Environmental Conservation Laboratories, Inc.
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Thursday, August 14, 2008

Kimley-Horn and Associates - VA[KI009]

Attn: Mike Iwashchenko

505 Independence Pkway, Suite 200

Chesapeake, VA 23320

RE: Laboratory Results for
Project Number: [none], Project Name/Desc: Fly Ash
ENCO Workorder: C807924

Dear Mike Iwashchenko,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Thursday, July 24, 2008.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Chuck Smith

Chuck Smith
Project Manager

Enclosure(s)

The total number of pages in this report, including this page is 46.

PROJECT NARRATIVE

Client: Kimley-Horn and Associates - VA[KI009]
Project: Fly Ash
ENCO Project ID: C807924

Overview

All samples submitted were analyzed by Environmental Conservation Laboratories, Inc. in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling and processing will be discussed in the Remarks section below.

Remarks

Analysis: EPA 353.2 NOx
Affected Samples: 8G27003-BLK1, FS-6[C807924-01], SW-10[C807924-02]
Description: MB results above MDL but below MRL; associated samples flagged with J-01
Narrative: The method blank associated to the flagged samples showed a positive result above the MDL, but below the reporting limit. Since the magnitude of the sample result are within a factor of 10 of the associated blank, the result should be considered to be an estimate.

Analysis: SM4500-Cl/E Chloride
Affected Samples: 8G30008-BLK1, FS-6[C807924-01RE1], SW-10[C807924-02RE1]
Narrative: The method blank associated to the flagged samples showed a positive result above the MDL, but below the reporting limit. Since the magnitude of the sample result is greater than ten times the concentration of the associated blank, the impact of this nonconformance is considered to be minimal.

Analysis: EPA 300.0 Fluoride
Affected Samples: 8G31030-BLK1, FS-6[C807924-01]
Narrative: The method blank contains analyte at a concentration above the MRL, but since it was not detected in the sample, the impact on data quality is negligible.

Analysis: EPA 300.0 Fluoride
Affected Samples: 8G31030-BLK1, 8G31031-BLK1, SW-10[C807924-02]
Narrative: The method blank associated to the flagged samples showed a positive result above the MDL, but below the reporting limit. Since the magnitude of the sample result is greater than ten times the concentration of the associated blank, the impact of this nonconformance is considered to be minimal.

Analysis: EPA 9056 Chloride, Fluoride, Nitrate, Nitrite & Sulfate
Affected Samples: MW-4[C807924-03], MW-5D[C807924-04], MW-5D[C807924-05]
Description: Holding time expired in the laboratory (explanation required)
Narrative:Two of the three samples were received outside of the three day leaching period for the method prep. The third sample could not be prepared within the remaining hold time.
Explanation: Samples were received with less than 1/2 of the preparation hold time left of three days from sampling.

Analysis: EPA 9056 Fluoride
Affected Samples: 8H05022-BLK1, MW-5D[C807924-04]
Narrative: The method blank associated to the flagged samples showed a positive result above the MDL, but below the reporting limit. The analytes were not detected in the associated samples. The nonconformance affected only the method blank, and is considered to not have an impact on sample data quality.

Analysis: EPA 9056 Fluoride
Affected Samples: 8H05022-BLK1, MW-4[C807924-03], MW-5D[C807924-05]
Narrative: The method blank associated to the flagged samples showed a positive result above the MDL, but below the reporting limit. Since the magnitude of the sample results are within a factor of 10 of the associated blank, the result should be considered to be an estimate.
Explanation: MB results above MDL, but below MRL; associated samples flagged with J-01

Analysis: EPA 9056 Fluoride
Affected Samples: 8H05022-MS1, 8H05022-MSD1, MW-4[C807924-03], MW-5D[C807924-04], MW-5D[C807924-05]
Narrative: The matrix spike and/or matrix spike duplicate had recoveries that were outside acceptance limits, but by virtue of a laboratory control sample being in control, the laboratory has demonstrated to be in control of its internal process.

Analysis: EPA 9056 Sulfate
Affected Samples: 8H05022-BLK1, MW-4[C807924-03], MW-5D[C807924-04], MW-5D[C807924-05]
Narrative: The method blank associated to the flagged samples showed a positive result above the MDL, but below the reporting limit. Since the magnitude of the sample results are within a factor of 10 of the associated blank, the result should be considered to be an estimate.
Explanation: MB results above MDL, but below MRL; associated samples flagged with J-01

Analysis: EPA 9056 Nitrate
Affected Samples: 8H05022-MS1, 8H05022-MSD1, MW-4[C807924-03], MW-5D[C807924-04], MW-5D[C807924-05]
Narrative: The matrix spike and/or matrix spike duplicate had recoveries that were outside acceptance limits, but by virtue of a laboratory control sample being in control, the laboratory has demonstrated to be in control of its internal process.
Explanation: The source sample was spiked at ten times the intended concentration of 10mg/L. Results are outside of calibration range and recoveries should be considered estimates at 122% and 120%.

Analysis: EPA 310.2 Alkalinity
Affected Samples: 8H06006-BLK1, MW-4[C807924-03RE1]
Narrative: The associated method blank had a positive result, and may affect the quality of the result presented. There was no additional sample available for repeat testing.
Explanation: MB has positive results, there is no additional leachate to re-test. Result should be considered estimated. Result is below the BLK1 result.

Analysis: EPA 310.2 Alkalinity
Affected Samples: 8H06006-BLK1, MW-5D[C807924-04], MW-5D[C807924-05]
Nonconformance:
Additional Information: [NOTE TO PM's: add additional information as appropriate from NCM on right using copy/paste or enter NONE]

Analysis: EPA 310.2 Alkalinity
Affected Samples: 8H06006-BLK1, MW-4[C807924-03], MW-4[C807924-03RE1], MW-5D[C807924-04], MW-5D[C807924-05]
Description: Holding time expired in the laboratory (explanation required)
Narrative:Two of the three samples were received outside of the three day leaching period for the method prep. The third sample could not be prepared within the remaining hold time.
Explanation: Samples were received with less than 1/2 of the preparation hold time left of three days from sampling.

Chuck Smith
Project Manager

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: FS-6 | Lab ID: C807924-01 | Sampled: 07/23/08 12:30 | Received: 07/24/08 10:45

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 160.1	07/30/08	07/28/08	17:41	7/30/2008 16:30
EPA 160.2	07/30/08	07/28/08	09:30	7/31/2008 10:00
EPA 300.0	08/20/08	07/31/08	11:58	8/1/2008 10:04
EPA 310.2	08/06/08	07/30/08	08:41	7/30/2008 11:54
EPA 353.2	08/20/08	07/27/08	10:19	7/27/2008 15:07
EPA 365.4	08/20/08	08/01/08	11:50	8/3/2008 11:09
EPA 6010B	01/19/09	07/25/08	07:10	7/30/2008 11:52
EPA 7470A	08/20/08	07/28/08	06:40	7/28/2008 18:15

Client ID: FS-6 | Lab ID: C807924-01RE1 | Sampled: 07/23/08 12:30 | Received: 07/24/08 10:45

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
SM4500-Cl/E	08/20/08	07/30/08	08:43	7/30/2008 13:09

Client ID: SW-10 | Lab ID: C807924-02 | Sampled: 07/23/08 14:20 | Received: 07/24/08 10:45

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 160.1	07/30/08	07/28/08	17:41	7/30/2008 16:30
EPA 160.2	07/30/08	07/28/08	09:30	7/31/2008 10:00
EPA 300.0	08/20/08	07/31/08	11:58	8/1/2008 10:34
EPA 310.2	08/06/08	07/30/08	08:41	7/30/2008 11:56
EPA 353.2	08/20/08	07/27/08	10:19	7/27/2008 15:08
EPA 365.4	08/20/08	08/01/08	11:50	8/3/2008 11:12
EPA 6010B	01/19/09	07/25/08	07:10	7/30/2008 11:59
EPA 7470A	08/20/08	07/28/08	06:40	7/28/2008 18:20

Client ID: SW-10 | Lab ID: C807924-02RE1 | Sampled: 07/23/08 14:20 | Received: 07/24/08 10:45

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
SM4500-Cl/E	08/20/08	07/30/08	08:43	7/30/2008 13:09

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Client ID: MW-4	Lab ID: C807924-03			Sampled: 07/21/08 09:27		Received: 07/24/08 10:45
Parameter	**Hold Date/Time(s)**			**Prep Date/Time(s)**		**Analysis Date/Time(s)**
% Solids	01/17/09			07/28/08	11:50	7/28/2008 14:20
EPA 365.4	08/18/08			08/01/08	11:50	8/3/2008 11:22
EPA 6010B	01/17/09			07/29/08	07:03	7/31/2008 16:33
EPA 6010B	01/17/09			08/01/08	13:10	8/4/2008 20:36
EPA 6010B	01/17/09	01/28/09		08/01/08	13:10	8/4/2008 20:36
EPA 6010B	01/17/09			08/01/08	13:10	8/4/2008 20:42
EPA 6010B	01/17/09			07/29/08	07:03	7/31/2008 16:33
EPA 6010B	01/17/09			08/01/08	13:10	8/4/2008 20:36
EPA 6010B	01/17/09			08/01/08	13:10	8/4/2008 20:42
EPA 7470A	08/18/08			07/30/08	15:42	7/31/2008 15:37
EPA 7470A	08/18/08			07/31/08	10:00	7/31/2008 16:06
EPA 7471A	08/18/08			07/31/08	07:23	7/31/2008 11:20
EPA 9056	07/24/08	08/07/08	11:25	08/05/08	11:25	8/6/2008 00:27
EPA 9056	07/24/08	09/02/08		08/05/08	11:25	8/6/2008 00:27

Client ID: MW-4	Lab ID: C807924-03RE1		Sampled: 07/21/08 09:27		Received: 07/24/08 10:45
Parameter	**Hold Date/Time(s)**		**Prep Date/Time(s)**		**Analysis Date/Time(s)**
EPA 310.2	08/04/08		08/05/08	11:25	8/6/2008 12:41

Client ID: MW-5D 8-9	Lab ID: C807924-04			Sampled: 07/21/08 13:00		Received: 07/24/08 10:45
Parameter	**Hold Date/Time(s)**			**Prep Date/Time(s)**		**Analysis Date/Time(s)**
% Solids	01/17/09			07/28/08	11:50	7/28/2008 14:20
EPA 310.2	08/04/08			08/05/08	11:25	8/6/2008 09:43
EPA 365.4	08/18/08			08/01/08	11:50	8/3/2008 11:26
EPA 6010B	01/17/09			07/29/08	07:03	7/31/2008 17:46
EPA 6010B	01/17/09			08/01/08	13:10	8/4/2008 20:50
EPA 6010B	01/17/09	01/28/09		08/01/08	13:10	8/4/2008 20:50
EPA 6010B	01/17/09			08/01/08	13:10	8/4/2008 20:56
EPA 6010B	01/17/09			07/29/08	07:03	7/31/2008 17:46
EPA 6010B	01/17/09			08/01/08	13:10	8/4/2008 20:50
EPA 6010B	01/17/09			08/01/08	13:10	8/4/2008 20:56
EPA 7470A	08/18/08			07/30/08	15:42	7/31/2008 15:39
EPA 7470A	08/18/08			07/31/08	10:00	7/31/2008 16:07
EPA 7471A	08/18/08			07/31/08	07:23	7/31/2008 12:03
EPA 9056	07/24/08	08/07/08	11:25	08/05/08	11:25	8/6/2008 00:56
EPA 9056	07/24/08	09/02/08		08/05/08	11:25	8/6/2008 00:56

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Client ID: MW-5D 29'-31'	Lab ID: C807924-05	Sampled: 07/21/08 13:07	Received: 07/24/08 10:45

Parameter	Hold Date/Time(s)			Prep Date/Time(s)		Analysis Date/Time(s)
% Solids	01/17/09			07/28/08	11:50	7/28/2008 14:20
EPA 310.2	08/04/08			08/05/08	11:25	8/6/2008 09:43
EPA 365.4	08/18/08			08/01/08	11:50	8/3/2008 11:28
EPA 6010B	01/17/09			07/29/08	07:03	7/31/2008 17:53
EPA 6010B	01/17/09			08/01/08	13:10	8/4/2008 21:03
EPA 6010B	01/17/09	01/28/09		08/01/08	13:10	8/4/2008 21:03
EPA 6010B	01/17/09			08/01/08	13:10	8/4/2008 21:10
EPA 6010B	01/17/09			07/29/08	07:03	7/31/2008 17:53
EPA 6010B	01/17/09			08/01/08	13:10	8/4/2008 21:03
EPA 6010B	01/17/09			08/01/08	13:10	8/4/2008 21:10
EPA 7470A	08/18/08			07/30/08	15:42	7/31/2008 15:41
EPA 7470A	08/18/08			07/31/08	10:00	7/31/2008 16:09
EPA 7471A	08/18/08			07/31/08	07:23	7/31/2008 12:06
EPA 9056	07/24/08	08/07/08	11:25	08/05/08	11:25	8/6/2008 01:26
EPA 9056	07/24/08	09/02/08		08/05/08	11:25	8/6/2008 01:26

SAMPLE DETECTION SUMMARY

Client ID: FS-6 Lab ID: C807924-01

Analyte	Results	Flag	MRL	Units	Method	Notes
Aluminum	595	B	100	ug/L	EPA 6010B	
Barium	68.5		10.0	ug/L	EPA 6010B	
Boron	33.7	J	50.0	ug/L	EPA 6010B	
Calcium	19000		100	ug/L	EPA 6010B	
Cobalt	9.5	J	10.0	ug/L	EPA 6010B	
Copper	106		10.0	ug/L	EPA 6010B	
Iron	2950		50	ug/L	EPA 6010B	
Lead	22.0		10.0	ug/L	EPA 6010B	
Magnesium	3560		100	ug/L	EPA 6010B	
Manganese	112		10.0	ug/L	EPA 6010B	
Nickel	9.1	J	10.0	ug/L	EPA 6010B	
Nitrate/Nitrite as N	0.025	JB	0.10	mg/L	EPA 353.2	J-01a
Potassium	2280		500	ug/L	EPA 6010B	
Sodium	55300		500	ug/L	EPA 6010B	
Sulfate as SO4	56		5.0	mg/L	EPA 300.0	
Total Dissolved Solids	270		10	mg/L	EPA 160.1	
Total Suspended Solids	1.7		1.0	mg/L	EPA 160.2	
Zinc	55.2		10.0	ug/L	EPA 6010B	

Client ID: FS-6 Lab ID: C807924-01RE1

Analyte	Results	Flag	MRL	Units	Method	Notes
Chloride	89	B	5.0	mg/L	SM4500-Cl/E	QB-01

Client ID: SW-10 Lab ID: C807924-02

Analyte	Results	Flag	MRL	Units	Method	Notes
Aluminum	634	B	100	ug/L	EPA 6010B	
Antimony	2.1	J	10.0	ug/L	EPA 6010B	
Barium	38.4		10.0	ug/L	EPA 6010B	
Beryllium	0.10	J	1.00	ug/L	EPA 6010B	
Boron	36.1	J	50.0	ug/L	EPA 6010B	
Calcium	20200		100	ug/L	EPA 6010B	
Cobalt	7.7	J	10.0	ug/L	EPA 6010B	
Fluoride	0.21	B	0.20	mg/L	EPA 300.0	QB-01
Iron	422		50	ug/L	EPA 6010B	
Magnesium	8170		100	ug/L	EPA 6010B	
Manganese	407		10.0	ug/L	EPA 6010B	
Nickel	13.8		10.0	ug/L	EPA 6010B	
Nitrate/Nitrite as N	0.10	B	0.10	mg/L	EPA 353.2	J-01a
Potassium	2350		500	ug/L	EPA 6010B	
Sodium	14600		500	ug/L	EPA 6010B	
Sulfate as SO4	93		5.0	mg/L	EPA 300.0	
Total Dissolved Solids	190		10	mg/L	EPA 160.1	
Total Suspended Solids	7.6		1.0	mg/L	EPA 160.2	
Zinc	33.8		10.0	ug/L	EPA 6010B	

Client ID: SW-10 Lab ID: C807924-02RE1

Analyte	Results	Flag	MRL	Units	Method	Notes
Chloride	22	B	5.0	mg/L	SM4500-Cl/E	QB-01

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Client ID: MW-4 Lab ID: C807924-03

Analyte	Results	Flag	MRL	Units	Method	Notes
% Solids	77		0.1	% by Weight	% Solids	
Aluminum	0.798	B	0.200	mg/L	EPA 6010B	QB-01
Aluminum	0.396	J	1.00	mg/L	EPA 6010B	
Aluminum	543	B	6.5	mg/kg dry	EPA 6010B	
Arsenic	0.26	JB	0.65	mg/kg dry	EPA 6010B	
Barium	0.0208	B	0.0100	mg/L	EPA 6010B	J-01
Barium	0.378	B	0.0500	mg/L	EPA 6010B	J-01
Barium	3.37		0.653	mg/kg dry	EPA 6010B	
Boron	0.423	B	0.250	mg/L	EPA 6010B	J-01
Boron	0.53	JB	3.27	mg/kg dry	EPA 6010B	
Boron	0.101	B	0.0500	mg/L	EPA 6010B	J-01
Calcium	6.25	B	2.50	mg/L	EPA 6010B	J-01
Calcium	68.0		32.7	mg/kg dry	EPA 6010B	
Calcium	0.878	B	0.500	mg/L	EPA 6010B	J-01
Chloride	25	J	65	mg/kg dry	EPA 9056	Q
Chromium	0.00248	JB	0.0100	wt. dry mg/L	EPA 6010B	J-01
Chromium	0.00605	J	0.0500	mg/L	EPA 6010B	
Chromium	2.20		0.65	mg/kg dry	EPA 6010B	
Cobalt	0.0316	J	0.0500	mg/L	EPA 6010B	
Cobalt	1.49		0.65	mg/kg dry	EPA 6010B	
Cobalt	0.0097	J	0.0100	mg/L	EPA 6010B	
Fluoride	0.65	JB	2.6	mg/kg dry	EPA 9056	J-01a, Q
Iron	0.261		0.0500	wt. dry mg/L	EPA 6010B	
Iron	0.346		0.250	mg/L	EPA 6010B	
Iron	566		3.3	mg/kg dry	EPA 6010B	
Lead	0.0107	J	0.0500	mg/L	EPA 6010B	
Lead	0.47	J	0.65	mg/kg dry	EPA 6010B	
Magnesium	0.623	B	0.500	mg/L	EPA 6010B	J-01
Magnesium	1.25	JB	2.50	mg/L	EPA 6010B	J-01
Magnesium	98.2		6.5	mg/kg dry	EPA 6010B	
Manganese	3.94		0.653	mg/kg dry	EPA 6010B	
Manganese	0.0217	J	0.0500	mg/L	EPA 6010B	
Manganese	0.0064	J	0.0100	mg/L	EPA 6010B	
Nickel	3.32		0.65	mg/kg dry	EPA 6010B	
Nickel	0.0611	JB	0.250	mg/L	EPA 6010B	J-01
Nickel	0.0254	JB	0.0500	mg/L	EPA 6010B	QB-01
Nitrate as N	4.4	J	13	mg/kg dry	EPA 9056	Q
Phosphorus	24		10	wt. dry mg/kg dry	EPA 365.4	
Potassium	57.6	B	32.7	mg/kg dry	EPA 6010B	
Potassium	1.46	JB	2.50	mg/L	EPA 6010B	J-01
Potassium	0.226	JB	0.500	mg/L	EPA 6010B	J-01
Silver	0.0007	J	0.0100	mg/L	EPA 6010B	
Silver	0.0022	J	0.0500	mg/L	EPA 6010B	
Sodium	1310	B	2.50	mg/L	EPA 6010B	J-01
Sodium	4.11	B	0.500	mg/L	EPA 6010B	J-01
Sodium	31	JB	33	mg/kg dry	EPA 6010B	
Sulfate as SO4	150	B	65	mg/kg dry	EPA 9056	J-01a, Q
Vanadium	0.0017	J	0.0100	wt. dry mg/L	EPA 6010B	
Vanadium	1.99	B	0.653	mg/kg dry	EPA 6010B	

Client ID: MW-4 Lab ID: C807924-03

Analyte	Results	Flag	MRL	Units	Method	Notes
Zinc	0.166	B	0.100	mg/L	EPA 6010B	J-01
Zinc	3.75		0.653	mg/kg dry	EPA 6010B	
Zinc	0.0139	JB	0.0200	mg/L	EPA 6010B	J-01

Client ID: MW-4 Lab ID: C807924-03RE1

Analyte	Results	Flag	MRL	Units	Method	Notes
Total Alkalinity	110	JB	200	mg/kg dry	EPA 310.2	J-01a, Q

