mg/L	5	L209103	09/07/2012 09:41	09/07/2012 10:26	EPA 300.0 (1993)
Sulfate	13.4 D	0.20	1.00	mg/L	2	L209103	09/07/2012 09:41	09/07/2012 10:26	EPA 300.0 (1993)

000000013

OCTOBER 03, 2012



Lionville Laboratory, PADEP Lab ID# 15-00009
 264 Welsh Pool Road
 Exton, PA 19341
 Phone: 610-280-3000
 Fax: 610-280-3041

CHPRC Hanford
 PO Box 1600, Mail Stop - R3-60
 Richland WA, 99352

Project: X12-040
 Project Number: L0047
 Project Manager: Scot Fitzgerald

Reported:
 09/27/2012 17:32

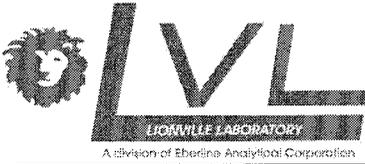
Wet Chemistry - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	-----------------------	-----	-----	-------	-------------	---------------	------	-------------	-----	-----------

Batch L209103 - Default Prep GenChem

Blank (L209103-BLK1)										
					Prepared: 09/07/2012 09:41 Analyzed: 09/07/2012 10:26					
Fluoride	0.10 U	0.10	0.50	mg/L						
Nitrate as N	0.02 U	0.02	0.11	mg/L						
Chloride	0.10 U	0.10	0.20	mg/L						
Nitrite as N	0.03 U	0.03	0.15	mg/L						
Sulfate	0.10 U	0.10	0.50	mg/L						
LCS (L209103-BS1)										
					Prepared: 09/07/2012 09:41 Analyzed: 09/07/2012 10:26					
Fluoride	4.95	0.10	0.50	mg/L	5.0000		99.0	90-110		
Chloride	4.77	0.10	0.20	mg/L	5.0000		95.4	90-110		
Nitrate as N	1.15	0.02	0.11	mg/L	1.1300		101	90-110		
Nitrite as N	1.48	0.03	0.15	mg/L	1.5200		97.2	90-110		
Sulfate	4.90	0.10	0.50	mg/L	5.0000		98.0	90-110		
Duplicate (L209103-DUP1)										
				Source: 1209019-03		Prepared: 09/07/2012 09:41 Analyzed: 09/07/2012 10:26				
Chloride	61.3 D	1.00	2.00	mg/L		61.0			0.392	20
Nitrate as N	1.50	0.02	0.11	mg/L		1.50			0.00	20
Nitrite as N	0.15 U	0.15	0.75	mg/L		0.15 U				20
Sulfate	13.6 D	0.20	1.00	mg/L		13.8			1.60	20
Matrix Spike (L209103-MS1)										
				Source: 1209019-03		Prepared: 09/07/2012 09:41 Analyzed: 09/07/2012 10:26				
Fluoride	27.0 D	0.50	2.50	mg/L	25.000	2.19	99.2	80-120		
Nitrate as N	7.17 D	0.10	0.55	mg/L	5.6475	1.50	100	80-120		
Sulfate	38.8 D	0.50	2.50	mg/L	25.000	13.8	100	80-120		
Matrix Spike (L209103-MS2)										
				Source: 1209019-03		Prepared: 09/07/2012 09:41 Analyzed: 09/07/2012 10:26				
Nitrite as N	16.4 D	0.30	1.50	mg/L	15.224	0.15 U	108	80-120		
Matrix Spike (L209103-MS3)										
				Source: 1209019-03		Prepared: 09/07/2012 09:41 Analyzed: 09/07/2012 10:26				
Chloride	161 D	2.00	4.00	mg/L	100.00	61.0	100	80-120		

OCTOBER 03, 2012



Lionville Laboratory, PADEP Lab ID# 15-00009
264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

CHPRC Hanford PO Box 1600, Mail Stop - R3-60 Richland WA, 99352	Project: X12-040 Project Number: L0047 Project Manager: Scot Fitzgerald	Reported: 09/27/2012 17:32
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Wet Chemistry - Quality Control
Lionville Laboratory

Analyte	Result and Qualifiers	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209104 - Default Prep GenChem										
Blank (L209104-BLK1)					Prepared: 09/12/2012 09:23 Analyzed: 09/12/2012 10:23					
Fluoride	0.10 U	0.10	0.50	mg/L						
LCS (L209104-BS1)					Prepared: 09/12/2012 09:23 Analyzed: 09/12/2012 10:23					
Fluoride	5.16	0.10	0.50	mg/L	5.0000	103	90-110			
Duplicate (L209104-DUP3)					Source: 1209019-03RE1 Prepared: 09/12/2012 09:23 Analyzed: 09/12/2012 10:23					
Fluoride	2.41 D	0.20	1.00	mg/L		2.19			9.57	20
Batch L209186 - NO PREP										
Blank (L209186-BLK1)					Prepared: 09/25/2012 10:30 Analyzed: 09/25/2012 11:20					
Total Organic Carbon	0.20 B	0.20	1.00	mg/L						
LCS (L209186-BS1)					Prepared: 09/25/2012 10:30 Analyzed: 09/25/2012 11:20					
Total Organic Carbon	4.91	0.20	1.00	mg/L	5.0000	98	90-110			
Duplicate (L209186-DUP1)					Source: 1209019-01 Prepared: 09/25/2012 10:30 Analyzed: 09/25/2012 11:20					
Total Organic Carbon	2.12	0.20	1.00	mg/L		2.30			8	20
Matrix Spike (L209186-MS1)					Source: 1209019-05 Prepared: 09/25/2012 10:30 Analyzed: 09/25/2012 11:20					
Total Organic Carbon	7.00	0.20	1.00	mg/L	5.0000	2.15	97	75-125		