Client ID: MW-5D 8' 9' Lab ID: C807924-04

Analyte	Results	Flag	MRL	Units	Method	Notes
% Solids	78		0.1	% by Weight	% Solids	
Aluminum	1.09		1.00	mg/L	EPA 6010B	
Aluminum	8570	B	6.4	mg/kg dry	EPA 6010B	
Aluminum	4.31	B	0.200	mg/L	EPA 6010B	QB-01
Antimony	0.62	JB	0.64	mg/kg dry	EPA 6010B	
Arsenic	0.00306	J	0.0100	mg/L	EPA 6010B	
Arsenic	3.87	B	0.64	mg/kg dry	EPA 6010B	
Barium	0.0516	B	0.0100	mg/L	EPA 6010B	J-01
Barium	39.3		0.640	mg/kg dry	EPA 6010B	
Barium	0.813	B	0.0500	mg/L	EPA 6010B	J-01
Beryllium	0.110		0.064	mg/kg dry	EPA 6010B	
Boron	2.57	JB	3.20	mg/kg dry	EPA 6010B	
Boron	0.111	B	0.0500	mg/L	EPA 6010B	J-01
Boron	0.490	B	0.250	mg/L	EPA 6010B	J-01
Cadmium	0.0012	J	0.0050	mg/L	EPA 6010B	
Calcium	64.2		32.0	mg/kg dry	EPA 6010B	
Calcium	9.12	B	2.50	mg/L	EPA 6010B	J-01
Calcium	1.60	B	0.500	mg/L	EPA 6010B	J-01
Chloride	22	J	64	mg/kg dry wt. dry	EPA 9056	Q
Chromium	22.3		0.64	mg/kg dry	EPA 6010B	
Chromium	0.00808	JB	0.0100	mg/L	EPA 6010B	J-01
Chromium	0.00526	J	0.0500	mg/L	EPA 6010B	
Cobalt	7.17		0.64	mg/kg dry	EPA 6010B	
Cobalt	0.0472	J	0.0500	mg/L	EPA 6010B	
Cobalt	0.0011	J	0.0100	mg/L	EPA 6010B	
Copper	0.0198	J	0.0500	mg/L	EPA 6010B	
Copper	10.9		0.640	mg/kg dry	EPA 6010B	
Iron	9380		3.2	mg/kg dry	EPA 6010B	
Iron	2.19		0.0500	mg/L	EPA 6010B	
Iron	0.110	J	0.250	mg/L	EPA 6010B	
Lead	0.0021	J	0.0100	mg/L	EPA 6010B	
Lead	9.10		0.64	mg/kg dry	EPA 6010B	
Lead	0.0175	J	0.0500	mg/L	EPA 6010B	
Magnesium	0.979	B	0.500	mg/L	EPA 6010B	J-01
Magnesium	4.19	B	2.50	mg/L	EPA 6010B	J-01
Magnesium	944		6.4	mg/kg dry	EPA 6010B	
Manganese	31.2		0.640	mg/kg dry	EPA 6010B	
Manganese	0.0516		0.0500	mg/L	EPA 6010B	
Manganese	0.0034	J	0.0100	mg/L	EPA 6010B	
Mercury	0.008	J	0.01	mg/kg dry	EPA 7471A	
Nickel	0.0679	JB	0.250	mg/L	EPA 6010B	J-01

Client ID: MW-5D 8'-9' Lab ID: C807924-04

Analyte	Results	Flag	MRL	Units	Method	Notes
Nickel	0.0024	JB	0.0500	mg/L	EPA 6010B	J-01
Nickel	13.2		0.64	mg/kg dry	EPA 6010B	
Nitrate as N	4.3	J	13	mg/kg dry	EPA 9056	Q
Phosphorus	96		10	wt. dry mg/kg dry	EPA 365.4	
Potassium	0.714	B	0.500	mg/L	EPA 6010B	J-01
Potassium	851	B	32.0	mg/kg dry	EPA 6010B	
Potassium	1.90	JB	2.50	mg/L	EPA 6010B	J-01
Sodium	1300	B	2.50	mg/L	EPA 6010B	J-01
Sodium	101	B	32	mg/kg dry	EPA 6010B	
Sodium	21.4	B	0.500	mg/L	EPA 6010B	J-01
Sulfate as SO4	71	B	64	mg/kg dry	EPA 9056	J-01a, Q
Vanadium	28.4	B	0.640	wt. dry mg/kg dry	EPA 6010B	
Vanadium	0.0089	J	0.0100	mg/L	EPA 6010B	
Zinc	0.255	B	0.100	mg/L	EPA 6010B	J-01
Zinc	26.7		0.640	mg/kg dry	EPA 6010B	
Zinc	0.0123	JB	0.0200	mg/L	EPA 6010B	J-01

Client ID: MW-5D 29'-31' Lab ID: C807924-05

Analyte	Results	Flag	MRL	Units	Method	Notes
% Solids	81		0.1	% by Weight	% Solids	
Aluminum	0.800	B	0.200	mg/L	EPA 6010B	QB-01
Aluminum	0.153	J	1.00	mg/L	EPA 6010B	
Aluminum	459	B	6.2	mg/kg dry	EPA 6010B	
Antimony	0.37	JB	0.62	mg/kg dry	EPA 6010B	
Arsenic	0.73	B	0.62	mg/kg dry	EPA 6010B	
Barium	0.0352	B	0.0100	mg/L	EPA 6010B	J-01
Barium	0.336	B	0.0500	mg/L	EPA 6010B	J-01
Barium	2.52		0.615	mg/kg dry	EPA 6010B	
Boron	0.60	JB	3.08	mg/kg dry	EPA 6010B	
Boron	0.102	B	0.0500	mg/L	EPA 6010B	J-01
Boron	0.334	B	0.250	mg/L	EPA 6010B	J-01
Calcium	123		30.8	mg/kg dry	EPA 6010B	
Calcium	2.27	B	0.500	mg/L	EPA 6010B	J-01
Calcium	6.62	B	2.50	mg/L	EPA 6010B	J-01
Chloride	21	J	62	mg/kg dry	EPA 9056	Q
Chromium	0.00257	JB	0.0100	wt. dry mg/L	EPA 6010B	J-01
Chromium	1.63		0.62	mg/kg dry	EPA 6010B	
Cobalt	0.0055	J	0.0500	mg/L	EPA 6010B	
Cobalt	0.0004	J	0.0100	mg/L	EPA 6010B	
Cobalt	0.63		0.62	mg/kg dry	EPA 6010B	
Fluoride	0.49	JB	2.5	mg/kg dry	EPA 9056	J-01a, Q
Iron	1.82		0.250	wt. dry mg/L	EPA 6010B	
Iron	0.529		0.0500	mg/L	EPA 6010B	
Iron	974		3.1	mg/kg dry	EPA 6010B	
Lead	0.84		0.62	mg/kg dry	EPA 6010B	
Magnesium	1.13	JB	2.50	mg/L	EPA 6010B	J-01
Magnesium	99.4		6.2	mg/kg dry	EPA 6010B	
Magnesium	0.578	B	0.500	mg/L	EPA 6010B	J-01
Manganese	0.0564		0.0500	mg/L	EPA 6010B	

Client ID: MW-5D 29'-31' Lab ID: C807924-05

Analyte	Results	Flag	MRL	Units	Method	Notes
Manganese	0.0073	J	0.0100	mg/L	EPA 6010B	
Manganese	7.52		0.615	mg/kg dry	EPA 6010B	
Nickel	0.0120	JB	0.250	mg/L	EPA 6010B	J-01
Nickel	0.0019	JB	0.0500	mg/L	EPA 6010B	J-01
Nickel	1.17		0.62	mg/kg dry	EPA 6010B	
Nitrate as N	4.3	J	12	mg/kg dry wt. dry	EPA 9056	Q
Phosphorus	50		9.8	mg/kg dry	EPA 365.4	
Potassium	86.5	B	30.8	mg/kg dry	EPA 6010B	
Potassium	1.35	JB	2.50	mg/L	EPA 6010B	J-01
Potassium	0.257	JB	0.500	mg/L	EPA 6010B	J-01
Silver	0.0006	J	0.0100	mg/L	EPA 6010B	
Sodium	70	B	31	mg/kg dry	EPA 6010B	
Sodium	16.2	B	0.500	mg/L	EPA 6010B	J-01
Sodium	1320	B	2.50	mg/L	EPA 6010B	J-01
Sulfate as SO4	100	B	62	mg/kg dry wt. dry	EPA 9056	J-01a, Q
Vanadium	1.89	B	0.615	mg/kg dry	EPA 6010B	
Vanadium	0.0017	J	0.0100	mg/L	EPA 6010B	
Zinc	0.180	B	0.100	mg/L	EPA 6010B	J-01
Zinc	3.16		0.615	mg/kg dry	EPA 6010B	
Zinc	0.0165	JB	0.0200	mg/L	EPA 6010B	J-01

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ANALYTICAL RESULTS

Description: FS-6
Matrix: Ground Water
Project: Fly Ash

Lab Sample ID: C807924-01
Sampled: 07/23/08 12:30
Sampled By: Mike Iwashchenko

Received: 07/24/08 10:45
Work Order: C807924

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NELAC E87610]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
Aluminum [7429-90-5] ^	**595**	B	ug/L	1	17	100	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Antimony [7440-36-0] ^	1.0	U	ug/L	1	1.0	10.0	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Arsenic [7440-38-2] ^	2.8	U	ug/L	1	2.8	10.0	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Barium [7440-39-3] ^	**68.5**		ug/L	1	1.00	10.0	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Beryllium [7440-41-7] ^	0.10	U	ug/L	1	0.10	1.00	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Boron [7440-42-8] ^	**33.7**	J	ug/L	1	5.0	50.0	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Cadmium [7440-43-9] ^	0.36	U	ug/L	1	0.36	1.00	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Calcium [7440-70-2] ^	**19000**		ug/L	1	20.0	100	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Chromium [7440-47-3] ^	1.0	U	ug/L	1	1.0	10.0	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Cobalt [7440-48-4] ^	**9.5**	J	ug/L	1	1.1	10.0	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Copper [7440-50-8] ^	**106**		ug/L	1	1.60	10.0	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Iron [7439-89-6] ^	**2950**		ug/L	1	22	50	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Lead [7439-92-1] ^	**22.0**		ug/L	1	1.9	10.0	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Magnesium [7439-95-4] ^	**3560**		ug/L	1	23	100	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Manganese [7439-96-5] ^	**112**		ug/L	1	1.1	10.0	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Mercury [7439-97-6] ^	0.11	U	ug/L	1	0.11	0.20	8G26002	EPA 7470A	07/28/08 18:15	MPL	
Molybdenum [7439-98-7] ^	2.5	U	ug/L	1	2.5	10.0	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Nickel [7440-02-0] ^	**9.1**	J	ug/L	1	1.8	10.0	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Potassium [7440-09-7] ^	**2280**		ug/L	1	150	500	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Selenium [7782-49-2] ^	2.7	U	ug/L	1	2.7	10.0	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Silver [7440-22-4] ^	1.9	U	ug/L	1	1.9	10.0	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Sodium [7440-23-5] ^	**55300**		ug/L	1	400	500	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Thallium [7440-28-0] ^	4.8	U	ug/L	1	4.8	10.0	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Vanadium [7440-62-2] ^	1.4	U	ug/L	1	1.4	10.0	8G25002	EPA 6010B	07/30/08 11:52	VLO	
Zinc [7440-66-6] ^	**55.2**		ug/L	1	3.8	10.0	8G25002	EPA 6010B	07/30/08 11:52	VLO	

Classical Chemistry Parameters

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
Chloride [16887-00-6]	**89**	B	mg/L	1	0.50	5.0	8G30008	SM4500-Cl/E	07/30/08 13:09	PEV	QB-01
Fluoride [16984-48-8]	0.01	U	mg/L	1	0.01	0.20	8G31030	EPA 300.0	08/01/08 10:04	AJ	
Nitrate/Nitrite as N [NA]	**0.025**	JB	mg/L	1	0.017	0.10	8G27003	EPA 353.2	07/27/08 15:07	PEV	J-01a
Phosphorus [7723-14-0]	0.050	U	mg/L	1	0.050	0.10	8G31035	EPA 365.4	08/03/08 11:09	PEV	
Sulfate as SO4 [14808-79-8]	**56**		mg/L	1	0.05	5.0	8G31030	EPA 300.0	08/01/08 10:04	AJ	
Total Alkalinity [NA]	2.7	U	mg/L	1	2.7	15	8G30007	EPA 310.2	07/30/08 11:54	aj	
Total Dissolved Solids [NA]	**270**		mg/L	1	10	10	8G28006	EPA 160.1	07/30/08 16:30	JOC	
Total Suspended Solids [NA]	**1.7**		mg/L	1	1.0	1.0	8G28012	EPA 160.2	07/31/08 10:00	FLT	

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Description: SW-10
Matrix: Ground Water
Project: Fly Ash

Lab Sample ID: C807924-02
Sampled: 07/23/08 14:20
Sampled By: Mike Iwashchenko

Received: 07/24/08 10:45
Work Order: C807924

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NELAC E87610]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
Aluminum [7429-90-5] ^	**634**	B	ug/L	1	17	100	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Antimony [7440-36-0] ^	**2.1**	J	ug/L	1	1.0	10.0	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Arsenic [7440-38-2] ^	2.8	U	ug/L	1	2.8	10.0	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Barium [7440-39-3] ^	**38.4**		ug/L	1	1.00	10.0	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Beryllium [7440-41-7] ^	**0.10**	J	ug/L	1	0.10	1.00	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Boron [7440-42-8] ^	**36.1**	J	ug/L	1	5.0	50.0	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Cadmium [7440-43-9] ^	0.36	U	ug/L	1	0.36	1.00	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Calcium [7440-70-2] ^	**20200**		ug/L	1	20.0	100	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Chromium [7440-47-3] ^	1.0	U	ug/L	1	1.0	10.0	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Cobalt [7440-48-4] ^	**7.7**	J	ug/L	1	1.1	10.0	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Iron [7439-89-6] ^	**422**		ug/L	1	22	50	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Lead [7439-92-1] ^	1.9	U	ug/L	1	1.9	10.0	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Magnesium [7439-95-4] ^	**8170**		ug/L	1	23	100	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Manganese [7439-96-5] ^	**407**		ug/L	1	1.1	10.0	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Mercury [7439-97-6] ^	0.11	U	ug/L	1	0.11	0.20	8G26002	EPA 7470A	07/28/08 18:20	MPL	
Molybdenum [7439-98-7] ^	2.5	U	ug/L	1	2.5	10.0	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Nickel [7440-02-0] ^	**13.8**		ug/L	1	1.8	10.0	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Potassium [7440-09-7] ^	**2350**		ug/L	1	150	500	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Selenium [7782-49-2] ^	2.7	U	ug/L	1	2.7	10.0	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Silver [7440-22-4] ^	1.9	U	ug/L	1	1.9	10.0	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Sodium [7440-23-5] ^	**14600**		ug/L	1	400	500	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Thallium [7440-28-0] ^	4.8	U	ug/L	1	4.8	10.0	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Vanadium [7440-62-2] ^	1.4	U	ug/L	1	1.4	10.0	8G25002	EPA 6010B	07/30/08 11:59	VLO	
Zinc [7440-66-6] ^	**33.8**		ug/L	1	3.8	10.0	8G25002	EPA 6010B	07/30/08 11:59	VLO	

Classical Chemistry Parameters

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
Chloride [16887-00-6]	**22**	B	mg/L	1	0.50	5.0	8G30008	SM4500-Cl/E	07/30/08 13:09	PEV	QB-01
Fluoride [16984-48-8]	**0.21**	B	mg/L	1	0.01	0.20	8G31030	EPA 300.0	08/01/08 10:34	AJ	QB-01
Nitrate/Nitrite as N [NA]	**0.10**	B	mg/L	1	0.017	0.10	8G27003	EPA 353.2	07/27/08 15:08	PEV	J-01a
Phosphorus [7723-14-0]	0.050	U	mg/L	1	0.050	0.10	8G31035	EPA 365.4	08/03/08 11:12	PEV	
Sulfate as SO4 [14808-79-8]	**93**		mg/L	1	0.05	5.0	8G31030	EPA 300.0	08/01/08 10:34	AJ	
Total Alkalinity [NA]	2.7	U	mg/L	1	2.7	15	8G30007	EPA 310.2	07/30/08 11:56	aj	
Total Dissolved Solids [NA]	**190**		mg/L	1	10	10	8G28006	EPA 160.1	07/30/08 16:30	JOC	
Total Suspended Solids [NA]	**7.6**		mg/L	1	1.0	1.0	8G28012	EPA 160.2	07/31/08 10:00	FLT	

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Description: MW-4
Matrix: Soil
Project: Fly Ash

Lab Sample ID: C807924-03
Sampled: 07/21/08 09:27
Sampled By: Mike Iwashchenko

Received: 07/24/08 10:45
Work Order: C807924
% Solids: 76.5

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NELAC E87610]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
Aluminum [7429-90-5] ^	543	B	mg/kg dry	1	2.7	6.5	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Antimony [7440-36-0] ^	0.14	U	mg/kg dry	1	0.14	0.65	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Arsenic [7440-38-2] ^	0.26	JB	mg/kg dry	1	0.08	0.65	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Barium [7440-39-3] ^	3.37		mg/kg dry	1	0.065	0.653	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Beryllium [7440-41-7] ^	0.016	U	mg/kg dry	1	0.016	0.065	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Boron [7440-42-8] ^	0.53	JB	mg/kg dry	1	0.33	3.27	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Cadmium [7440-43-9] ^	0.013	U	mg/kg dry	1	0.013	0.065	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Calcium [7440-70-2] ^	68.0		mg/kg dry	1	7.32	32.7	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Chromium [7440-47-3] ^	2.20		mg/kg dry	1	0.07	0.65	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Cobalt [7440-48-4] ^	1.49		mg/kg dry	1	0.07	0.65	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Copper [7440-50-8] ^	0.248	U	mg/kg dry	1	0.248	0.653	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Iron [7439-89-6] ^	566		mg/kg dry	1	0.6	3.3	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Lead [7439-92-1] ^	0.47	J	mg/kg dry	1	0.16	0.65	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Magnesium [7439-95-4] ^	98.2		mg/kg dry	1	0.8	6.5	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Manganese [7439-96-5] ^	3.94		mg/kg dry	1	0.064	0.653	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Mercury [7439-97-6] ^	0.007	U	mg/kg dry	1	0.007	0.01	8G29003	EPA 7471A	07/31/08 11:20	MPL	
Molybdenum [7439-98-7] ^	0.08	U	mg/kg dry	1	0.08	0.65	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Nickel [7440-02-0] ^	3.32		mg/kg dry	1	0.47	0.65	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Potassium [7440-09-7] ^	57.6	B	mg/kg dry	1	5.2	32.7	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Selenium [7782-49-2] ^	0.13	U	mg/kg dry	1	0.13	0.65	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Silver [7440-22-4] ^	0.07	U	mg/kg dry	1	0.07	0.65	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Sodium [7440-23-5] ^	31	JB	mg/kg dry	1	8	33	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Thallium [7440-28-0] ^	0.26	U	mg/kg dry	1	0.26	0.65	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Vanadium [7440-62-2] ^	1.99	B	mg/kg dry	1	0.065	0.653	8G29002	EPA 6010B	07/31/08 16:33	VLO	
Zinc [7440-66-6] ^	3.75		mg/kg dry	1	0.065	0.653	8G29002	EPA 6010B	07/31/08 16:33	VLO	

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Description: MW-4
Matrix: Soil
Project: Fly Ash

Lab Sample ID: C807924-03
Sampled: 07/21/08 09:27
Sampled By: Mike Iwashchenko

Received: 07/24/08 10:45
Work Order: C807924
% Solids: 76.5

Classical Chemistry Parameters

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
% Solids [NA]	**77**		% by Weight	1	0.1	0.1	8G28022	% Solids	07/28/08 14:20	GPW	
Chloride [16887-00-6]	**25**	J	mg/kg dry wt. dry	1	6.5	65	8H05022	EPA 9056	08/06/08 00:27	AJ	Q
Fluoride [16984-48-8]	**0.65**	JB	mg/kg dry wt. dry	1	0.18	2.6	8H05022	EPA 9056	08/06/08 00:27	AJ	J-01a, Q
Nitrate as N [14797-55-8]	**4.4**	J	mg/kg dry wt. dry	1	1.3	13	8H05022	EPA 9056	08/06/08 00:27	AJ	Q
Nitrite as N [14797-65-0]	0.18	U	mg/kg dry wt. dry	1	0.18	1.3	8H05022	EPA 9056	08/06/08 00:27	AJ	Q
Phosphorus [7723-14-0]	**24**		mg/kg dry	1	8.2	10	8G31037	EPA 365.4	08/03/08 11:22	PEV	
Sulfate as SO4 [14808-79-8]	**150**	B	mg/kg dry wt. dry	1	6.5	65	8H05022	EPA 9056	08/06/08 00:27	AJ	J-01a, Q
Total Alkalinity [NA]	**110**	JB	mg/kg dry	1	61	200	8H06006	EPA 310.2	08/06/08 12:41	AJ	J-01a, Q

TCLP Metals by 6000/7000 Series Methods

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
Aluminum [7429-90-5] ^	**0.396**	J	mg/L	1	0.110	1.00	8H01014	EPA 6010B	08/04/08 20:42	ACV	
Antimony [7440-36-0] ^	0.0155	U	mg/L	1	0.0155	0.100	8H01014	EPA 6010B	08/04/08 20:42	ACV	
Arsenic [7440-38-2] ^	0.0120	U	mg/L	1	0.0120	0.0500	8H01014	EPA 6010B	08/04/08 20:42	ACV	
Barium [7440-39-3] ^	**0.378**	B	mg/L	1	0.00215	0.0500	8H01014	EPA 6010B	08/04/08 20:42	ACV	J-01
Beryllium [7440-41-7] ^	0.0008	U	mg/L	1	0.0008	0.0050	8H01014	EPA 6010B	08/04/08 20:42	ACV	
Boron [7440-42-8] ^	**0.423**	B	mg/L	1	0.0475	0.250	8H01014	EPA 6010B	08/04/08 20:42	ACV	J-01
Cadmium [7440-43-9] ^	0.0009	U	mg/L	1	0.0009	0.0050	8H01014	EPA 6010B	08/04/08 20:42	ACV	
Calcium [7440-70-2] ^	**6.25**	B	mg/L	1	0.0650	2.50	8H01014	EPA 6010B	08/04/08 20:42	ACV	J-01
Chromium [7440-47-3] ^	**0.00605**	J	mg/L	1	0.00215	0.0500	8H01014	EPA 6010B	08/04/08 20:42	ACV	
Cobalt [7440-48-4] ^	**0.0316**	J	mg/L	1	0.0012	0.0500	8H01014	EPA 6010B	08/04/08 20:42	ACV	
Copper [7440-50-8] ^	0.0060	U	mg/L	1	0.0060	0.0500	8H01014	EPA 6010B	08/04/08 20:42	ACV	
Iron [7439-89-6] ^	**0.346**		mg/L	1	0.0240	0.250	8H01014	EPA 6010B	08/04/08 20:42	ACV	
Lead [7439-92-1] ^	**0.0107**	J	mg/L	1	0.0080	0.0500	8H01014	EPA 6010B	08/04/08 20:42	ACV	
Magnesium [7439-95-4] ^	**1.25**	JB	mg/L	1	0.0750	2.50	8H01014	EPA 6010B	08/04/08 20:42	ACV	J-01
Manganese [7439-96-5] ^	**0.0217**	J	mg/L	1	0.0038	0.0500	8H01014	EPA 6010B	08/04/08 20:42	ACV	
Mercury [7439-97-6] ^	0.00054	U	mg/L	1	0.00054	0.00200	8G30020	EPA 7470A	07/31/08 16:06	GMB	
Molybdenum [7439-98-7] ^	0.0034	U	mg/L	1	0.0034	0.0500	8H01014	EPA 6010B	08/04/08 20:42	ACV	
Nickel [7440-02-0] ^	**0.0611**	JB	mg/L	1	0.0041	0.250	8H01014	EPA 6010B	08/04/08 20:42	ACV	J-01
Potassium [7440-09-7] ^	**1.46**	JB	mg/L	1	0.270	2.50	8H01014	EPA 6010B	08/04/08 20:42	ACV	J-01
Selenium [7782-49-2] ^	0.0185	U	mg/L	1	0.0185	0.0500	8H01014	EPA 6010B	08/04/08 20:42	ACV	
Silver [7440-22-4] ^	**0.0022**	J	mg/L	1	0.0020	0.0500	8H01014	EPA 6010B	08/04/08 20:42	ACV	
Sodium [7440-23-5] ^	**1310**	B	mg/L	1	0.190	2.50	8H01014	EPA 6010B	08/04/08 20:42	ACV	J-01
Thallium [7440-28-0] ^	0.0255	U	mg/L	1	0.0255	0.0500	8H01014	EPA 6010B	08/04/08 20:42	ACV	
Vanadium [7440-62-2] ^	0.0022	U	mg/L	1	0.0022	0.0500	8H01014	EPA 6010B	08/04/08 20:42	ACV	
Zinc [7440-66-6] ^	**0.166**	B	mg/L	1	0.0145	0.100	8H01014	EPA 6010B	08/04/08 20:42	ACV	J-01

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Description:	MW-4	**Lab Sample ID:**	C807924-03	**Received:**	07/24/08 10:45
Matrix:	Soil	**Sampled:**	07/21/08 09:27	**Work Order:**	C807924
Project:	Fly Ash	**Sampled By:**	Mike Iwashchenko	**% Solids:**	76.5

SPLP Metals by 6000/7000 Series Methods

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
Aluminum [7429-90-5] ^	**0.798**	B	mg/L	1	0.0220	0.200	8H01014	EPA 6010B	08/04/08 20:36	ACV	QB-01
Antimony [7440-36-0] ^	0.00310	U	mg/L	1	0.00310	0.0200	8H01014	EPA 6010B	08/04/08 20:36	ACV	
Arsenic [7440-38-2] ^	0.00240	U	mg/L	1	0.00240	0.0100	8H01014	EPA 6010B	08/04/08 20:36	ACV	
Barium [7440-39-3] ^	**0.0208**	B	mg/L	1	0.00043	0.0100	8H01014	EPA 6010B	08/04/08 20:36	ACV	J-01
Beryllium [7440-41-7] ^	0.0002	U	mg/L	1	0.0002	0.0010	8H01014	EPA 6010B	08/04/08 20:36	ACV	
Boron [7440-42-8] ^	**0.101**	B	mg/L	1	0.0095	0.0500	8H01014	EPA 6010B	08/04/08 20:36	ACV	J-01
Cadmium [7440-43-9] ^	0.0002	U	mg/L	1	0.0002	0.0010	8H01014	EPA 6010B	08/04/08 20:36	ACV	
Calcium [7440-70-2] ^	**0.878**	B	mg/L	1	0.0130	0.500	8H01014	EPA 6010B	08/04/08 20:36	ACV	J-01
Chromium [7440-47-3] ^	**0.00248**	JB	mg/L	1	0.00043	0.0100	8H01014	EPA 6010B	08/04/08 20:36	ACV	J-01
Cobalt [7440-48-4] ^	**0.0097**	J	mg/L	1	0.0002	0.0100	8H01014	EPA 6010B	08/04/08 20:36	ACV	
Copper [7440-50-8] ^	0.0012	U	mg/L	1	0.0012	0.0100	8H01014	EPA 6010B	08/04/08 20:36	ACV	
Iron [7439-89-6] ^	**0.261**		mg/L	1	0.0048	0.0500	8H01014	EPA 6010B	08/04/08 20:36	ACV	
Lead [7439-92-1] ^	0.0016	U	mg/L	1	0.0016	0.0100	8H01014	EPA 6010B	08/04/08 20:36	ACV	
Magnesium [7439-95-4] ^	**0.623**	B	mg/L	1	0.0150	0.500	8H01014	EPA 6010B	08/04/08 20:36	ACV	J-01
Manganese [7439-96-5] ^	**0.0064**	J	mg/L	1	0.0008	0.0100	8H01014	EPA 6010B	08/04/08 20:36	ACV	
Mercury [7439-97-6] ^	0.000054	U	mg/L	1	0.000054	0.00020	8G30019	EPA 7470A	07/31/08 15:37	AA	
Molybdenum [7439-98-7] ^	0.0007	U	mg/L	1	0.0007	0.0100	8H01014	EPA 6010B	08/04/08 20:36	ACV	
Nickel [7440-02-0] ^	**0.0254**	JB	mg/L	1	0.0004	0.0500	8H01014	EPA 6010B	08/04/08 20:36	ACV	QB-01
Potassium [7440-09-7] ^	**0.226**	JB	mg/L	1	0.0540	0.500	8H01014	EPA 6010B	08/04/08 20:36	ACV	J-01
Selenium [7782-49-2] ^	0.0037	U	mg/L	1	0.0037	0.0100	8H01014	EPA 6010B	08/04/08 20:36	ACV	
Silver [7440-22-4] ^	**0.0007**	J	mg/L	1	0.0004	0.0100	8H01014	EPA 6010B	08/04/08 20:36	ACV	
Sodium [7440-23-5] ^	**4.11**	B	mg/L	1	0.0380	0.500	8H01014	EPA 6010B	08/04/08 20:36	ACV	J-01
Thallium [7440-28-0] ^	0.0051	U	mg/L	1	0.0051	0.0100	8H01014	EPA 6010B	08/04/08 20:36	ACV	
Vanadium [7440-62-2] ^	**0.0017**	J	mg/L	1	0.0004	0.0100	8H01014	EPA 6010B	08/04/08 20:36	ACV	
Zinc [7440-66-6] ^	**0.0139**	JB	mg/L	1	0.0029	0.0200	8H01014	EPA 6010B	08/04/08 20:36	ACV	J-01

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description:	MW-5D 8'-9'	**Lab Sample ID:**	C807924-04	**Received:**	07/24/08 10:45
Matrix:	Soil	**Sampled:**	07/21/08 13:00	**Work Order:**	C807924
Project:	Fly Ash	**Sampled By:**	Mike Iwashchenko	**% Solids:**	78.1

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NELAC E87610]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
Aluminum [7429-90-5] ^	**8570**	B	mg/kg dry	1	2.7	6.4	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Antimony [7440-36-0] ^	**0.62**	JB	mg/kg dry	1	0.14	0.64	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Arsenic [7440-38-2] ^	**3.87**	B	mg/kg dry	1	0.08	0.64	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Barium [7440-39-3] ^	**39.3**		mg/kg dry	1	0.064	0.640	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Beryllium [7440-41-7] ^	**0.110**		mg/kg dry	1	0.015	0.064	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Boron [7440-42-8] ^	**2.57**	JB	mg/kg dry	1	0.32	3.20	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Cadmium [7440-43-9] ^	0.012	U	mg/kg dry	1	0.012	0.064	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Calcium [7440-70-2] ^	**64.2**		mg/kg dry	1	7.17	32.0	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Chromium [7440-47-3] ^	**22.3**		mg/kg dry	1	0.07	0.64	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Cobalt [7440-48-4] ^	**7.17**		mg/kg dry	1	0.06	0.64	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Copper [7440-50-8] ^	**10.9**		mg/kg dry	1	0.243	0.640	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Iron [7439-89-6] ^	**9380**		mg/kg dry	1	0.6	3.2	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Lead [7439-92-1] ^	**9.10**		mg/kg dry	1	0.15	0.64	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Magnesium [7439-95-4] ^	**944**		mg/kg dry	1	0.8	6.4	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Manganese [7439-96-5] ^	**31.2**		mg/kg dry	1	0.063	0.640	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Mercury [7439-97-6] ^	**0.008**	J	mg/kg dry	1	0.006	0.01	8G29003	EPA 7471A	07/31/08 12:03	MPL	
Molybdenum [7439-98-7] ^	0.08	U	mg/kg dry	1	0.08	0.64	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Nickel [7440-02-0] ^	**13.2**		mg/kg dry	1	0.46	0.64	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Potassium [7440-09-7] ^	**851**	B	mg/kg dry	1	5.1	32.0	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Selenium [7782-49-2] ^	0.13	U	mg/kg dry	1	0.13	0.64	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Silver [7440-22-4] ^	0.06	U	mg/kg dry	1	0.06	0.64	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Sodium [7440-23-5] ^	**101**	B	mg/kg dry	1	8	32	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Thallium [7440-28-0] ^	0.26	U	mg/kg dry	1	0.26	0.64	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Vanadium [7440-62-2] ^	**28.4**	B	mg/kg dry	1	0.064	0.640	8G29002	EPA 6010B	07/31/08 17:46	VLO	
Zinc [7440-66-6] ^	**26.7**		mg/kg dry	1	0.064	0.640	8G29002	EPA 6010B	07/31/08 17:46	VLO	

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Description: MW-5D 8'-9'
Matrix: Soil
Project: Fly Ash

Lab Sample ID: C807924-04
Sampled: 07/21/08 13:00
Sampled By: Mike Iwashchenko

Received: 07/24/08 10:45
Work Order: C807924
% Solids: 78.1

Classical Chemistry Parameters

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
% Solids [NA]	**78**		% by Weight	1	0.1	0.1	8G28022	% Solids	07/28/08 14:20	GPW	
Chloride [16887-00-6]	**22**	J	mg/kg dry wt. dry	1	6.4	64	8H05022	EPA 9056	08/06/08 00:56	AJ	Q
Fluoride [16984-48-8]	0.18	U	mg/kg dry wt. dry	1	0.18	2.6	8H05022	EPA 9056	08/06/08 00:56	AJ	Q
Nitrate as N [14797-55-8]	**4.3**	J	mg/kg dry wt. dry	1	1.3	13	8H05022	EPA 9056	08/06/08 00:56	AJ	Q
Nitrite as N [14797-65-0]	0.18	U	mg/kg dry wt. dry	1	0.18	1.3	8H05022	EPA 9056	08/06/08 00:56	AJ	Q
Phosphorus [7723-14-0]	**96**		mg/kg dry	1	8.1	10	8G31037	EPA 365.4	08/03/08 11:26	PEV	
Sulfate as SO4 [14808-79-8]	**71**	B	mg/kg dry wt. dry	1	6.4	64	8H05022	EPA 9056	08/06/08 00:56	AJ	J-01a, Q
Total Alkalinity [NA]	60	U	mg/kg dry	1	60	190	8H06006	EPA 310.2	08/06/08 09:43	AJ	Q

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Description: MW-5D 8'-9'
Matrix: Soil
Project: Fly Ash

Lab Sample ID: C807924-04
Sampled: 07/21/08 13:00
Sampled By: Mike Iwashchenko

Received: 07/24/08 10:45
Work Order: C807924
% Solids: 78.1

TCLP Metals by 6000/7000 Series Methods

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
Aluminum [7429-90-5] ^	**1.09**		mg/L	1	0.110	1.00	8H01014	EPA 6010B	08/04/08 20:56	ACV	
Antimony [7440-36-0] ^	0.0155	U	mg/L	1	0.0155	0.100	8H01014	EPA 6010B	08/04/08 20:56	ACV	
Arsenic [7440-38-2] ^	0.0120	U	mg/L	1	0.0120	0.0500	8H01014	EPA 6010B	08/04/08 20:56	ACV	
Barium [7440-39-3] ^	**0.813**	B	mg/L	1	0.00215	0.0500	8H01014	EPA 6010B	08/04/08 20:56	ACV	J-01
Beryllium [7440-41-7] ^	0.0008	U	mg/L	1	0.0008	0.0050	8H01014	EPA 6010B	08/04/08 20:56	ACV	
Boron [7440-42-8] ^	**0.490**	B	mg/L	1	0.0475	0.250	8H01014	EPA 6010B	08/04/08 20:56	ACV	J-01
Cadmium [7440-43-9] ^	**0.0012**	J	mg/L	1	0.0009	0.0050	8H01014	EPA 6010B	08/04/08 20:56	ACV	
Calcium [7440-70-2] ^	**9.12**	B	mg/L	1	0.0650	2.50	8H01014	EPA 6010B	08/04/08 20:56	ACV	J-01
Chromium [7440-47-3] ^	**0.00526**	J	mg/L	1	0.00215	0.0500	8H01014	EPA 6010B	08/04/08 20:56	ACV	
Cobalt [7440-48-4] ^	**0.0472**	J	mg/L	1	0.0012	0.0500	8H01014	EPA 6010B	08/04/08 20:56	ACV	
Copper [7440-50-8] ^	**0.0198**	J	mg/L	1	0.0060	0.0500	8H01014	EPA 6010B	08/04/08 20:56	ACV	
Iron [7439-89-6] ^	**0.110**	J	mg/L	1	0.0240	0.250	8H01014	EPA 6010B	08/04/08 20:56	ACV	
Lead [7439-92-1] ^	**0.0175**	J	mg/L	1	0.0080	0.0500	8H01014	EPA 6010B	08/04/08 20:56	ACV	
Magnesium [7439-95-4] ^	**4.19**	B	mg/L	1	0.0750	2.50	8H01014	EPA 6010B	08/04/08 20:56	ACV	J-01
Manganese [7439-96-5] ^	**0.0516**		mg/L	1	0.0038	0.0500	8H01014	EPA 6010B	08/04/08 20:56	ACV	
Mercury [7439-97-6] ^	0.00054	U	mg/L	1	0.00054	0.00200	8G30020	EPA 7470A	07/31/08 16:07	GMB	
Molybdenum [7439-98-7] ^	0.0034	U	mg/L	1	0.0034	0.0500	8H01014	EPA 6010B	08/04/08 20:56	ACV	
Nickel [7440-02-0] ^	**0.0679**	JB	mg/L	1	0.0041	0.250	8H01014	EPA 6010B	08/04/08 20:56	ACV	J-01
Potassium [7440-09-7] ^	**1.90**	JB	mg/L	1	0.270	2.50	8H01014	EPA 6010B	08/04/08 20:56	ACV	J-01
Selenium [7782-49-2] ^	0.0185	U	mg/L	1	0.0185	0.0500	8H01014	EPA 6010B	08/04/08 20:56	ACV	
Silver [7440-22-4] ^	0.0020	U	mg/L	1	0.0020	0.0500	8H01014	EPA 6010B	08/04/08 20:56	ACV	
Sodium [7440-23-5] ^	**1300**	B	mg/L	1	0.190	2.50	8H01014	EPA 6010B	08/04/08 20:56	ACV	J-01
Thallium [7440-28-0] ^	0.0255	U	mg/L	1	0.0255	0.0500	8H01014	EPA 6010B	08/04/08 20:56	ACV	
Vanadium [7440-62-2] ^	0.0022	U	mg/L	1	0.0022	0.0500	8H01014	EPA 6010B	08/04/08 20:56	ACV	
Zinc [7440-66-6] ^	**0.255**	B	mg/L	1	0.0145	0.100	8H01014	EPA 6010B	08/04/08 20:56	ACV	J-01

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Description:	MW-5D 8'-9'	**Lab Sample ID:**	C807924-04	**Received:**	07/24/08 10:45
Matrix:	Soil	**Sampled:**	07/21/08 13:00	**Work Order:**	C807924
Project:	Fly Ash	**Sampled By:**	Mike Iwashchenko	**% Solids:**	78.1

SPLP Metals by 6000/7000 Series Methods

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
Aluminum. [7429-90-5] ^	**4.31**	B	mg/L	1	0.0220	0.200	8H01014	EPA 6010B	08/04/08 20:50	ACV	QB-01
Antimony [7440-36-0] ^	0.00310	U	mg/L	1	0.00310	0.0200	8H01014	EPA 6010B	08/04/08 20:50	ACV	
Arsenic [7440-38-2] ^	**0.00306**	J	mg/L	1	0.00240	0.0100	8H01014	EPA 6010B	08/04/08 20:50	ACV	
Barium [7440-39-3] ^	**0.0516**	B	mg/L	1	0.00043	0.0100	8H01014	EPA 6010B	08/04/08 20:50	ACV	J-01
Beryllium [7440-41-7] ^	0.0002	U	mg/L	1	0.0002	0.0010	8H01014	EPA 6010B	08/04/08 20:50	ACV	
Boron [7440-42-8] ^	**0.111**	B	mg/L	1	0.0095	0.0500	8H01014	EPA 6010B	08/04/08 20:50	ACV	J-01
Cadmium [7440-43-9] ^	0.0002	U	mg/L	1	0.0002	0.0010	8H01014	EPA 6010B	08/04/08 20:50	ACV	
Calcium [7440-70-2] ^	**1.60**	B	mg/L	1	0.0130	0.500	8H01014	EPA 6010B	08/04/08 20:50	ACV	J-01
Chromium [7440-47-3] ^	**0.00808**	JB	mg/L	1	0.00043	0.0100	8H01014	EPA 6010B	08/04/08 20:50	ACV	J-01
Cobalt [7440-48-4] ^	**0.0011**	J	mg/L	1	0.0002	0.0100	8H01014	EPA 6010B	08/04/08 20:50	ACV	
Copper [7440-50-8] ^	0.0012	U	mg/L	1	0.0012	0.0100	8H01014	EPA 6010B	08/04/08 20:50	ACV	
Iron [7439-89-6] ^	**2.19**		mg/L	1	0.0048	0.0500	8H01014	EPA 6010B	08/04/08 20:50	ACV	
Lead [7439-92-1] ^	**0.0021**	J	mg/L	1	0.0016	0.0100	8H01014	EPA 6010B	08/04/08 20:50	ACV	
Magnesium [7439-95-4] ^	**0.979**	B	mg/L	1	0.0150	0.500	8H01014	EPA 6010B	08/04/08 20:50	ACV	J-01
Manganese [7439-96-5] ^	**0.0034**	J	mg/L	1	0.0008	0.0100	8H01014	EPA 6010B	08/04/08 20:50	ACV	
Mercury [7439-97-6] ^	0.000054	U	mg/L	1	0.000054	0.00020	8G30019	EPA 7470A	07/31/08 15:39	AA	
Molybdenum [7439-98-7] ^	0.0007	U	mg/L	1	0.0007	0.0100	8H01014	EPA 6010B	08/04/08 20:50	ACV	
Nickel [7440-02-0] ^	**0.0024**	JB	mg/L	1	0.0004	0.0500	8H01014	EPA 6010B	08/04/08 20:50	ACV	J-01
Potassium [7440-09-7] ^	**0.714**	B	mg/L	1	0.0540	0.500	8H01014	EPA 6010B	08/04/08 20:50	ACV	J-01
Selenium [7782-49-2] ^	0.0037	U	mg/L	1	0.0037	0.0100	8H01014	EPA 6010B	08/04/08 20:50	ACV	
Silver [7440-22-4] ^	0.0004	U	mg/L	1	0.0004	0.0100	8H01014	EPA 6010B	08/04/08 20:50	ACV	
Sodium [7440-23-5] ^	**21.4**	B	mg/L	1	0.0380	0.500	8H01014	EPA 6010B	08/04/08 20:50	ACV	J-01
Thallium [7440-28-0] ^	0.0051	U	mg/L	1	0.0051	0.0100	8H01014	EPA 6010B	08/04/08 20:50	ACV	
Vanadium [7440-62-2] ^	**0.0089**	J	mg/L	1	0.0004	0.0100	8H01014	EPA 6010B	08/04/08 20:50	ACV	
Zinc [7440-66-6] ^	**0.0123**	JB	mg/L	1	0.0029	0.0200	8H01014	EPA 6010B	08/04/08 20:50	ACV	J-01

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description:	MW-5D 29'-31'	**Lab Sample ID:**	C807924-05	**Received:**	07/24/08 10:45
Matrix:	Soil	**Sampled:**	07/21/08 13:07	**Work Order:**	C807924
Project:	Fly Ash	**Sampled By:**	Mike Iwashchenko	**% Solids:**	81.3

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NELAC E87610]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
Aluminum [7429-90-5] ^	**459**	B	mg/kg dry	1	2.6	6.2	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Antimony [7440-36-0] ^	**0.37**	JB	mg/kg dry	1	0.14	0.62	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Arsenic [7440-38-2] ^	**0.73**	B	mg/kg dry	1	0.08	0.62	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Barium [7440-39-3] ^	**2.52**		mg/kg dry	1	0.062	0.615	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Beryllium [7440-41-7] ^	0.015	U	mg/kg dry	1	0.015	0.062	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Boron [7440-42-8] ^	**0.60**	JB	mg/kg dry	1	0.31	3.08	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Cadmium [7440-43-9] ^	0.012	U	mg/kg dry	1	0.012	0.062	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Calcium [7440-70-2] ^	**123**		mg/kg dry	1	6.89	30.8	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Chromium [7440-47-3] ^	**1.63**		mg/kg dry	1	0.07	0.62	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Cobalt [7440-48-4] ^	**0.63**		mg/kg dry	1	0.06	0.62	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Copper [7440-50-8] ^	0.234	U	mg/kg dry	1	0.234	0.615	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Iron [7439-89-6] ^	**974**		mg/kg dry	1	0.6	3.1	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Lead [7439-92-1] ^	**0.84**		mg/kg dry	1	0.15	0.62	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Magnesium [7439-95-4] ^	**99.4**		mg/kg dry	1	0.8	6.2	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Manganese [7439-96-5] ^	**7.52**		mg/kg dry	1	0.060	0.615	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Mercury [7439-97-6] ^	0.005	U	mg/kg dry	1	0.005	0.01	8G29003	EPA 7471A	07/31/08 12:06	MPL	
Molybdenum [7439-98-7] ^	0.08	U	mg/kg dry	1	0.08	0.62	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Nickel [7440-02-0] ^	**1.17**		mg/kg dry	1	0.44	0.62	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Potassium [7440-09-7] ^	**86.5**	B	mg/kg dry	1	4.9	30.8	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Selenium [7782-49-2] ^	0.12	U	mg/kg dry	1	0.12	0.62	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Silver [7440-22-4] ^	0.06	U	mg/kg dry	1	0.06	0.62	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Sodium [7440-23-5] ^	**70**	B	mg/kg dry	1	7	31	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Thallium [7440-28-0] ^	0.25	U	mg/kg dry	1	0.25	0.62	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Vanadium [7440-62-2] ^	**1.89**	B	mg/kg dry	1	0.062	0.615	8G29002	EPA 6010B	07/31/08 17:53	VLO	
Zinc [7440-66-6] ^	**3.16**		mg/kg dry	1	0.062	0.615	8G29002	EPA 6010B	07/31/08 17:53	VLO	

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Description: MW-5D 29'-31'
Matrix: Soil
Project: Fly Ash

Lab Sample ID: C807924-05
Sampled: 07/21/08 13:07
Sampled By: Mike Iwashchenko

Received: 07/24/08 10:45
Work Order: C807924
% Solids: 81.3

Classical Chemistry Parameters

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
% Solids [NA]	**81**		% by Weight	1	0.1	0.1	8G28022	% Solids	07/28/08 14:20	GPW	
Chloride [16887-00-6]	**21**	J	mg/kg dry wt. dry	1	6.2	62	8H05022	EPA 9056	08/06/08 01:26	AJ	Q
Fluoride [16984-48-8]	**0.49**	JB	mg/kg dry wt. dry	1	0.17	2.5	8H05022	EPA 9056	08/06/08 01:26	AJ	J-01a, Q
Nitrate as N [14797-55-8]	**4.3**	J	mg/kg dry wt. dry	1	1.2	12	8H05022	EPA 9056	08/06/08 01:26	AJ	Q
Nitrite as N [14797-65-0]	0.17	U	mg/kg dry wt. dry	1	0.17	1.2	8H05022	EPA 9056	08/06/08 01:26	AJ	Q
Phosphorus [7723-14-0]	**50**		mg/kg dry	1	7.8	9.8	8G31037	EPA 365.4	08/03/08 11:28	PEV	
Sulfate as SO4 [14808-79-8]	**100**	B	mg/kg dry wt. dry	1	6.2	62	8H05022	EPA 9056	08/06/08 01:26	AJ	J-01a, Q
Total Alkalinity [NA]	58	U	mg/kg dry	1	58	180	8H06006	EPA 310.2	08/06/08 09:43	AJ	Q

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Description: MW-5D 29'-31'
Matrix: Soil
Project: Fly Ash

Lab Sample ID: C807924-05
Sampled: 07/21/08 13:07
Sampled By: Mike Iwashchenko

Received: 07/24/08 10:45
Work Order: C807924
% Solids: 81.3

TCLP Metals by 6000/7000 Series Methods

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
Aluminum [7429-90-5] ^	**0.153**	J	mg/L	1	0.110	1.00	8H01014	EPA 6010B	08/04/08 21:10	ACV	
Antimony [7440-36-0] ^	0.0155	U	mg/L	1	0.0155	0.100	8H01014	EPA 6010B	08/04/08 21:10	ACV	
Arsenic [7440-38-2] ^	0.0120	U	mg/L	1	0.0120	0.0500	8H01014	EPA 6010B	08/04/08 21:10	ACV	
Barium [7440-39-3] ^	**0.336**	B	mg/L	1	0.00215	0.0500	8H01014	EPA 6010B	08/04/08 21:10	ACV	J-01
Beryllium [7440-41-7] ^	0.0008	U	mg/L	1	0.0008	0.0050	8H01014	EPA 6010B	08/04/08 21:10	ACV	
Boron [7440-42-8] ^	**0.334**	B	mg/L	1	0.0475	0.250	8H01014	EPA 6010B	08/04/08 21:10	ACV	J-01
Cadmium [7440-43-9] ^	0.0009	U	mg/L	1	0.0009	0.0050	8H01014	EPA 6010B	08/04/08 21:10	ACV	
Calcium [7440-70-2] ^	**6.62**	B	mg/L	1	0.0650	2.50	8H01014	EPA 6010B	08/04/08 21:10	ACV	J-01
Chromium [7440-47-3] ^	0.00215	U	mg/L	1	0.00215	0.0500	8H01014	EPA 6010B	08/04/08 21:10	ACV	
Cobalt [7440-48-4] ^	**0.0055**	J	mg/L	1	0.0012	0.0500	8H01014	EPA 6010B	08/04/08 21:10	ACV	
Copper [7440-50-8] ^	0.0060	U	mg/L	1	0.0060	0.0500	8H01014	EPA 6010B	08/04/08 21:10	ACV	
Iron [7439-89-6] ^	**1.82**		mg/L	1	0.0240	0.250	8H01014	EPA 6010B	08/04/08 21:10	ACV	
Lead [7439-92-1] ^	0.0080	U	mg/L	1	0.0080	0.0500	8H01014	EPA 6010B	08/04/08 21:10	ACV	
Magnesium [7439-95-4] ^	**1.13**	JB	mg/L	1	0.0750	2.50	8H01014	EPA 6010B	08/04/08 21:10	ACV	J-01
Manganese [7439-96-5] ^	**0.0564**		mg/L	1	0.0038	0.0500	8H01014	EPA 6010B	08/04/08 21:10	ACV	
Mercury [7439-97-6] ^	0.00054	U	mg/L	1	0.00054	0.00200	8G30020	EPA 7470A	07/31/08 16:09	GMB	
Molybdenum [7439-98-7] ^	0.0034	U	mg/L	1	0.0034	0.0500	8H01014	EPA 6010B	08/04/08 21:10	ACV	
Nickel [7440-02-0] ^	**0.0120**	JB	mg/L	1	0.0041	0.250	8H01014	EPA 6010B	08/04/08 21:10	ACV	J-01
Potassium [7440-09-7] ^	**1.35**	JB	mg/L	1	0.270	2.50	8H01014	EPA 6010B	08/04/08 21:10	ACV	J-01
Selenium [7782-49-2] ^	0.0185	U	mg/L	1	0.0185	0.0500	8H01014	EPA 6010B	08/04/08 21:10	ACV	
Silver [7440-22-4] ^	0.0020	U	mg/L	1	0.0020	0.0500	8H01014	EPA 6010B	08/04/08 21:10	ACV	
Sodium [7440-23-5] ^	**1320**	B	mg/L	1	0.190	2.50	8H01014	EPA 6010B	08/04/08 21:10	ACV	J-01
Thallium [7440-28-0] ^	0.0255	U	mg/L	1	0.0255	0.0500	8H01014	EPA 6010B	08/04/08 21:10	ACV	
Vanadium [7440-62-2] ^	0.0022	U	mg/L	1	0.0022	0.0500	8H01014	EPA 6010B	08/04/08 21:10	ACV	
Zinc [7440-66-6] ^	**0.180**	B	mg/L	1	0.0145	0.100	8H01014	EPA 6010B	08/04/08 21:10	ACV	J-01

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Description: MW-5D 29'-31'
Matrix: Soil
Project: Fly Ash

Lab Sample ID: C807924-05
Sampled: 07/21/08 13:07
Sampled By: Mike Iwashchenko

Received: 07/24/08 10:45
Work Order: C807924
% Solids: 81.3

SPLP Metals by 6000/7000 Series Methods

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
Aluminum [7429-90-5] ^	**0.800**	B	mg/L	1	0.0220	0.200	8H01014	EPA 6010B	08/04/08 21:03	ACV	QB-01
Antimony [7440-36-0] ^	0.00310	U	mg/L	1	0.00310	0.0200	8H01014	EPA 6010B	08/04/08 21:03	ACV	
Arsenic [7440-38-2] ^	0.00240	U	mg/L	1	0.00240	0.0100	8H01014	EPA 6010B	08/04/08 21:03	ACV	
Barium [7440-39-3] ^	**0.0352**	B	mg/L	1	0.00043	0.0100	8H01014	EPA 6010B	08/04/08 21:03	ACV	J-01
Beryllium [7440-41-7] ^	0.0002	U	mg/L	1	0.0002	0.0010	8H01014	EPA 6010B	08/04/08 21:03	ACV	
Boron [7440-42-8] ^	**0.102**	B	mg/L	1	0.0095	0.0500	8H01014	EPA 6010B	08/04/08 21:03	ACV	J-01
Cadmium [7440-43-9] ^	0.0002	U	mg/L	1	0.0002	0.0010	8H01014	EPA 6010B	08/04/08 21:03	ACV	
Calcium [7440-70-2] ^	**2.27**	B	mg/L	1	0.0130	0.500	8H01014	EPA 6010B	08/04/08 21:03	ACV	J-01
Chromium [7440-47-3] ^	**0.00257**	JB	mg/L	1	0.00043	0.0100	8H01014	EPA 6010B	08/04/08 21:03	ACV	J-01
Cobalt [7440-48-4] ^	**0.0004**	J	mg/L	1	0.0002	0.0100	8H01014	EPA 6010B	08/04/08 21:03	ACV	
Copper [7440-50-8] ^	0.0012	U	mg/L	1	0.0012	0.0100	8H01014	EPA 6010B	08/04/08 21:03	ACV	
Iron [7439-89-6] ^	**0.529**		mg/L	1	0.0048	0.0500	8H01014	EPA 6010B	08/04/08 21:03	ACV	
Lead [7439-92-1] ^	0.0016	U	mg/L	1	0.0016	0.0100	8H01014	EPA 6010B	08/04/08 21:03	ACV	
Magnesium [7439-95-4] ^	**0.578**	B	mg/L	1	0.0150	0.500	8H01014	EPA 6010B	08/04/08 21:03	ACV	J-01
Manganese [7439-96-5] ^	**0.0073**	J	mg/L	1	0.0008	0.0100	8H01014	EPA 6010B	08/04/08 21:03	ACV	
Mercury [7439-97-6] ^	0.000054	U	mg/L	1	0.000054	0.00020	8G30019	EPA 7470A	07/31/08 15:41	AA	
Molybdenum [7439-98-7] ^	0.0007	U	mg/L	1	0.0007	0.0100	8H01014	EPA 6010B	08/04/08 21:03	ACV	
Nickel [7440-02-0] ^	**0.0019**	JB	mg/L	1	0.0004	0.0500	8H01014	EPA 6010B	08/04/08 21:03	ACV	J-01
Potassium [7440-09-7] ^	**0.257**	JB	mg/L	1	0.0540	0.500	8H01014	EPA 6010B	08/04/08 21:03	ACV	J-01
Selenium [7782-49-2] ^	0.0037	U	mg/L	1	0.0037	0.0100	8H01014	EPA 6010B	08/04/08 21:03	ACV	
Silver [7440-22-4] ^	**0.0006**	J	mg/L	1	0.0004	0.0100	8H01014	EPA 6010B	08/04/08 21:03	ACV	
Sodium [7440-23-5] ^	**16.2**	B	mg/L	1	0.0380	0.500	8H01014	EPA 6010B	08/04/08 21:03	ACV	J-01
Thallium [7440-28-0] ^	0.0051	U	mg/L	1	0.0051	0.0100	8H01014	EPA 6010B	08/04/08 21:03	ACV	
Vanadium [7440-62-2] ^	**0.0017**	J	mg/L	1	0.0004	0.0100	8H01014	EPA 6010B	08/04/08 21:03	ACV	
Zinc [7440-66-6] ^	**0.0165**	JB	mg/L	1	0.0029	0.0200	8H01014	EPA 6010B	08/04/08 21:03	ACV	J-01

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QUALITY CONTROL

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 8G25002 - EPA 3005A

Blank (8G25002-BLK1) Prepared: 07/25/2008 07:10 Analyzed: 07/30/2008 11:13

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	39	J	100	ug/L							
Antimony	1.0	U	10.0	ug/L							
Arsenic	2.8	U	10.0	ug/L							
Barium	1.00	U	10.0	ug/L							
Beryllium	0.10	U	1.00	ug/L							
Boron	5.0	U	50.0	ug/L							
Cadmium	0.36	U	1.00	ug/L							
Calcium	20.0	U	100	ug/L							
Chromium	1.0	U	10.0	ug/L							
Cobalt	1.1	U	10.0	ug/L							
Copper	1.60	U	10.0	ug/L							
Iron	22	U	50	ug/L							
Lead	1.9	U	10.0	ug/L							
Magnesium	23	U	100	ug/L							
Manganese	1.1	U	10.0	ug/L							
Molybdenum	2.5	U	10.0	ug/L							
Nickel	1.8	U	10.0	ug/L							
Potassium	150	U	500	ug/L							
Selenium	2.7	U	10.0	ug/L							
Silver	1.9	U	10.0	ug/L							
Sodium	400	U	500	ug/L							
Thallium	4.8	U	10.0	ug/L							
Vanadium	1.4	U	10.0	ug/L							
Zinc	3.8	U	10.0	ug/L							

LCS (8G25002-BS1) Prepared: 07/25/2008 07:10 Analyzed: 07/30/2008 11:20

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	5040	B	100	ug/L	5000		101	77-130			
Antimony	256		10.0	ug/L	250		102	82-119			
Arsenic	519		10.0	ug/L	500		104	82-117			
Barium	521		10.0	ug/L	500		104	72-125			
Beryllium	264		1.00	ug/L	250		106	75-121			
Boron	524		50.0	ug/L	500		105	75-122			
Cadmium	264		1.00	ug/L	250		106	72-120			
Calcium	5120		100	ug/L	5000		102	81-111			
Chromium	513		10.0	ug/L	500		103	78-119			
Cobalt	505		10.0	ug/L	500		101	76-117			
Copper	255		10.0	ug/L	250		102	80-117			
Iron	5080		50	ug/L	5000		102	84-133			
Lead	509		10.0	ug/L	500		102	72-121			
Magnesium	5180		100	ug/L	5000		104	81-117			
Manganese	256		10.0	ug/L	250		102	76-123			
Molybdenum	243		10.0	ug/L	250		97	83-112			
Nickel	521		10.0	ug/L	500		104	78-116			
Potassium	23300		500	ug/L	25000		93	84-112			
Selenium	524		10.0	ug/L	500		105	82-127			
Silver	48.7		10.0	ug/L	50.0		97	80-128			

QUALITY CONTROL

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 8G25002 - EPA 3005A

LCS (8G25002-BS1) Continued Prepared: 07/25/2008 07:10 Analyzed: 07/30/2008 11:20

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Sodium	22900		500	ug/L	25000		91	81-120			
Thallium	258		10.0	ug/L	250		103	79-118			
Vanadium	249		10.0	ug/L	250		100	78-117			
Zinc	512		10.0	ug/L	500		102	80-120			

Matrix Spike (8G25002-MS1) Prepared: 07/25/2008 07:10 Analyzed: 07/30/2008 11:36

Source: C807495-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	6460	B	100	ug/L	5000	979	110	78-125			
Antimony	264		10.0	ug/L	250	1.0 U	106	38-138			
Arsenic	527		10.0	ug/L	500	2.8 U	105	64-126			
Barium	593		10.0	ug/L	500	58.8	107	74-119			
Beryllium	268		1.00	ug/L	250	0.10	107	70-131			
Boron	531		50.0	ug/L	500	5.0 U	106	77-114			
Cadmium	267		1.00	ug/L	250	0.36 U	107	68-121			
Calcium	5800		100	ug/L	5000	620	104	63-131			
Chromium	522		10.0	ug/L	500	1.3	104	73-120			
Cobalt	515		10.0	ug/L	500	1.1 U	103	76-120			
Copper	258		10.0	ug/L	250	1.60 U	103	75-123			
Iron	6300		50	ug/L	5000	1150	103	48-144			
Lead	514		10.0	ug/L	500	1.9 U	103	68-126			
Magnesium	6540		100	ug/L	5000	1340	104	59-129			
Manganese	287		10.0	ug/L	250	30.9	102	55-146			
Molybdenum	248		10.0	ug/L	250	2.5 U	99	72-118			
Nickel	530		10.0	ug/L	500	1.8 U	106	64-126			
Potassium	25900		500	ug/L	25000	1190	99	53-121			
Selenium	532		10.0	ug/L	500	2.7 U	106	65-129			
Silver	50.2		10.0	ug/L	50.0	1.9 U	100	69-121			
Sodium	24800		500	ug/L	25000	826	96	29-171			
Thallium	265		10.0	ug/L	250	4.8 U	106	67-135			
Vanadium	254		10.0	ug/L	250	2.3	101	71-130			
Zinc	526		10.0	ug/L	500	5.2	104	63-131			

Matrix Spike Dup (8G25002-MSD1) Prepared: 07/25/2008 07:10 Analyzed: 07/30/2008 11:43

Source: C807495-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	6560	B	100	ug/L	5000	979	112	78-125	2	22	
Antimony	265		10.0	ug/L	250	1.0 U	106	38-138	0.3	30	
Arsenic	529		10.0	ug/L	500	2.8 U	106	64-126	0.5	12	
Barium	596		10.0	ug/L	500	58.8	107	74-119	0.6	11	
Beryllium	270		1.00	ug/L	250	0.10	108	70-131	0.6	21	
Boron	535		50.0	ug/L	500	5.0 U	107	77-114	0.8	11	
Cadmium	270		1.00	ug/L	250	0.36 U	108	68-121	0.8	12	
Calcium	5840		100	ug/L	5000	620	104	63-131	0.8	22	
Chromium	526		10.0	ug/L	500	1.3	105	73-120	0.7	10	
Cobalt	516		10.0	ug/L	500	1.1 U	103	76-120	0.1	17	

QUALITY CONTROL

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 8G25002 - EPA 3005A

Matrix Spike Dup (8G25002-MSD1) Continued Prepared: 07/25/2008 07:10 Analyzed: 07/30/2008 11:43

Source: C807495-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Copper	260		10.0	ug/L	250	1.60 U	104	75-123	0.7	16	
Iron	6400		50	ug/L	5000	1150	105	48-144	2	23	
Lead	516		10.0	ug/L	500	1.9 U	103	68-126	0.6	19	
Magnesium	6630		100	ug/L	5000	1340	106	59-129	1	22	
Manganese	291		10.0	ug/L	250	30.9	104	55-146	1	19	
Molybdenum	246		10.0	ug/L	250	2.5 U	99	72-118	0.7	12	
Nickel	533		10.0	ug/L	500	1.8 U	107	64-126	0.6	12	
Potassium	26400		500	ug/L	25000	1190	101	53-121	2	20	
Selenium	532		10.0	ug/L	500	2.7 U	106	65-129	0.1	10	
Silver	50.0		10.0	ug/L	50.0	1.9 U	100	69-121	0.4	12	
Sodium	25000		500	ug/L	25000	826	97	29-171	0.7	21	
Thallium	264		10.0	ug/L	250	4.8 U	106	67-135	0.5	13	
Vanadium	257		10.0	ug/L	250	2.3	102	71-130	0.8	16	
Zinc	528		10.0	ug/L	500	5.2	105	63-131	0.4	24	

Batch 8G26002 - EPA 7470A

Blank (8G26002-BLK1) Prepared: 07/26/2008 08:09 Analyzed: 07/28/2008 16:52

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.11	U	0.20	ug/L							

LCS (8G26002-BS1) Prepared: 07/26/2008 08:09 Analyzed: 07/28/2008 16:55

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.65		0.20	ug/L	5.00		93	87-123			

Matrix Spike (8G26002-MS1) Prepared: 07/26/2008 08:09 Analyzed: 07/28/2008 17:02

Source: C807796-07

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.55		0.20	ug/L	5.00	0.11 U	91	63-132			

Matrix Spike Dup (8G26002-MSD1) Prepared: 07/26/2008 08:09 Analyzed: 07/28/2008 17:05

Source: C807796-07

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.66		0.20	ug/L	5.00	0.11 U	93	63-132	2	10	

Post Spike (8G26002-PS1) Prepared: 07/26/2008 08:09 Analyzed: 07/28/2008 17:08

Source: C807796-07

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.59		0.20	ug/L	5.00	-0.01	92	0-200			

QUALITY CONTROL

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 8G29002 - EPA 3050B

Blank (8G29002-BLK1) Prepared: 07/29/2008 07:03 Analyzed: 07/31/2008 15:52

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	**4.2**	**J**	5.0	mg/kg wet							QB-01
Manganese	0.049	U	0.500	mg/kg wet							
Antimony	**0.16**	**J**	0.50	mg/kg wet							
Arsenic	**0.07**	**J**	0.50	mg/kg wet							
Barium	0.050	U	0.500	mg/kg wet							
Beryllium	0.012	U	0.050	mg/kg wet							
Boron	**0.51**	**J**	2.50	mg/kg wet							
Cadmium	0.010	U	0.050	mg/kg wet							
Calcium	5.60	U	25.0	mg/kg wet							
Chromium	0.05	U	0.50	mg/kg wet							
Cobalt	0.05	U	0.50	mg/kg wet							
Copper	0.190	U	0.500	mg/kg wet							
Iron	0.5	U	2.5	mg/kg wet							
Lead	0.12	U	0.50	mg/kg wet							
Magnesium	0.6	U	5.0	mg/kg wet							
Molybdenum	0.06	U	0.50	mg/kg wet							
Nickel	0.36	U	0.50	mg/kg wet							
Potassium	**16.4**	**J**	25.0	mg/kg wet							
Selenium	0.10	U	0.50	mg/kg wet							
Silver	0.05	U	0.50	mg/kg wet							
Sodium	**11**	**J**	25	mg/kg wet							
Thallium	**0.22**	**J**	0.50	mg/kg wet							
Vanadium	**0.050**	**J**	0.500	mg/kg wet							
Zinc	0.050	U	0.500	mg/kg wet							

LCS (8G29002-BS1) Prepared: 07/29/2008 07:03 Analyzed: 07/31/2008 16:26

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	229	B	5.0	mg/kg wet	245		93	80-120			
Manganese	11.1		0.500	mg/kg wet	12.3		90	85-115			
Antimony	11.7	B	0.50	mg/kg wet	12.3		96	85-116			
Arsenic	22.3	B	0.50	mg/kg wet	24.5		91	77-125			
Barium	25.0		0.500	mg/kg wet	24.5		102	76-124			
Beryllium	11.6		0.050	mg/kg wet	12.3		95	83-121			
Boron	23.1	B	2.50	mg/kg wet	24.5		94	85-115			
Cadmium	11.9		0.050	mg/kg wet	12.3		97	76-123			
Calcium	229		25.0	mg/kg wet	245		93	89-115			
Chromium	23.0		0.50	mg/kg wet	24.5		94	81-121			
Cobalt	21.8		0.50	mg/kg wet	24.5		89	86-115			
Copper	11.9		0.500	mg/kg wet	12.3		97	81-119			
Iron	233		2.5	mg/kg wet	245		95	79-111			
Lead	21.2		0.50	mg/kg wet	24.5		87	79-127			
Magnesium	225		5.0	mg/kg wet	245		92	86-115			
Molybdenum	9.81		0.50	mg/kg wet	12.3		80	79-121			
Nickel	23.9		0.50	mg/kg wet	24.5		98	80-118			
Potassium	1200	B	25.0	mg/kg wet	1230		98	80-120			
Selenium	22.0		0.50	mg/kg wet	24.5		90	71-118			
Silver	2.29		0.50	mg/kg wet	2.45		93	78-128			

QUALITY CONTROL

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 8G29002 - EPA 3050B

LCS (8G29002-BS1) Continued Prepared: 07/29/2008 07:03 Analyzed: 07/31/2008 16:26

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Sodium	1160	B	25	mg/kg wet	1230		94	86-108			
Thallium	11.3	B	0.50	mg/kg wet	12.3		92	85-115			
Vanadium	11.2	B	0.500	mg/kg wet	12.3		91	89-112			
Zinc	22.9		0.500	mg/kg wet	24.5		94	76-128			

Matrix Spike (8G29002-MS1) Prepared: 07/29/2008 07:03 Analyzed: 07/31/2008 16:40

Source: C807924-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	1040	B	6.5	mg/kg dry	317	543	157	35-172			
Manganese	18.1		0.653	mg/kg dry	15.9	3.94	89	75-125			
Antimony	13.4	B	0.65	mg/kg dry	15.9	0.14 U	84	52-147			
Arsenic	29.2	B	0.65	mg/kg dry	31.7	0.26	91	53-153			
Barium	35.1		0.653	mg/kg dry	31.7	3.37	100	46-120			
Beryllium	15.2		0.065	mg/kg dry	15.9	0.016 U	96	41-133			
Boron	29.9	B	3.27	mg/kg dry	31.7	0.53	93	97-103			QM-07
Cadmium	15.3		0.065	mg/kg dry	15.9	0.013 U	97	49-115			
Calcium	375		32.7	mg/kg dry	317	68.0	97	71-121			
Chromium	32.1		0.65	mg/kg dry	31.7	2.20	94	19-142			
Cobalt	29.5		0.65	mg/kg dry	31.7	1.49	88	30-143			
Copper	15.2		0.653	mg/kg dry	15.9	0.248 U	96	35-137			
Iron	883		3.3	mg/kg dry	317	566	100	48-139			
Lead	27.8		0.65	mg/kg dry	31.7	0.47	86	48-121			
Magnesium	399		6.5	mg/kg dry	317	98.2	95	36-149			
Molybdenum	12.1		0.65	mg/kg dry	15.9	0.08 U	76	59-126			
Nickel	34.1		0.65	mg/kg dry	31.7	3.32	97	43-121			
Potassium	1580	B	32.7	mg/kg dry	1590	57.6	96	70-135			
Selenium	28.0		0.65	mg/kg dry	31.7	0.13 U	88	43-126			
Silver	2.73		0.65	mg/kg dry	3.17	0.07 U	86	36-133			
Sodium	1530	B	33	mg/kg dry	1590	31.1	94	45-159			
Thallium	14.0	B	0.65	mg/kg dry	15.9	0.26 U	88	58-118			
Vanadium	16.4	B	0.653	mg/kg dry	15.9	1.99	91	31-142			
Zinc	33.2		0.653	mg/kg dry	31.7	3.75	93	37-138			

Matrix Spike Dup (8G29002-MSD1) Prepared: 07/29/2008 07:03 Analyzed: 07/31/2008 16:47

Source: C807924-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	1070	B	6.5	mg/kg dry	317	543	165	35-172	2	32	
Manganese	18.4		0.653	mg/kg dry	15.9	3.94	91	75-125	2	20	
Antimony	13.3	B	0.65	mg/kg dry	15.9	0.14 U	84	52-147	0.05	28	
Arsenic	28.7	B	0.65	mg/kg dry	31.7	0.26	90	53-153	2	22	
Barium	35.4		0.653	mg/kg dry	31.7	3.37	101	46-120	0.8	16	
Beryllium	15.1		0.065	mg/kg dry	15.9	0.016 U	95	41-133	1	26	
Boron	29.8	B	3.27	mg/kg dry	31.7	0.53	92	97-103	0.4	23	QM-07
Cadmium	15.2		0.065	mg/kg dry	15.9	0.013 U	96	49-115	0.8	24	
Calcium	393		32.7	mg/kg dry	317	68.0	103	71-121	5	19	
Chromium	31.6		0.65	mg/kg dry	31.7	2.20	93	19-142	1	24	

QUALITY CONTROL

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 8G29002 - EPA 3050B

Matrix Spike Dup (8G29002-MSD1) Continued Prepared: 07/29/2008 07:03 Analyzed: 07/31/2008 16:47

Source: C807924-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Cobalt	29.2		0.65	mg/kg dry	31.7	1.49	87	30-143	1	17	
Copper	14.9		0.653	mg/kg dry	15.9	0.248 U	94	35-137	2	12	
Iron	916		3.3	mg/kg dry	317	566	110	48-139	4	38	
Lead	27.3		0.65	mg/kg dry	31.7	0.47	85	48-121	2	26	
Magnesium	400		6.5	mg/kg dry	317	98.2	95	36-149	0.2	23	
Molybdenum	11.5		0.65	mg/kg dry	15.9	0.08 U	73	59-126	4	21	
Nickel	34.0		0.65	mg/kg dry	31.7	3.32	97	43-121	0.4	14	
Potassium	1570	B	32.7	mg/kg dry	1590	57.6	95	70-135	1	22	
Selenium	27.5		0.65	mg/kg dry	31.7	0.13 U	87	43-126	2	14	
Silver	2.61		0.65	mg/kg dry	3.17	0.07 U	82	36-133	5	20	
Sodium	1480	B	33	mg/kg dry	1590	31.1	92	45-159	3	21	
Thallium	13.8	B	0.65	mg/kg dry	15.9	0.26 U	87	58-118	2	14	
Vanadium	16.3	B	0.653	mg/kg dry	15.9	1.99	90	31-142	0.8	16	
Zinc	32.9		0.653	mg/kg dry	31.7	3.75	92	37-138	0.8	19	

Batch 8G29003 - EPA 7471A

Blank (8G29003-BLK1) Prepared: 07/31/2008 07:23 Analyzed: 07/31/2008 11:14

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.005	U	0.01	mg/kg wet							

LCS (8G29003-BS1) Prepared: 07/31/2008 07:23 Analyzed: 07/31/2008 11:17

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.25		0.01	mg/kg wet	0.242		104	81-117			

Matrix Spike (8G29003-MS1) Prepared: 07/31/2008 07:23 Analyzed: 07/31/2008 11:22

Source: C807924-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.34		0.01	mg/kg dry	0.321	0.007 U	107	75-125			

Matrix Spike Dup (8G29003-MSD1) Prepared: 07/31/2008 07:23 Analyzed: 07/31/2008 11:24

Source: C807924-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.36		0.01	mg/kg dry	0.316	0.007 U	113	75-125	4	9	

Post Spike (8G29003-PS1) Prepared: 07/31/2008 07:23 Analyzed: 07/31/2008 11:27

Source: C807924-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.005		0.0002	mg/L	0.00500	-0.00008	104	0-200			

QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 8G27003 - NO PREP

Blank (8G27003-BLK1) Prepared: 07/27/2008 10:19 Analyzed: 07/27/2008 14:29

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nitrate/Nitrite as N	0.031	J	0.10	mg/L							

LCS (8G27003-BS1) Prepared: 07/27/2008 10:19 Analyzed: 07/27/2008 14:31

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nitrate/Nitrite as N	1.3	B	0.10	mg/L	1.25		101	80-120			

Matrix Spike (8G27003-MS1) Prepared: 07/27/2008 10:19 Analyzed: 07/28/2008 08:29

Source: C807495-09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nitrate/Nitrite as N	1.1	B	0.10	mg/L	1.28	0.012	82	80-120			

Matrix Spike Dup (8G27003-MSD1) Prepared: 07/27/2008 10:19 Analyzed: 07/28/2008 08:30

Source: C807495-09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nitrate/Nitrite as N	1.1	B	0.10	mg/L	1.28	0.012	83	80-120	1	25	

Batch 8G28006 - NO PREP

Blank (8G28006-BLK1) Prepared: 07/28/2008 17:41 Analyzed: 07/30/2008 16:30

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	10	U	10	mg/L							

LCS (8G28006-BS1) Prepared: 07/28/2008 17:41 Analyzed: 07/30/2008 16:30

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	310		10	mg/L	300		102	90-110			

Duplicate (8G28006-DUP1) Prepared: 07/28/2008 17:41 Analyzed: 07/30/2008 16:30

Source: C807265-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	2200		10	mg/L		2100			2	10	

Batch 8G28012 - NO PREP

Blank (8G28012-BLK1) Prepared: 07/28/2008 09:30 Analyzed: 07/31/2008 10:00

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Suspended Solids	1.0	U	1.0	mg/L							

LCS (8G28012-BS1) Prepared: 07/28/2008 09:30 Analyzed: 07/31/2008 10:00

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 8G28012 - NO PREP

LCS (8G28012-BS1) Continued Prepared: 07/28/2008 09:30 Analyzed: 07/31/2008 10:00

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Suspended Solids	88		1.0	mg/L	80.0		110	82-119			

Duplicate (8G28012-DUP1) Prepared: 07/28/2008 09:30 Analyzed: 07/31/2008 10:00

Source: C808138-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Suspended Solids	21		1.0	mg/L		22			2	10	

Batch 8G28022 - % Solids

Duplicate (8G28022-DUP1) Prepared: 07/28/2008 11:50 Analyzed: 07/28/2008 14:20

Source: C807713-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
% Solids	91		0.1	% by Weight		93			1	10	

Batch 8G30007 - NO PREP

Blank (8G30007-BLK1) Prepared: 07/30/2008 08:41 Analyzed: 07/30/2008 11:46

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity	2.7	U	15	mg/L							

LCS (8G30007-BS1) Prepared: 07/30/2008 08:41 Analyzed: 07/30/2008 11:47

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity	100		15	mg/L	100		104	80-120			

Matrix Spike (8G30007-MS1) Prepared: 07/30/2008 08:41 Analyzed: 07/30/2008 11:49

Source: C808135-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity	170		15	mg/L	100	68	98	80-120			

Matrix Spike Dup (8G30007-MSD1) Prepared: 07/30/2008 08:41 Analyzed: 07/30/2008 11:50

Source: C808135-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity	160		15	mg/L	100	68	95	80-120	2	25	

Batch 8G30008 - NO PREP

Blank (8G30008-BLK1) Prepared: 07/30/2008 08:43 Analyzed: 07/30/2008 12:38

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	1.4	J	5.0	mg/L							

QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 8G30008 - NO PREP

LCS (8G30008-BS1) Prepared: 07/30/2008 08:43 Analyzed: 07/30/2008 12:39

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	99	B	5.0	mg/L	100		99	80-120			

Matrix Spike (8G30008-MS1) Prepared: 07/30/2008 08:43 Analyzed: 07/30/2008 12:41

Source: C808135-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	140	B	5.0	mg/L	100	45	94	80-120			

Matrix Spike Dup (8G30008-MSD1) Prepared: 07/30/2008 08:43 Analyzed: 07/30/2008 12:41

Source: C808135-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	140	B	5.0	mg/L	100	45	97	80-120	2	25	

Batch 8G31030 - NO PREP

Blank (8G31030-BLK1) Prepared: 07/31/2008 11:58 Analyzed: 07/31/2008 15:46

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fluoride	**0.02**	J	0.20	mg/L							
Sulfate as SO4	0.05	U	5.0	mg/L							

LCS (8G31030-BS1) Prepared: 07/31/2008 11:58 Analyzed: 07/31/2008 16:16

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fluoride	0.95	B	0.20	mg/L	1.00		95	90-110			
Sulfate as SO4	47		5.0	mg/L	50.0		95	90-110			

Matrix Spike (8G31030-MS1) Prepared: 07/31/2008 11:58 Analyzed: 07/31/2008 23:41

Source: C807082-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fluoride	1.1	B	0.20	mg/L	1.00	0.11	99	90-110			
Sulfate as SO4	49		5.0	mg/L	50.0	1.6	94	90-110			

Matrix Spike Dup (8G31030-MSD1) Prepared: 07/31/2008 11:58 Analyzed: 08/01/2008 00:11

Source: C807082-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fluoride	1.1	B	0.20	mg/L	1.00	0.11	99	90-110	0.08	10	
Sulfate as SO4	48		5.0	mg/L	50.0	1.6	93	90-110	1	10	

Batch 8G31035 - Same

Blank (8G31035-BLK1) Prepared: 08/01/2008 11:50 Analyzed: 08/03/2008 10:35

QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 8G31035 - Same

Blank (8G31035-BLK1) Continued Prepared: 08/01/2008 11:50 Analyzed: 08/03/2008 10:35

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Phosphorus	0.050	U	0.10	mg/L							

LCS (8G31035-BS1) Prepared: 08/01/2008 11:50 Analyzed: 08/03/2008 10:37

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Phosphorus	1.6		0.10	mg/L	1.60		98	80-120			

Matrix Spike (8G31035-MS1) Prepared: 08/01/2008 11:50 Analyzed: 08/03/2008 10:40

Source: C808020-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Phosphorus	2.4		0.10	mg/L	1.60	0.77	100	80-120			

Matrix Spike Dup (8G31035-MSD1) Prepared: 08/01/2008 11:50 Analyzed: 08/03/2008 10:42

Source: C808020-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Phosphorus	2.3		0.10	mg/L	1.60	0.77	97	80-120	2	25	

Batch 8G31037 - Same

Blank (8G31037-BLK1) Prepared: 08/01/2008 11:50 Analyzed: 08/03/2008 11:19

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Phosphorus	6.3	U	8.0	mg/kg wet							

LCS (8G31037-BS1) Prepared: 08/01/2008 11:50 Analyzed: 08/03/2008 11:20

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Phosphorus	120		8.0	mg/kg wet	126		96	80-120			

Matrix Spike (8G31037-MS1) Prepared: 08/01/2008 11:50 Analyzed: 08/03/2008 11:23

Source: C807924-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Phosphorus	180		10	mg/kg dry	165	24	98	80-120			

Matrix Spike Dup (8G31037-MSD1) Prepared: 08/01/2008 11:50 Analyzed: 08/03/2008 11:24

Source: C807924-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Phosphorus	200		10	mg/kg dry	164	24	106	80-120	7	25	

Batch 8H05022 - Same

Blank (8H05022-BLK1) Prepared: 08/05/2008 11:25 Analyzed: 08/05/2008 22:28

QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 8H05022 - Same

Blank (8H05022-BLK1) Continued Prepared: 08/05/2008 11:25 Analyzed: 08/05/2008 22:28

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fluoride	**0.78**	**J**	2.0	mg/kg dry wt. wet							
Chloride	5.0	U	50	mg/kg dry wt. wet							
Nitrate as N	1.0	U	10	mg/kg dry wt. wet							
Nitrite as N	0.14	U	1.0	mg/kg dry wt. wet							
Sulfate as SO4	**15**	**J**	50	mg/kg dry wt. wet							

LCS (8H05022-BS1) Prepared: 08/05/2008 11:25 Analyzed: 08/05/2008 22:58

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fluoride	0.96	B	0.20	mg/L	1.00		96	90-110			
Chloride	49		5.0	mg/L	50.0		97	90-110			
Nitrate as N	9.5		1.0	mg/L	10.0		95	90-110			
Nitrite as N	0.95		0.10	mg/L	1.00		95	90-110			
Sulfate as SO4	48	B	5.0	mg/L	50.0		96	90-110			

Matrix Spike (8H05022-MS1) Prepared: 08/05/2008 11:25 Analyzed: 08/05/2008 23:27

Source: C807924-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fluoride	0.93	B	0.20	mg/L	1.00	0.050	88	90-110			QM-07
Chloride	50		5.0	mg/L	50.0	1.9	95	90-110			
Nitrate as N	120	E	1.0	mg/L	10.0	0.34	NR	90-110			QM-07
Nitrite as N	1.0		0.10	mg/L	1.00	0.014 U	101	90-110			
Sulfate as SO4	59	B	5.0	mg/L	50.0	12	95	90-110			

Matrix Spike Dup (8H05022-MSD1) Prepared: 08/05/2008 11:25 Analyzed: 08/05/2008 23:57

Source: C807924-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fluoride	0.91	B	0.20	mg/L	1.00	0.050	86	90-110	1	10	QM-07
Chloride	49		5.0	mg/L	50.0	1.9	94	90-110	0.9	10	
Nitrate as N	120	E	1.0	mg/L	10.0	0.34	NR	90-110	2	10	QM-07
Nitrite as N	0.95		0.10	mg/L	1.00	0.014 U	95	90-110	6	10	
Sulfate as SO4	58	B	5.0	mg/L	50.0	12	93	90-110	2	10	

Batch 8H06006 - CE-81-1

Blank (8H06006-BLK1) Prepared: 08/05/2008 11:25 Analyzed: 08/06/2008 09:39

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity	**170**		150	mg/kg wet							

LCS (8H06006-BS1) Prepared: 08/05/2008 11:25 Analyzed: 08/06/2008 09:40

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 8H06006 - CE-81-1

LCS (8H06006-BS1) Continued Prepared: 08/05/2008 11:25 Analyzed: 08/06/2008 09:40

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity	110	B	15	mg/L	100		111	80-120			

Matrix Spike (8H06006-MS1) Prepared: 08/05/2008 11:25 Analyzed: 08/06/2008 12:42

Source: C807924-03RE1

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity	100	B	15	mg/L	100	8.4	95	80-120			

Matrix Spike Dup (8H06006-MSD1) Prepared: 08/05/2008 11:25 Analyzed: 08/06/2008 12:43

Source: C807924-03RE1

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity	100	B	15	mg/L	100	8.4	95	80-120	0.05	25	

QUALITY CONTROL

TCLP Metals by 6000/7000 Series Methods - Quality Control

Batch 8G30020 - EPA 7470A

Blank (8G30020-BLK1) Prepared: 07/31/2008 10:00 Analyzed: 07/31/2008 15:42

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.000054	U	0.00020	mg/L							

Blank (8G30020-BLK2) Prepared: 07/31/2008 10:00 Analyzed: 07/31/2008 15:44

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.00054	U	0.00200	mg/L							

LCS (8G30020-BS1) Prepared: 07/31/2008 10:00 Analyzed: 07/31/2008 15:55

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.00527		0.00020	mg/L	0.00500		105	85-115			

Matrix Spike (8G30020-MS1) Prepared: 07/31/2008 10:00 Analyzed: 07/31/2008 15:57

Source: C807924-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.0567		0.00200	mg/L	0.0500	0.00054 U	113	85-115			

Matrix Spike Dup (8G30020-MSD1) Prepared: 07/31/2008 10:00 Analyzed: 07/31/2008 15:59

Source: C807924-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.0586		0.00200	mg/L	0.0500	0.00054 U	117	85-115	3	25	QM-07

QUALITY CONTROL

TCLP Metals by 6000/7000 Series Methods - Quality Control

Batch 8H01014 - EPA 3010A

Blank (8H01014-BLK1) Prepared: 08/01/2008 13:10 Analyzed: 08/04/2008 19:36

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	0.0220	U	0.200	mg/L							
Antimony	0.00310	U	0.0200	mg/L							
Arsenic	0.00240	U	0.0100	mg/L							
Barium	0.00043	U	0.0100	mg/L							
Beryllium	0.0002	U	0.0010	mg/L							
Boron	0.0095	U	0.0500	mg/L							
Cadmium	0.0002	U	0.0010	mg/L							
Calcium	**0.0380**	J	0.500	mg/L							
Chromium	0.00043	U	0.0100	mg/L							
Cobalt	0.0002	U	0.0100	mg/L							
Copper	0.0012	U	0.0100	mg/L							
Iron	0.0048	U	0.0500	mg/L							
Lead	0.0016	U	0.0100	mg/L							
Magnesium	0.0150	U	0.500	mg/L							
Manganese	0.0008	U	0.0100	mg/L							
Molybdenum	0.0007	U	0.0100	mg/L							
Nickel	0.0008	U	0.0500	mg/L							
Potassium	0.0540	U	0.500	mg/L							
Selenium	0.0037	U	0.0100	mg/L							
Silver	0.0004	U	0.0100	mg/L							
Sodium	**1.62**		0.500	mg/L							
Thallium	0.0051	U	0.0100	mg/L							
Vanadium	0.0004	U	0.0100	mg/L							
Zinc	**0.0032**	J	0.0200	mg/L							

Blank (8H01014-BLK2) Prepared: 08/01/2008 13:10 Analyzed: 08/04/2008 19:43

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Cadmium	0.0002	U	0.0010	mg/L							

Blank (8H01014-BLK3) Prepared: 08/01/2008 13:10 Analyzed: 08/04/2008 19:50

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	0.110	U	1.00	mg/L							
Antimony	0.0155	U	0.100	mg/L							
Arsenic	0.0120	U	0.0500	mg/L							
Barium	**0.369**		0.0500	mg/L							
Beryllium	0.0008	U	0.0050	mg/L							
Boron	**0.319**		0.250	mg/L							
Cadmium	0.0009	U	0.0050	mg/L							
Calcium	**4.86**		2.50	mg/L							
Chromium	0.00215	U	0.0500	mg/L							
Cobalt	0.0012	U	0.0500	mg/L							
Copper	0.0060	U	0.0500	mg/L							
Iron	0.0240	U	0.250	mg/L							
Lead	0.0080	U	0.0500	mg/L							
Magnesium	**0.497**	J	2.50	mg/L							
Manganese	0.0038	U	0.0500	mg/L							

QUALITY CONTROL

TCLP Metals by 6000/7000 Series Methods - Quality Control

Batch 8H01014 - EPA 3010A

Blank (8H01014-BLK3) Continued Prepared: 08/01/2008 13:10 Analyzed: 08/04/2008 19:50

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Molybdenum	0.0034	U	0.0500	mg/L							
Nickel	**0.0082**	**J**	0.250	mg/L							
Potassium	**1.31**	**J**	2.50	mg/L							
Selenium	0.0185	U	0.0500	mg/L							
Silver	0.0020	U	0.0500	mg/L							
Sodium	**1470**		2.50	mg/L							
Thallium	0.0255	U	0.0500	mg/L							
Vanadium	0.0022	U	0.0500	mg/L							
Zinc	**0.0967**	**J**	0.100	mg/L							

LCS (8H01014-BS1) Prepared: 08/01/2008 13:10 Analyzed: 08/04/2008 19:57

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	10.3		0.200	mg/L	10.0		103	84-119			
Antimony	0.523		0.0200	mg/L	0.500		105	87-111			
Arsenic	1.05		0.0100	mg/L	1.00		105	89-116			
Barium	1.06	B	0.0100	mg/L	1.00		106	89-113			
Beryllium	0.530		0.0010	mg/L	0.500		106	90-111			
Boron	1.05	B	0.0500	mg/L	1.00		105	89-116			
Cadmium	0.527		0.0010	mg/L	0.500		105	90-112			
Calcium	10.5	B	0.500	mg/L	10.0		105	84-118			
Chromium	1.06		0.0100	mg/L	1.00		106	89-114			
Cobalt	1.07		0.0100	mg/L	1.00		107	90-114			
Copper	0.539		0.0100	mg/L	0.500		108	90-112			
Iron	10.5		0.0500	mg/L	10.0		105	90-110			
Lead	1.06		0.0100	mg/L	1.00		106	90-113			
Magnesium	10.4	B	0.500	mg/L	10.0		104	90-111			
Manganese	0.534		0.0100	mg/L	0.500		107	90-112			
Molybdenum	0.509		0.0100	mg/L	0.500		102	89-110			
Nickel	1.08	B	0.0500	mg/L	1.00		108	88-116			
Potassium	52.2	B	0.500	mg/L	50.0		104	90-110			
Selenium	1.06		0.0100	mg/L	1.00		106	90-118			
Silver	0.0970		0.0100	mg/L	0.100		97	87-112			
Sodium	51.9	B	0.500	mg/L	50.0		104	90-113			
Thallium	0.521		0.0100	mg/L	0.500		104	90-112			
Vanadium	0.534		0.0100	mg/L	0.500		107	88-114			
Zinc	1.08	B	0.0200	mg/L	1.00		108	88-116			

Matrix Spike (8H01014-MS1) Prepared: 08/01/2008 13:10 Analyzed: 08/04/2008 20:03

Source: B805297-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	49.9		1.00	mg/L	50.0	0.192	99	84-119			
Antimony	2.68		0.100	mg/L	2.50	0.0155 U	107	87-111			
Arsenic	5.20		0.0500	mg/L	5.00	0.0221	103	89-116			
Barium	5.25	B	0.0500	mg/L	5.00	0.434	96	89-113			
Beryllium	2.57		0.0050	mg/L	2.50	0.0008 U	103	90-111			
Boron	5.50	B	0.250	mg/L	5.00	0.333	103	89-116			

QUALITY CONTROL

TCLP Metals by 6000/7000 Series Methods - Quality Control

Batch 8H01014 - EPA 3010A

Matrix Spike (8H01014-MS1) Continued Prepared: 08/01/2008 13:10 Analyzed: 08/04/2008 20:03

Source: B805297-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Cadmium	2.45		0.0050	mg/L	2.50	0.0009 U	98	90-112			
Calcium	979	B	2.50	mg/L	50.0	981	NR	84-118			QM-02
Chromium	5.07		0.0500	mg/L	5.00	0.00450	101	89-114			
Cobalt	4.94		0.0500	mg/L	5.00	0.0012 U	99	90-114			
Copper	2.66		0.0500	mg/L	2.50	0.0136	106	90-112			
Iron	49.3		0.250	mg/L	50.0	0.0542	98	90-110			
Lead	5.06		0.0500	mg/L	5.00	0.0080 U	101	90-113			
Magnesium	62.6	B	2.50	mg/L	50.0	15.1	95	90-111			
Manganese	2.76		0.0500	mg/L	2.50	0.274	99	90-112			
Molybdenum	2.62		0.0500	mg/L	2.50	0.0169	104	89-110			
Nickel	5.00	B	0.250	mg/L	5.00	0.0102	100	88-116			
Potassium	264	B	2.50	mg/L	250	9.83	102	90-110			
Selenium	5.30		0.0500	mg/L	5.00	0.0231	106	90-118			
Silver	0.499		0.0500	mg/L	0.500	0.00527	99	87-112			
Sodium	1520	B	2.50	mg/L	250	1360	66	90-113			QM-02
Thallium	2.47		0.0500	mg/L	2.50	0.0255 U	99	90-112			
Vanadium	2.60		0.0500	mg/L	2.50	0.0022 U	104	88-114			
Zinc	5.61	B	0.100	mg/L	5.00	0.613	100	88-116			

Matrix Spike Dup (8H01014-MSD1) Prepared: 08/01/2008 13:10 Analyzed: 08/04/2008 20:10

Source: B805297-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	50.3		1.00	mg/L	50.0	0.192	100	84-119	0.9	25	
Antimony	2.64		0.100	mg/L	2.50	0.0155 U	106	87-111	2	25	
Arsenic	5.13		0.0500	mg/L	5.00	0.0221	102	89-116	1	25	
Barium	5.20	B	0.0500	mg/L	5.00	0.434	95	89-113	0.9	25	
Beryllium	2.51		0.0050	mg/L	2.50	0.0008 U	100	90-111	2	25	
Boron	5.42	B	0.250	mg/L	5.00	0.333	102	89-116	1	25	
Cadmium	2.43		0.0050	mg/L	2.50	0.0009 U	97	90-112	0.8	25	
Calcium	953	B	2.50	mg/L	50.0	981	NR	84-118	3	25	QM-02
Chromium	5.03		0.0500	mg/L	5.00	0.00450	100	89-114	1	25	
Cobalt	4.90		0.0500	mg/L	5.00	0.0012 U	98	90-114	0.9	25	
Copper	2.64		0.0500	mg/L	2.50	0.0136	105	90-112	1	25	
Iron	48.8		0.250	mg/L	50.0	0.0542	98	90-110	0.9	25	
Lead	4.98		0.0500	mg/L	5.00	0.0080 U	100	90-113	1	25	
Magnesium	63.1	B	2.50	mg/L	50.0	15.1	96	90-111	0.8	25	
Manganese	2.73		0.0500	mg/L	2.50	0.274	98	90-112	0.9	25	
Molybdenum	2.59		0.0500	mg/L	2.50	0.0169	103	89-110	1	25	
Nickel	4.96	B	0.250	mg/L	5.00	0.0102	99	88-116	0.9	25	
Potassium	261	B	2.50	mg/L	250	9.83	101	90-110	1	25	
Selenium	5.21		0.0500	mg/L	5.00	0.0231	104	90-118	2	25	
Silver	0.496		0.0500	mg/L	0.500	0.00527	98	87-112	0.7	25	
Sodium	1490	B	2.50	mg/L	250	1360	51	90-113	3	25	QM-02
Thallium	2.45		0.0500	mg/L	2.50	0.0255 U	98	90-112	0.8	25	
Vanadium	2.57		0.0500	mg/L	2.50	0.0022 U	103	88-114	1	25	
Zinc	5.55	B	0.100	mg/L	5.00	0.613	99	88-116	1	25	

QUALITY CONTROL

TCLP Metals by 6000/7000 Series Methods - Quality Control

Batch 8H01014 - EPA 3010A

SPLP Metals by 6000/7000 Series Methods - Quality Control

Batch 8G30019 - EPA 7470A

Blank (8G30019-BLK1) Prepared: 07/30/2008 15:39 Analyzed: 07/31/2008 15:03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.000054	U	0.00020	mg/L							

Blank (8G30019-BLK2) Prepared: 07/30/2008 15:39 Analyzed: 07/31/2008 15:04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.000054	U	0.00020	mg/L							

LCS (8G30019-BS1) Prepared: 07/30/2008 15:39 Analyzed: 07/31/2008 15:06

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.00530		0.00020	mg/L	0.00500		106	85-115			

Matrix Spike (8G30019-MS1) Prepared: 07/30/2008 15:39 Analyzed: 07/31/2008 15:13

Source: B805182-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.00615		0.00020	mg/L	0.00500	0.000054 U	123	85-115			QM-07

Matrix Spike Dup (8G30019-MSD1) Prepared: 07/30/2008 15:39 Analyzed: 07/31/2008 15:15

Source: B805182-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.00593		0.00020	mg/L	0.00500	0.000054 U	119	85-115	4	25	QM-07

Batch 8H01014 - EPA 3010A

Blank (8H01014-BLK1) Prepared: 08/01/2008 13:10 Analyzed: 08/04/2008 19:36

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	0.0220	U	0.200	mg/L							
Antimony	0.00310	U	0.0200	mg/L							
Arsenic	0.00240	U	0.0100	mg/L							
Barium	0.00043	U	0.0100	mg/L							
Beryllium	0.0002	U	0.0010	mg/L							
Boron	0.0095	U	0.0500	mg/L							
Cadmium	0.0002	U	0.0010	mg/L							
Calcium	**0.0380**	J	0.500	mg/L							
Chromium	0.00043	U	0.0100	mg/L							
Cobalt	0.0002	U	0.0100	mg/L							
Copper	0.0012	U	0.0100	mg/L							
Iron	0.0048	U	0.0500	mg/L							
Lead	0.0016	U	0.0100	mg/L							
Magnesium	0.0150	U	0.500	mg/L							

QUALITY CONTROL

SPLP Metals by 6000/7000 Series Methods - Quality Control

Batch 8H01014 - EPA 3010A

Blank (8H01014-BLK1) Continued Prepared: 08/01/2008 13:10 Analyzed: 08/04/2008 19:36

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Manganese	0.0008	U	0.0100	mg/L							
Molybdenum	0.0007	U	0.0100	mg/L							
Nickel	**0.0005**	**J**	0.0500	mg/L							
Potassium	0.0540	U	0.500	mg/L							
Selenium	0.0037	U	0.0100	mg/L							
Silver	0.0004	U	0.0100	mg/L							
Thallium	0.0051	U	0.0100	mg/L							
Sodium	**1.62**		0.500	mg/L							
Vanadium	0.0004	U	0.0100	mg/L							
Zinc	**0.0032**	**J**	0.0200	mg/L							

Blank (8H01014-BLK2) Prepared: 08/01/2008 13:10 Analyzed: 08/05/2008 13:56

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	**0.0295**	**J**	0.200	mg/L							
Antimony	0.00310	U	0.0200	mg/L							
Arsenic	0.00240	U	0.0100	mg/L							
Barium	**0.0233**		0.0100	mg/L							
Beryllium	0.0002	U	0.0010	mg/L							
Boron	**0.0853**		0.0500	mg/L							
Cadmium	0.0002	U	0.0010	mg/L							
Calcium	**1.14**		0.500	mg/L							
Chromium	**0.00134**	**J**	0.0100	mg/L							
Cobalt	0.0002	U	0.0100	mg/L							
Copper	0.0012	U	0.0100	mg/L							
Iron	0.0048	U	0.0500	mg/L							
Lead	0.0016	U	0.0100	mg/L							
Magnesium	**0.119**	**J**	0.500	mg/L							
Manganese	0.0008	U	0.0100	mg/L							
Molybdenum	0.0007	U	0.0100	mg/L							
Nickel	**0.0010**	**J**	0.0500	mg/L							
Potassium	**0.105**	**J**	0.500	mg/L							
Selenium	0.0037	U	0.0100	mg/L							
Silver	0.0004	U	0.0100	mg/L							
Thallium	0.0051	U	0.0100	mg/L							
Sodium	**14.9**		0.500	mg/L							
Vanadium	0.0004	U	0.0100	mg/L							
Zinc	**0.0120**	**J**	0.0200	mg/L							

LCS (8H01014-BS1) Prepared: 08/01/2008 13:10 Analyzed: 08/04/2008 19:57

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	10.3	B	0.200	mg/L	10.0		103	84-119			
Antimony	0.523		0.0200	mg/L	0.500		105	87-111			
Arsenic	1.05		0.0100	mg/L	1.00		105	89-116			
Barium	1.06	B	0.0100	mg/L	1.00		106	89-113			
Beryllium	0.530		0.0010	mg/L	0.500		106	90-111			
Boron	1.05	B	0.0500	mg/L	1.00		105	89-116			

QUALITY CONTROL

SPLP Metals by 6000/7000 Series Methods - Quality Control

Batch 8H01014 - EPA 3010A

LCS (8H01014-BS1) Continued Prepared: 08/01/2008 13:10 Analyzed: 08/04/2008 19:57

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Cadmium	0.527		0.0010	mg/L	0.500		105	90-112			
Calcium	10.5	B	0.500	mg/L	10.0		105	84-118			
Chromium	1.06	B	0.0100	mg/L	1.00		106	89-114			
Cobalt	1.07		0.0100	mg/L	1.00		107	90-114			
Copper	0.539		0.0100	mg/L	0.500		108	90-112			
Iron	10.5		0.0500	mg/L	10.0		105	90-110			
Lead	1.06		0.0100	mg/L	1.00		106	90-113			
Magnesium	10.4	B	0.500	mg/L	10.0		104	90-111			
Manganese	0.534		0.0100	mg/L	0.500		107	90-112			
Molybdenum	0.509		0.0100	mg/L	0.500		102	89-110			
Nickel	1.08	B	0.0500	mg/L	1.00		108	88-116			
Potassium	52.2	B	0.500	mg/L	50.0		104	90-110			
Selenium	1.06		0.0100	mg/L	1.00		106	90-118			
Silver	0.0970		0.0100	mg/L	0.100		97	87-112			
Thallium	0.521		0.0100	mg/L	0.500		104	90-112			
Sodium	51.9	B	0.500	mg/L	50.0		104	90-113			
Vanadium	0.534		0.0100	mg/L	0.500		107	88-114			
Zinc	1.08	B	0.0200	mg/L	1.00		108	88-116			

Matrix Spike (8H01014-MS1) Prepared: 08/01/2008 13:10 Analyzed: 08/04/2008 20:03

Source: B805297-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	49.9	B	1.00	mg/L	50.0	0.192	99	84-119			
Antimony	2.68		0.100	mg/L	2.50	0.0155 U	107	87-111			
Arsenic	5.20		0.0500	mg/L	5.00	0.0221	103	89-116			
Barium	5.25	B	0.0500	mg/L	5.00	0.434	96	89-113			
Beryllium	2.57		0.0050	mg/L	2.50	0.0008 U	103	90-111			
Boron	5.50	B	0.250	mg/L	5.00	0.333	103	89-116			
Cadmium	2.45		0.0050	mg/L	2.50	0.0009 U	98	90-112			
Calcium	979	B	2.50	mg/L	50.0	981	NR	84-118			QM-02
Chromium	5.07	B	0.0500	mg/L	5.00	0.00450	101	89-114			
Cobalt	4.94		0.0500	mg/L	5.00	0.0012 U	99	90-114			
Copper	2.66		0.0500	mg/L	2.50	0.0136	106	90-112			
Iron	49.3		0.250	mg/L	50.0	0.0542	98	90-110			
Lead	5.06		0.0500	mg/L	5.00	0.0080 U	101	90-113			
Magnesium	62.6	B	2.50	mg/L	50.0	15.1	95	90-111			
Manganese	2.76		0.0500	mg/L	2.50	0.274	99	90-112			
Molybdenum	2.62		0.0500	mg/L	2.50	0.0169	104	89-110			
Nickel	5.00	B	0.250	mg/L	5.00	0.0102	100	88-116			
Potassium	264	B	2.50	mg/L	250	9.83	102	90-110			
Selenium	5.30		0.0500	mg/L	5.00	0.0231	106	90-118			
Silver	0.499		0.0500	mg/L	0.500	0.00527	99	87-112			
Thallium	2.47		0.0500	mg/L	2.50	0.0255 U	99	90-112			
Sodium	1520	B	2.50	mg/L	250	1360	66	90-113			QM-02
Vanadium	2.60		0.0500	mg/L	2.50	0.0022 U	104	88-114			
Zinc	5.61	B	0.100	mg/L	5.00	0.613	100	88-116			

QUALITY CONTROL

SPLP Metals by 6000/7000 Series Methods - Quality Control

Batch 8H01014 - EPA 3010A

Matrix Spike Dup (8H01014-MSD1) Prepared: 08/01/2008 13:10 Analyzed: 08/04/2008 20:10

Source: B805297-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	50.3	B	1.00	mg/L	50.0	0.192	100	84-119	0.9	25	
Antimony	2.64		0.100	mg/L	2.50	0.0155 U	106	87-111	2	25	
Arsenic	5.13		0.0500	mg/L	5.00	0.0221	102	89-116	1	25	
Barium	5.20	B	0.0500	mg/L	5.00	0.434	95	89-113	0.9	25	
Beryllium	2.51		0.0050	mg/L	2.50	0.0008 U	100	90-111	2	25	
Boron	5.42	B	0.250	mg/L	5.00	0.333	102	89-116	1	25	
Cadmium	2.43		0.0050	mg/L	2.50	0.0009 U	97	90-112	0.8	25	
Calcium	953	B	2.50	mg/L	50.0	981	NR	84-118	3	25	QM-02
Chromium	5.03	B	0.0500	mg/L	5.00	0.00450	100	89-114	1	25	
Cobalt	4.90		0.0500	mg/L	5.00	0.0012 U	98	90-114	0.9	25	
Copper	2.64		0.0500	mg/L	2.50	0.0136	105	90-112	1	25	
Iron	48.8		0.250	mg/L	50.0	0.0542	98	90-110	0.9	25	
Lead	4.98		0.0500	mg/L	5.00	0.0080 U	100	90-113	1	25	
Magnesium	63.1	B	2.50	mg/L	50.0	15.1	96	90-111	0.8	25	
Manganese	2.73		0.0500	mg/L	2.50	0.274	98	90-112	0.9	25	
Molybdenum	2.59		0.0500	mg/L	2.50	0.0169	103	89-110	1	25	
Nickel	4.96	B	0.250	mg/L	5.00	0.0102	99	88-116	0.9	25	
Potassium	261	B	2.50	mg/L	250	9.83	101	90-110	1	25	
Selenium	5.21		0.0500	mg/L	5.00	0.0231	104	90-118	2	25	
Silver	0.496		0.0500	mg/L	0.500	0.00527	98	87-112	0.7	25	
Thallium	2.45		0.0500	mg/L	2.50	0.0255 U	98	90-112	0.8	25	
Sodium	1490	B	2.50	mg/L	250	1360	51	90-113	3	25	QM-02
Vanadium	2.57		0.0500	mg/L	2.50	0.0022 U	103	88-114	1	25	
Zinc	5.55	B	0.100	mg/L	5.00	0.613	99	88-116	1	25	

FLAGS/NOTES AND DEFINITIONS

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
MRL	Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.
J-01	Result is estimated due to positive results in the assocatiated method blank.
J-01a	Result is estimated due to positive results in the associated method blank.
Q	Analysis performed outside of method - specified holding time.
QB-01	The method blank had a positive result for the analyte; however, the concentration in the method blank is less than 10% of the sample result, which minimizes the impact of the deviation.
QM-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QV-01	The associated continuing calibration verification standard exhibited high bias; since the result is ND, the impact on data quality is minimal.

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

10775 Central Port Dr. Orlando, FL 32824 (407) 826-5314 Fax (407) 850-6945
4810 Executive Park Court, Suite 211 Jacksonville, FL 32210-8369 (904) 296-3007 Fax (904) 296-6210
1001-B Woodlands Industrial Ct. Cary, NC 27511 (919) 467-3960 Fax (919) 467-3515

Page 1 of 1

Client Name: Kimley-Horn and Associates - VA/KI009	Project Number: [none]
Address: 505 Independence Pkway, Suite 200	Project Name/Desc: Fly Ash
City/ST/Zip: Chesapeake, VA 23320	PO # / Billing No:
Tel: (757) 548-7354 Fax: (757) 548-7654	Reporting Contact: Mike Iwashchenko
Sampler(s) Name, Affiliation (Print): M. IWASHCHENKO / KHA	Billing Contact: Mike Iwashchenko
Sampler(s) Signature: M. Iwashchenko	Facility # (if required):

Requested Analyses

Preservation (See Codes) (Combine if necessary)

Requested Turnaround Times

Note: Rush requests subject to acceptance by the facility

__ Standard

__ Expedited

Due __/__/__

Lab Workorder: C807924

Item #	Sample ID (Field Identifier)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers			1312 SPLP EXT Metals, SO4			Alkalinity 310.2			Co HOC/RCRA ALL METALS		NOX 353.2,P	Sulfate 300,TSS 160.2	Sample Comments
	FS-6	7/23/08	12:3	G	GW	7			X			X					X	X	
	Siv-10	7/23/08	2:20	G	GW	7			X			X					X	X	
					GW	7			X			X					X	X	
					GW	7			X			X					X	X	
					GW	7			X			X					X	X	
	MW-4D one	7/21/08	9:27	G	SO	3	X	X		X	X		X	X					9'-11' BGS
	MW-5D	↓	1:00	G	SO	3	X	X		X	X		X	X					8-9' BGS
	MW-5D	↓	1:07	G	SO	3	X	X		X	X		X	X					29-31' BGS
					SO	3	X	X		X	X		X	X					
					SO	3	X	X		X	X		X	X					
					SO	3	X	X		X	X		X	X					
					SO	3	X	X		X	X		X	X					
						23	<-- Total # of Containers												

Sample Kit Prepared By: JWL	Date/Time: 7/17	Relinquished By: [signature]	Date/Time: 7/23/08 3:30	Received By: [signature]	Date/Time: 7/24/08 10:40
Comments: offsite, upgradient wells SET MW-4 @ 25' (5' x 20's)		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time

Cooler # & Temperature Upon Receipt: C-2 86 2.2°C C-2 2.4°C

Condition Upon Receipt: __ Acceptable __ Unacceptable

Matrix: GW-Groundwater SO-Soil SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments)

Preservation: 1-ice H-HCl N-HNO3 S-H2SO4 NO-NaOH O-Other (detail in comments)

Note: All services sub-titled to ENCO Labs are performed in accordance with the terms and conditions stated on the reverse of this form, unless alternative agreements exist.

www.encolabs.com

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary NC, 27511
Phone: 919.467.3090 FAX: 919.467.3515
www.encolabs.com

Wednesday, September 10, 2008

Kimley-Horn and Associates - VA[KI009]

Attn: Mike Iwashchenko

505 Independence Pkway, Suite 200

Chesapeake, VA 23320

RE: Laboratory Results for
Project Number: 116436000.2, Project Name/Desc: Fly Ash
ENCO Workorder: C809306

Dear Mike Iwashchenko,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Tuesday, August 26, 2008.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Chuck Smith

Chuck Smith
Project Manager

Enclosure(s)

The total number of pages in this report, including this page is 14.

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: MW-3 Lab ID: C809306-01 Sampled: 08/25/08 13:52 Received: 08/26/08 10:30

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 160.1	09/01/08		08/27/08	18:00	8/28/2008 16:55
EPA 160.2	09/01/08		08/28/08	12:40	9/4/2008 13:18
EPA 300.0	09/22/08		08/26/08	14:36	8/27/2008 02:33
EPA 310.2	09/08/08		08/27/08	11:24	8/27/2008 14:48
EPA 353.2	08/27/08	13:52	08/27/08	07:33	8/27/2008 10:17
EPA 353.2	09/22/08		08/27/08	07:00	8/27/2008 12:40
EPA 353.2	09/22/08		08/31/08	13:06	8/31/2008 13:06
EPA 365.4	09/22/08		09/03/08	13:25	9/4/2008 15:54
EPA 6010B	02/21/09		09/04/08	06:33	9/8/2008 11:51
EPA 6010B	02/21/09		09/04/08	06:33	9/9/2008 11:58
EPA 7470A	09/22/08		09/03/08	11:35	9/5/2008 11:31
SM4500-Cl/E	09/22/08		08/27/08	11:25	8/27/2008 14:25

Client ID: MW-3 Lab ID: C809306-01RE1 Sampled: 08/25/08 13:52 Received: 08/26/08 10:30

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 300.0	09/22/08	08/26/08 14:36	8/27/2008 03:53

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SAMPLE DETECTION SUMMARY

Client ID: MW-3 Lab ID: C809306-01

Analyte	Results	Flag	MRL	Units	Method	Notes
Aluminum	26000		100	ug/L	EPA 6010B	
Arsenic	17.4		10.0	ug/L	EPA 6010B	
Barium	97.6		10.0	ug/L	EPA 6010B	
Beryllium	0.50	J	1.00	ug/L	EPA 6010B	
Boron	44.2	J	50.0	ug/L	EPA 6010B	
Calcium	66900		100	ug/L	EPA 6010B	
Chloride	46		5.0	mg/L	SM4500-Cl/E	
Chromium	46.7		10.0	ug/L	EPA 6010B	
Cobalt	35.6		10.0	ug/L	EPA 6010B	
Copper	13.0	B	10.0	ug/L	EPA 6010B	J-01
Fluoride	0.45		0.20	mg/L	EPA 300.0	
Iron	43800		50	ug/L	EPA 6010B	
Lead	19.4		10.0	ug/L	EPA 6010B	
Magnesium	28900		100	ug/L	EPA 6010B	
Manganese	419		10.0	ug/L	EPA 6010B	
Nickel	61.0		10.0	ug/L	EPA 6010B	
Nitrate as N	0.14		0.10	mg/L	EPA 353.2	
Nitrate/Nitrite as N	0.14	B	0.10	mg/L	EPA 353.2	J-01
Phosphorus	0.40		0.10	mg/L	EPA 365.4	
Potassium	4270		500	ug/L	EPA 6010B	
Sodium	25800		500	ug/L	EPA 6010B	
Total Alkalinity	76	B	15	mg/L	EPA 310.2	QB-01
Total Dissolved Solids	420		10	mg/L	EPA 160.1	
Total Suspended Solids	1400		1.0	mg/L	EPA 160.2	
Vanadium	61.2		10.0	ug/L	EPA 6010B	
Zinc	210		10.0	ug/L	EPA 6010B	

Client ID: MW-3 Lab ID: C809306-01RE1

Analyte	Results	Flag	MRL	Units	Method	Notes
Sulfate as SO4	130	D	25	mg/L	EPA 300.0	

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ANALYTICAL RESULTS

Description: MW-3
Matrix: Ground Water
Project: Fly Ash

Lab Sample ID: C809306-01
Sampled: 08/25/08 13:52
Sampled By: Mike Iwashchenko

Received: 08/26/08 10:30
Work Order: C809306

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NELAC E87610]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
Aluminum [7429-90-5] ^	**26000**		ug/L	1	17	100	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Antimony [7440-36-0] ^	1.0	U	ug/L	1	1.0	10.0	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Arsenic [7440-38-2] ^	**17.4**		ug/L	1	2.8	10.0	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Barium [7440-39-3] ^	**97.6**		ug/L	1	1.00	10.0	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Beryllium [7440-41-7] ^	**0.50**	J	ug/L	1	0.10	1.00	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Boron [7440-42-8] ^	**44.2**	J	ug/L	1	5.0	50.0	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Cadmium [7440-43-9] ^	0.36	U	ug/L	1	0.36	1.00	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Calcium [7440-70-2] ^	**66900**		ug/L	1	20.0	100	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Chromium [7440-47-3] ^	**46.7**		ug/L	1	1.0	10.0	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Cobalt [7440-48-4] ^	**35.6**		ug/L	1	1.1	10.0	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Copper [7440-50-8] ^	**13.0**	B	ug/L	1	1.60	10.0	8I04001	EPA 6010B	09/08/08 11:51	VLO	J-01
Iron [7439-89-6] ^	**43800**		ug/L	1	22	50	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Lead [7439-92-1] ^	**19.4**		ug/L	1	1.9	10.0	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Magnesium [7439-95-4] ^	**28900**		ug/L	1	23	100	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Manganese [7439-96-5] ^	**419**		ug/L	1	1.1	10.0	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Mercury [7439-97-6] ^	0.11	U	ug/L	1	0.11	0.20	8I03019	EPA 7470A	09/05/08 11:31	MPL	
Molybdenum [7439-98-7] ^	2.5	U	ug/L	1	2.5	10.0	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Nickel [7440-02-0] ^	**61.0**		ug/L	1	1.8	10.0	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Potassium [7440-09-7] ^	**4270**		ug/L	1	150	500	8I04001	EPA 6010B	09/09/08 11:58	VLO	
Selenium [7782-49-2] ^	2.7	U	ug/L	1	2.7	10.0	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Silver [7440-22-4] ^	1.9	U	ug/L	1	1.9	10.0	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Sodium [7440-23-5] ^	**25800**		ug/L	1	400	500	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Thallium [7440-28-0] ^	4.8	U	ug/L	1	4.8	10.0	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Vanadium [7440-62-2] ^	**61.2**		ug/L	1	1.4	10.0	8I04001	EPA 6010B	09/08/08 11:51	VLO	
Zinc [7440-66-6] ^	**210**		ug/L	1	3.8	10.0	8I04001	EPA 6010B	09/08/08 11:51	VLO	

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Description: MW-3
Matrix: Ground Water
Project: Fly Ash

Lab Sample ID: C809306-01
Sampled: 08/25/08 13:52
Sampled By: Mike Iwashchenko

Received: 08/26/08 10:30
Work Order: C809306

Classical Chemistry Parameters

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
Chloride [16887-00-6]	**46**		mg/L	1	0.50	5.0	8H27012	SM4500-Cl/E	08/27/08 14:25	PEV	
Fluoride [16984-48-8]	**0.45**		mg/L	1	0.01	0.20	8H26024	EPA 300.0	08/27/08 02:33	PEV	
Nitrate as N [14797-55-8]	**0.14**		mg/L	1	0.010	0.10	8H31005	EPA 353.2	08/31/08 13:06	PEV	
Nitrate/Nitrite as N [NA]	**0.14**	B	mg/L	1	0.017	0.10	8H26023	EPA 353.2	08/27/08 12:40	PEV	J-01
Nitrite as N [14797-65-0]	0.010	U	mg/L	1	0.010	0.10	8H27005	EPA 353.2	08/27/08 10:17	PEV	
Phosphorus [7723-14-0]	**0.40**		mg/L	1	0.050	0.10	8I02026	EPA 365.4	09/04/08 15:54	PEV	
Sulfate as SO4 [14808-79-8]	**130**	D	mg/L	5	0.26	25	8H26024	EPA 300.0	08/27/08 03:53	PEV	
Total Alkalinity [NA]	**76**	B	mg/L	1	2.7	15	8H27011	EPA 310.2	08/27/08 14:48	PEV	QB-01
Total Dissolved Solids [NA]	**420**		mg/L	1	10	10	8H26027	EPA 160.1	08/28/08 16:55	JOC	
Total Suspended Solids [NA]	**1400**		mg/L	1	1.0	1.0	8H28015	EPA 160.2	09/04/08 13:18	FLT	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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QUALITY CONTROL

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 8I03019 - EPA 7470A

Blank (8I03019-BLK1) Prepared: 09/03/2008 11:35 Analyzed: 09/05/2008 10:46

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.11	U	0.20	ug/L							

LCS (8I03019-BS1) Prepared: 09/03/2008 11:35 Analyzed: 09/05/2008 10:49

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	5.16		0.20	ug/L	5.00		103	87-123			

Matrix Spike (8I03019-MS1) Prepared: 09/03/2008 11:35 Analyzed: 09/05/2008 10:55

Source: C808446-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	3.86		0.20	ug/L	5.00	0.11 U	77	63-132			

Matrix Spike Dup (8I03019-MSD1) Prepared: 09/03/2008 11:35 Analyzed: 09/05/2008 10:58

Source: C808446-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	3.90		0.20	ug/L	5.00	0.11 U	78	63-132	1	10	

Post Spike (8I03019-PS1) Prepared: 09/03/2008 11:35 Analyzed: 09/05/2008 11:01

Source: C808446-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	3.68		0.20	ug/L	5.00	-0.05	75	0-200			

Batch 8I04001 - EPA 3005A

Blank (8I04001-BLK1) Prepared: 09/04/2008 06:33 Analyzed: 09/08/2008 10:36

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	17	U	100	ug/L							
Antimony	1.0	U	10.0	ug/L							
Arsenic	2.8	U	10.0	ug/L							
Barium	1.00	U	10.0	ug/L							
Beryllium	0.10	U	1.00	ug/L							
Boron	5.0	U	50.0	ug/L							
Cadmium	0.36	U	1.00	ug/L							
Calcium	20.0	U	100	ug/L							
Chromium	1.0	U	10.0	ug/L							
Cobalt	1.1	U	10.0	ug/L							
Copper	**4.30**	**J**	10.0	ug/L							J-01
Iron	22	U	50	ug/L							
Lead	1.9	U	10.0	ug/L							
Magnesium	23	U	100	ug/L							
Manganese	1.1	U	10.0	ug/L							
Molybdenum	2.5	U	10.0	ug/L							
Nickel	1.8	U	10.0	ug/L							

QUALITY CONTROL

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 8I04001 - EPA 3005A

Blank (8I04001-BLK1) Continued Prepared: 09/04/2008 06:33 Analyzed: 09/09/2008 11:18

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Potassium	150	U	500	ug/L							
Selenium	2.7	U	10.0	ug/L							
Silver	1.9	U	10.0	ug/L							
Sodium	400	U	500	ug/L							
Thallium	4.8	U	10.0	ug/L							
Vanadium	1.4	U	10.0	ug/L							
Zinc	3.8	U	10.0	ug/L							

LCS (8I04001-BS1) Prepared: 09/04/2008 06:33 Analyzed: 09/09/2008 11:26

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	5010		100	ug/L	5000		100	77-130			
Antimony	255		10.0	ug/L	250		102	82-119			
Arsenic	517		10.0	ug/L	500		103	82-117			
Barium	517		10.0	ug/L	500		103	72-125			
Beryllium	262		1.00	ug/L	250		105	75-121			
Boron	532		50.0	ug/L	500		106	75-122			
Cadmium	269		1.00	ug/L	250		108	72-120			
Calcium	5100		100	ug/L	5000		102	81-111			
Chromium	503		10.0	ug/L	500		101	78-119			
Cobalt	498		10.0	ug/L	500		100	76-117			
Copper	253	B	10.0	ug/L	250		101	80-117			
Iron	5080		50	ug/L	5000		102	84-133			
Lead	509		10.0	ug/L	500		102	72-121			
Magnesium	5370		100	ug/L	5000		107	81-117			
Manganese	250		10.0	ug/L	250		100	76-123			
Molybdenum	230		10.0	ug/L	250		92	81-110			
Nickel	526		10.0	ug/L	500		105	78-116			
Potassium	23300		500	ug/L	25000		93	84-112			
Selenium	522		10.0	ug/L	500		104	82-127			
Silver	48.9		10.0	ug/L	50.0		98	80-128			
Sodium	23200		500	ug/L	25000		93	81-120			
Thallium	255		10.0	ug/L	250		102	79-118			
Vanadium	243		10.0	ug/L	250		97	78-117			
Zinc	516		10.0	ug/L	500		103	80-120			

Matrix Spike (8I04001-MS1) Prepared: 09/04/2008 06:33 Analyzed: 09/09/2008 11:42

Source: C808131-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	5090		100	ug/L	5000	143	99	78-125			
Antimony	250		10.0	ug/L	250	1.0 U	100	38-138			
Arsenic	516		10.0	ug/L	500	3.1	103	64-126			
Barium	1060		10.0	ug/L	500	543	102	74-119			
Beryllium	256		1.00	ug/L	250	0.10 U	102	70-131			
Boron	827		50.0	ug/L	500	295	106	77-114			
Cadmium	249		1.00	ug/L	250	0.36 U	100	68-121			
Calcium	264000		100	ug/L	5000	260000	82	63-131			

QUALITY CONTROL

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 8I04001 - EPA 3005A

Matrix Spike (8I04001-MS1) Continued Prepared: 09/04/2008 06:33 Analyzed: 09/09/2008 11:42

Source: C808131-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chromium	463		10.0	ug/L	500	1.0 U	93	73-120			
Cobalt	495		10.0	ug/L	500	31.9	93	76-120			
Copper	250	B	10.0	ug/L	250	2.60	99	75-123			
Iron	6380		50	ug/L	5000	1410	99	48-144			
Lead	475		10.0	ug/L	500	1.9 U	95	68-126			
Magnesium	158000		100	ug/L	5000	152000	120	59-129			
Manganese	6300		10.0	ug/L	250	6070	92	55-146			
Molybdenum	219		10.0	ug/L	250	2.5 U	87	72-118			
Nickel	501		10.0	ug/L	500	10.2	98	64-126			
Potassium	37900		500	ug/L	25000	8730	117	53-121			
Selenium	512		10.0	ug/L	500	2.7 U	102	65-129			
Silver	48.2		10.0	ug/L	50.0	1.9 U	96	69-121			
Sodium	62300		500	ug/L	25000	34800	110	29-171			
Thallium	242		10.0	ug/L	250	4.8 U	97	67-135			
Vanadium	194		10.0	ug/L	250	1.4 U	78	71-130			
Zinc	467		10.0	ug/L	500	3.8 U	93	63-131			

Matrix Spike Dup (8I04001-MSD1) Prepared: 09/04/2008 06:33 Analyzed: 09/09/2008 11:49

Source: C808131-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	5060		100	ug/L	5000	143	98	78-125	0.6	22	
Antimony	254		10.0	ug/L	250	1.0 U	102	38-138	2	30	
Arsenic	507		10.0	ug/L	500	3.1	101	64-126	2	12	
Barium	1040		10.0	ug/L	500	543	100	74-119	1	11	
Beryllium	254		1.00	ug/L	250	0.10 U	102	70-131	0.6	21	
Boron	818		50.0	ug/L	500	295	105	77-114	1	11	
Cadmium	248		1.00	ug/L	250	0.36 U	99	68-121	0.4	12	
Calcium	259000		100	ug/L	5000	260000	NR	63-131	2	22	QM-07
Chromium	460		10.0	ug/L	500	1.0 U	92	73-120	0.6	10	
Cobalt	496		10.0	ug/L	500	31.9	93	76-120	0.2	17	
Copper	248	B	10.0	ug/L	250	2.60	98	75-123	0.7	16	
Iron	6340		50	ug/L	5000	1410	98	48-144	0.7	23	
Lead	479		10.0	ug/L	500	1.9 U	96	68-126	0.9	19	
Magnesium	155000		100	ug/L	5000	152000	70	59-129	2	22	
Manganese	6200		10.0	ug/L	250	6070	50	55-146	2	19	QM-07
Molybdenum	222		10.0	ug/L	250	2.5 U	89	72-118	1	12	
Nickel	499		10.0	ug/L	500	10.2	98	64-126	0.4	12	
Potassium	37700		500	ug/L	25000	8730	116	53-121	0.6	20	
Selenium	522		10.0	ug/L	500	2.7 U	104	65-129	2	10	
Silver	47.5		10.0	ug/L	50.0	1.9 U	95	69-121	1	12	
Sodium	61700		500	ug/L	25000	34800	108	29-171	0.9	21	
Thallium	246		10.0	ug/L	250	4.8 U	99	67-135	2	13	
Vanadium	193		10.0	ug/L	250	1.4 U	77	71-130	0.7	16	
Zinc	467		10.0	ug/L	500	3.8 U	93	63-131	0.02	24	

Classical Chemistry Parameters - Quality Control

QUALITY CONTROL

Batch 8H26023 - NO PREP

Blank (8H26023-BLK1) Prepared: 08/27/2008 07:00 Analyzed: 08/27/2008 11:30

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nitrate/Nitrite as N	**0.044**	**J**	0.10	mg/L							

LCS (8H26023-BS1) Prepared: 08/27/2008 07:00 Analyzed: 08/27/2008 11:33

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nitrate/Nitrite as N	1.3	B	0.10	mg/L	1.25		106	80-120			

Matrix Spike (8H26023-MS1) Prepared: 08/27/2008 07:00 Analyzed: 08/27/2008 12:15

Source: C808446-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nitrate/Nitrite as N	1.5	B	0.10	mg/L	1.28	0.049	111	80-120			

Matrix Spike Dup (8H26023-MSD1) Prepared: 08/27/2008 07:00 Analyzed: 08/27/2008 12:17

Source: C808446-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nitrate/Nitrite as N	1.4	B	0.10	mg/L	1.28	0.049	108	80-120	2	25	

Batch 8H26024 - Same

Blank (8H26024-BLK1) Prepared: 08/26/2008 14:36 Analyzed: 08/26/2008 16:46

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fluoride	0.01	U	0.20	mg/L							
Sulfate as SO4	0.05	U	5.0	mg/L							

LCS (8H26024-BS1) Prepared: 08/26/2008 14:36 Analyzed: 08/26/2008 17:13

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fluoride	0.96		0.20	mg/L	1.00		96	90-110			
Sulfate as SO4	48		5.0	mg/L	50.0		97	90-110			

Matrix Spike (8H26024-MS1) Prepared: 08/26/2008 14:36 Analyzed: 08/26/2008 23:00

Source: C808584-05

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fluoride	1.1		0.20	mg/L	1.00	0.22	89	90-110			QM-07
Sulfate as SO4	80		5.0	mg/L	50.0	31	99	90-110			

Matrix Spike Dup (8H26024-MSD1) Prepared: 08/26/2008 14:36 Analyzed: 08/26/2008 23:26

Source: C808584-05

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fluoride	1.2		0.20	mg/L	1.00	0.22	93	90-110	4	10	
Sulfate as SO4	81		5.0	mg/L	50.0	31	101	90-110	0.9	10	

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QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 8H26027 - NO PREP

Blank (8H26027-BLK1) Prepared: 08/27/2008 18:00 Analyzed: 08/28/2008 16:55

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	10	U	10	mg/L							

LCS (8H26027-BS1) Prepared: 08/27/2008 18:00 Analyzed: 08/28/2008 16:55

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	300		10	mg/L	300		99	90-110			

Duplicate (8H26027-DUP1) Prepared: 08/27/2008 18:00 Analyzed: 08/28/2008 16:55

Source: C808584-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	13000		10	mg/L		12000			7	10	

Batch 8H27005 - NO PREP

Blank (8H27005-BLK1) Prepared: 08/27/2008 07:33 Analyzed: 08/27/2008 10:05

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nitrite as N	**0.014**	**J**	0.10	mg/L							

LCS (8H27005-BS1) Prepared: 08/27/2008 07:33 Analyzed: 08/27/2008 10:06

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nitrite as N	0.93	B	0.10	mg/L	1.00		93	80-120			

Matrix Spike (8H27005-MS1) Prepared: 08/27/2008 07:33 Analyzed: 08/27/2008 10:13

Source: C808209-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nitrite as N	1.0	B	0.10	mg/L	1.00	0.033	98	80-120			

Matrix Spike Dup (8H27005-MSD1) Prepared: 08/27/2008 07:33 Analyzed: 08/27/2008 10:14

Source: C808209-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nitrite as N	1.0	B	0.10	mg/L	1.00	0.033	99	80-120	0.7	25	

Batch 8H27011 - NO PREP

Blank (8H27011-BLK1) Prepared: 08/27/2008 11:24 Analyzed: 08/27/2008 14:46

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity	**3.4**	**JE**	15	mg/L							

LCS (8H27011-BS1) Prepared: 08/27/2008 11:24 Analyzed: 08/27/2008 14:47

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QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 8H27011 - NO PREP

LCS (8H27011-BS1) Continued Prepared: 08/27/2008 11:24 Analyzed: 08/27/2008 14:47

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity	96	B	15	mg/L	100		96	80-120			

Matrix Spike (8H27011-MS1) Prepared: 08/27/2008 11:24 Analyzed: 08/27/2008 14:49

Source: C809306-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity	170	B	15	mg/L	100	76	96	80-120			

Matrix Spike Dup (8H27011-MSD1) Prepared: 08/27/2008 11:24 Analyzed: 08/27/2008 14:50

Source: C809306-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity	170	B	15	mg/L	100	76	96	80-120	0.3	25	

Batch 8H27012 - NO PREP

Blank (8H27012-BLK1) Prepared: 08/27/2008 11:25 Analyzed: 08/27/2008 14:24

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	0.50	U	5.0	mg/L							

LCS (8H27012-BS1) Prepared: 08/27/2008 11:25 Analyzed: 08/27/2008 14:25

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	100		5.0	mg/L	100		103	80-120			

Matrix Spike (8H27012-MS1) Prepared: 08/27/2008 11:25 Analyzed: 08/27/2008 14:26

Source: C809306-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	140		5.0	mg/L	100	46	95	80-120			

Matrix Spike Dup (8H27012-MSD1) Prepared: 08/27/2008 11:25 Analyzed: 08/27/2008 14:26

Source: C809306-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	150		5.0	mg/L	100	46	100	80-120	3	25	

Batch 8H28015 - NO PREP

Blank (8H28015-BLK1) Prepared: 08/28/2008 12:40 Analyzed: 09/04/2008 13:18

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Suspended Solids	1.0	U	1.0	mg/L							

LCS (8H28015-BS1) Prepared: 08/28/2008 12:40 Analyzed: 09/04/2008 13:18

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QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 8H28015 - NO PREP

LCS (8H28015-BS1) Continued Prepared: 08/28/2008 12:40 Analyzed: 09/04/2008 13:18

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Suspended Solids	86		1.0	mg/L	80.0		108	82-119			

Duplicate (8H28015-DUP1) Prepared: 08/28/2008 12:40 Analyzed: 09/04/2008 13:18

Source: C808209-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Suspended Solids	4800		1.0	mg/L		4800			0	10	

Batch 8I02026 - Same

Blank (8I02026-BLK1) Prepared: 09/03/2008 13:25 Analyzed: 09/04/2008 15:22

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Phosphorus	0.050	U	0.10	mg/L							

LCS (8I02026-BS1) Prepared: 09/03/2008 13:25 Analyzed: 09/04/2008 15:24

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Phosphorus	1.7		0.10	mg/L	1.60		105	80-120			

Matrix Spike (8I02026-MS1) Prepared: 09/03/2008 13:25 Analyzed: 09/04/2008 15:27

Source: C807436-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Phosphorus	1.7		0.10	mg/L	1.60	0.050 U	104	80-120			

Matrix Spike Dup (8I02026-MSD1) Prepared: 09/03/2008 13:25 Analyzed: 09/04/2008 15:29

Source: C807436-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Phosphorus	1.7		0.10	mg/L	1.60	0.050 U	104	80-120	0.5	25	

FLAGS/NOTES AND DEFINITIONS

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
MRL	Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.
J-01	Result is estimated due to positive results in the associated method blank.
QB-01	The method blank had a positive result for the analyte; however, the concentration in the method blank is less than 10% of the sample result, which minimizes the impact of the deviation.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

Orlando, FL 32824
Jacksonville, FL 32216-4924
Cary, NC 27511

Page 1 of 1

Client Name: KHA
Project Number: 116436000.2
Address: 501 Independence Pkwy Suite 300
Project Name/Site: Battlefield Golf Club
City/State: Chesapeake VA 23320
PO # / Billing Info: 116436000.2
Tel 757 548-7354 Fax 757 609-3364
Reporting Contact: Mike I.
Sampled By (Print, Affiliation): Mike Iwashchenko / KHA
Billing Contact: Mike I
Sampled By (Sign): M. Iwashchenko
Facility # (if required):

Requested Turnaround Times
Note: Requests subject to acceptance by the lab
X Standard
__ Expedited
Due __/__/__
Lab Workorder: C809306

Requested Analyses / Preservation (See Codes) (Continue as necessary)

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp/Grab	Matrix (see codes)	Total # of Containers	Metals 6000-7000 Series: Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, K, Se, Ag, Na, Tl, Sn, V, Zn	Chloride SM 4500 Cl E	Sulfate 300.0 Fluoride	Nitrate/Nitrite 353.2	Phosphorous 365.4		Total Alkalinity 310.2	TSS 160.2 TDS 160.1	Sample Comments
	MW-3	8/25/08	1:36-1:52	G	GW		X	X	X	X	X	X	X	X	Fly-ASH

<- Total # of Containers

Sample Kit Prepared By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time
				Briana Gregory	8/26/08 10:30
Comments		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time

Cooler Temp at Receipt: 3.0°C
Condition Upon Receipt: __ Acceptable __ Unacceptable

Matrix: GW Groundwater, SW Surface Water, WW Wastewater, A Air, O Other (list in comments)
Preservation: 1 HCl, 2 HNO3, 3 H2SO4, 4 NaOH, 5 NaOH/ZnAc, 6 Other (list in comments)

Note: All samples submitted subject to Laboratory acceptance of the terms and conditions listed on the reverse of hardcopy, unless prior written agreement exist

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In order to quantitatively analyze the transport of Constituents of Concern (COC) through the water table aquifer, a calculation of groundwater velocity is required. The rate of groundwater flow, or seepage velocity of groundwater movement, beneath the site was determined by the following equation:

$$V_s = (K/n)(dh/dl)$$

where:

V_s	=	rate of groundwater flow (feet/day);
K	=	hydraulic conductivity (feet/day); and
n_e	=	estimated effective porosity factor for medium grained sands is 32% (0.32).
dh/dl	=	water table gradient (feet/feet);

On June 17, 2008, three rising-head permeability tests (slug test) were conducted in monitoring wells MW-1, MW-2, and MW-3 to determine the approximate hydraulic conductivity (K) of the unconfined water table aquifer. The slug tests were accomplished by withdrawing a volume (or slug) of water from each of the three monitoring wells. An electric submersible pump and purge tubing were used to evacuate 20 gallons of groundwater from within the well. Once a lower water level was attained within the slug test well, the rate of groundwater recovery was measured at specific time intervals using a Keck interface probe. Hydraulic conductivity was then calculated using the Bouwer-Rice solution for an unconfined aquifer by computer analysis via AQTESOLV, as developed by Glenn M. Duffield, 1989. According to the AQTESOLV instructions, "for most slug tests, one should use visual matching to obtain the most meaningful estimate of hydraulic conductivity with the Bouwer-Rice solution because visual matching gives you greater control over the range of data that you want to match with a straight line." Subsequently, visual matching was used to determine hydraulic conductivity instead of the automatic matching provided by the computer program. The following describes the values used to estimate groundwater flow velocity.

Hydraulic conductivity (K) is defined as the discharge of water through a cross-sectional area of an aquifer under a unit hydraulic gradient. Hydraulic conductivities for MW-1, MW-2 and MW-3 were determined by AQTESOLV to be 1.449 feet/day, 1.491 feet/ day and 2.116 feet/day, respectively.

Porosity (n) is defined as the part of the rock, or sediment media that is void space. Porosity is expressed as a percentage of void space versus the total volume of the media. Porosity values for sedimentary materials range from 26% in fine sands to 60% in silt and clay (Dominico and Swartz, 1988). An effective porosity (n_e) value of 32% is estimated for medium grained sands.

The groundwater gradient (dh/dl) across the site is illustrated as the potentiometric surface. Groundwater gradient equals the change in water table elevation divided by a distance where groundwater flow takes place from high to low potential. Distance is measured in the down-gradient direction. Monitoring well MW-1 is located 428.65 and 363.10 feet down-gradient of monitoring well MW-3 and MW-2, respectively. The average groundwater elevation of 5.62 feet for MW-1 minus the water elevation of 6.43 feet for MW-3 equals a change of 0.81 feet.

Subsequently, a groundwater gradient of 1.89×10^{-3} feet/feet was calculated between monitoring wells MW-1 and MW-3 for the four gauging events (Table 3). The average groundwater elevation of 5.62 feet for MW-1 minus the water elevation of 6.23 feet for MW-2 equals a change of 0.61 feet. Subsequently, a groundwater gradient of 1.68×10^{-3} feet/feet was calculated between monitoring wells MW-1 and MW-2 for the four gauging events (Table 3). Using the above values and recorded measurements, groundwater flow velocity for the three slug tests were calculated to equal:

MW-1	V_s	=	(K/n)(dh/dl)
		=	(1.449 feet/day / 0.32) (1.88×10^{-3} feet/feet)
	V_s	=	8.51×10^{-3} feet/day or 3.11 feet/year
MW-2	V_s	=	(K/n)(dh/dl)
		=	(1.491 feet/day / 0.32) (1.68×10^{-3} feet/feet)
	V_s	=	7.83×10^{-3} feet/day or 2.86 feet/year
MW-3	V_s	=	(K/n)(dh/dl)
		=	(2.116 feet/day / 0.32) (1.88×10^{-3} feet/feet)
	V_s	=	5.88×10^{-3} feet/day or 2.15 feet/year

As noted above, the average rate of groundwater flow velocity (V) for MW-1, MW-2, and MW-3 were calculated to be 8.51×10^{-3} feet/day, 7.83×10^{-3} feet/day, 5.88×10^{-3} feet/day, respectively. If 8.51×10^{-3} feet/day, 7.83×10^{-3} feet/day, 5.88×10^{-3} feet/day is each multiplied by 365.25 days/year, then V equals 3.11 feet/year for MW-1, 2.86 feet/year for MW-2, and 2.15 feet/year for MW-3. Thus, the average onsite seepage velocity (V_s) is calculated at 2.71 feet/year.

Fluctuations in groundwater flow direction, gradient, and velocity can occur at the site and are typically attributed to variations in the subsurface materials located beneath the site or seasonal variations in recharge and discharge. It should also be noted that the velocity of constituents of concern are generally lower than groundwater seepage velocity due to the effects of dispersion and absorption. Processes such as variation in geologic and lithologic conditions, organic carbon content, dilution, natural attenuation, and biodegradation will affect the migration rates.

TABLE 3. GROUNDWATER MONITORING DATA
1001 South Centerville Turnpike
Chesapeake, Virginia
KHA Project No.: 116436000

WELL I.D.	MW-1	MW-2	MW-3
Install Date:	5/15/2008	5/15/2008	5/15/2008
Gauging Date	Depth to Water	Depth to Water	Depth to Water
5/29/2008	5.00	3.75	2.17
6/11/2008	5.49	4.17	2.53
6/12/2008	5.54	4.25	2.62
6/17/2008	5.49	4.22	2.61
AVERAGE	5.38	4.10	2.48

Average onsite Depth to Water is **3.99**

WELL I.D.	MW-1	MW-2	MW-3
TOW Elev.	11.32	10.67	9.23
TOC ELEV.	11.00	10.33	8.91
Gauging Date	Water Elevation	Water Elevation	Water Elevation
5/29/2008	6.00	6.58	6.74
6/11/2008	5.51	6.16	6.38
6/12/2008	5.46	6.08	6.29
6/17/2008	5.51	6.11	6.30
AVERAGE	5.62	6.23	6.43

Average Onsite Water Elevation is **6.09**

Notes:
All groundwater data is presented in feet.
Depth to water is measured in feet from marked top of casing.
Monitor well MW-1 assumed arbitrary elevation of 11.00 feet NGVD.
TOW denotes Top of Well (manhole cover).
Top of casing (TOC) well survey event performed by KHA on May 30,

Spread Sheet for Slug Test Data Calculations MW-1

Static Water Table (Depth to Water from TOC):	5.49
Maximun draw-down depth (start of slug test measurements)	6.42
Depth to Well Bottom (Feet):	22
Initial Displacement (change in water level relative to static water table condition) (G6-G5=):	0.93

Well Casing Radii:
- 1-inch = 0.0667 feet
- 2-inch = 0.17 feet
- 4-inch =
- 6-inch =

Borehole Radius:
- Geoprobe Spoon = 0.1667 feet
- Sm. Hand Auger = 0.27 feet
- Lg. Hand Auger = 0.34 feet
- Hollow Stem Auger = 8.25 feet

Screen Length = Total length of screen interval for entire well.
Gravel Pack Porosity N(e) = 0.32 for medium grained sands
Water Column Height = Depth of well bottom to Static (G6-G4=) 16.51
Saturated Thickness = Estimated 20 feet for Coastal Plain.

Time (seconds)	Depth to Water (ft)	Time(sec)	Displacement
0	6.42	0	0.93
9	6.25	9	0.76
12	6.20	12	0.71
15	6.15	15	0.66
20	6.10	20	0.61
26	6.05	26	0.56
29	6.00	29	0.51
30	5.95	30	0.46
46	5.90	46	0.41
56	5.85	56	0.36
71	5.80	71	0.31
79	5.78	79	0.29
92	5.75	92	0.26
103	5.73	103	0.24
110	5.72	110	0.23
125	5.70	125	0.21
137	5.69	137	0.20
143	5.69	143	0.20
159	5.67	159	0.18
165	5.67	165	0.18
176	5.66	176	0.17
197	5.65	197	0.16
218	5.65	218	0.16
229	5.63	229	0.14
237	5.63	237	0.14
265	5.63	265	0.14
275	5.63	275	0.14
285	5.63	285	0.14

295	5.63	295	0.14
299	5.62	299	0.13
321	5.61	321	0.12
347	5.60	347	0.11
355	5.60	355	0.11
365	5.60	365	0.11
375	5.60	375	0.11
385	5.60	385	0.11
395	5.60	395	0.11
405	5.60	405	0.11
434	5.59	434	0.10
445	5.59	445	0.10
455	5.59	455	0.10
465	5.59	465	0.10
500	5.59	500	0.10
515	5.59	515	0.10
525	5.59	525	0.10
535	5.59	535	0.10
545	5.59	545	0.10
585	5.59	585	0.10
600	5.59	600	0.10
616	5.57	616	0.08
625	5.57	625	0.08
645	5.57	645	0.08
665	5.57	665	0.08
700	5.57	700	0.08
715	5.57	715	0.08
725	5.57	725	0.08
745	5.57	745	0.08
765	5.57	765	0.08
775	5.57	775	0.08
785	5.57	785	0.08
797	5.56	797	0.07
805	5.56	805	0.07
815	5.56	815	0.07
835	5.56	835	0.07
855	5.56	855	0.07
868	5.55	868	0.06
875	5.55	875	0.06
885	5.55	885	0.06
905	5.55	905	0.06
925	5.55	925	0.06
945	5.55	945	0.06
965	5.55	965	0.06
985	5.55	985	0.06
995	5.55	995	0.06
1005	5.55	1005	0.06
1045	5.55	1045	0.06
1065	5.55	1065	0.06
1085	5.55	1085	0.06
1100	5.55	1100	0.06

1115	5.55	1115	0.06
1135	5.55	1135	0.06
1165	5.55	1165	0.06
1185	5.55	1185	0.06
1200	5.55	1200	0.06
1225	5.55	1225	0.06
1245	5.55	1245	0.06
1255	5.55	1255	0.06
1265	5.55	1265	0.06
1285	5.55	1285	0.06
1300	5.55	1300	0.06
1316	5.53	1316	0.04
1335	5.53	1335	0.04
1356	5.53	1356	0.04
1385	5.53	1385	0.04
1400	5.53	1400	0.04
1415	5.53	1415	0.04
1435	5.53	1435	0.04
1445	5.53	1445	0.04
4685	5.53	4685	0.04
1500	5.53	1500	0.04
1535	5.53	1535	0.04
1565	5.53	1565	0.04
1600	5.53	1600	0.04
1615	5.53	1615	0.04
1625	5.53	1625	0.04
1645	5.53	1645	0.04
1655	5.53	1655	0.04
1685	5.53	1685	0.04
1700	5.53	1700	0.04
1715	5.53	1715	0.04
1725	5.53	1725	0.04
1745	5.53	1745	0.04
1765	5.53	1765	0.04
1775	5.53	1775	0.04
1786	5.53	1786	0.04
1800	5.53	1800	0.04
1815	5.53	1815	0.04
1835	5.53	1835	0.04
1845	5.53	1845	0.04
1865	5.53	1865	0.04
1900	5.53	1900	0.04
1915	5.53	1915	0.04
1935	5.53	1935	0.04
1965	5.53	1965	0.04
1985	5.53	1985	0.04
2000	5.53	2000	0.04
2074	5.52	2074	0.03
2085	5.52	2085	0.03
2100	5.52	2100	0.03
2135	5.52	2135	0.03

2165	5.52	2165	0.03
2185	5.52	2185	0.03
2200	5.52	2200	0.03
2225	5.52	2225	0.03
2265	5.52	2265	0.03
2285	5.52	2285	0.03
2300	5.52	2300	0.03
2315	5.52	2315	0.03
2335	5.52	2335	0.03
2345	5.52	2345	0.03
2365	5.52	2365	0.03
2385	5.52	2385	0.03
2400	5.52	2400	0.03

Data Set: Q:\Project Files\City of Chesapeake On-Call Env-116177000\Battlefield Golf Club at Centerville\Phase
Title: MW-1 SLUG TEST
Date: 06/23/08
Time: 16:10:51

PROJECT INFORMATION

Company: Kimley-Horn and Associates
Client: City of Chesapeake
Project: 116436000
Location: Battlefield Golf Course
Test Date: June 17, 2008
Test Well: MW-1

AQUIFER DATA

Saturated Thickness: 20. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: New Well

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 1. ft
Static Water Column Height: 1. ft
Casing Radius: 0.1722 ft
Well Radius: 0.1979 ft
Well Skin Radius: 0.6875 ft
Screen Length: 20. ft
Total Well Penetration Depth: 22. ft
Corrected Casing Radius (Bouwer-Rice Method): 0.1697 ft
Gravel Pack Porosity: 0.32

No. of Observations: 142

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	0.93	965.	0.06
9.	0.76	985.	0.06
12.	0.71	995.	0.06
15.	0.66	1005.	0.06
20.	0.61	1045.	0.06
26.	0.56	1065.	0.06
29.	0.51	1085.	0.06
30.	0.46	1100.	0.06
46.	0.41	1115.	0.06
56.	0.36	1135.	0.06
71.	0.31	1165.	0.06
79.	0.29	1185.	0.06
92.	0.26	1200.	0.06
103.	0.24	1225.	0.06
110.	0.23	1245.	0.06
125.	0.21	1255.	0.06
137.	0.2	1265.	0.06
143.	0.2	1285.	0.06
159.	0.18	1300.	0.06
165.	0.18	1316.	0.04
176.	0.17	1335.	0.04
197.	0.16	1356.	0.04
218.	0.16	1385.	0.04
229.	0.14	1400.	0.04

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
237.	0.14	1415.	0.04
265.	0.14	1435.	0.04
275.	0.14	1445.	0.04
285.	0.14	1500.	0.04
295.	0.14	1535.	0.04
299.	0.13	1565.	0.04
321.	0.12	1600.	0.04
347.	0.11	1615.	0.04
355.	0.11	1625.	0.04
365.	0.11	1645.	0.04
375.	0.11	1655.	0.04
385.	0.11	1685.	0.04
395.	0.11	1700.	0.04
405.	0.11	1715.	0.04
434.	0.1	1725.	0.04
445.	0.1	1745.	0.04
455.	0.1	1765.	0.04
465.	0.1	1775.	0.04
500.	0.1	1786.	0.04
515.	0.1	1800.	0.04
525.	0.1	1815.	0.04
535.	0.1	1835.	0.04
545.	0.1	1845.	0.04
585.	0.1	1865.	0.04
600.	0.1	1900.	0.04
616.	0.08	1915.	0.04
625.	0.08	1935.	0.04
645.	0.08	1965.	0.04
665.	0.08	1985.	0.04
700.	0.08	2000.	0.04
715.	0.08	2074.	0.03
725.	0.08	2085.	0.03
745.	0.08	2100.	0.03
765.	0.08	2135.	0.03
775.	0.08	2165.	0.03
785.	0.08	2185.	0.03
797.	0.07	2200.	0.03
805.	0.07	2225.	0.03
815.	0.07	2265.	0.03
835.	0.07	2285.	0.03
855.	0.07	2300.	0.03
868.	0.06	2315.	0.03
875.	0.06	2335.	0.03
885.	0.06	2345.	0.03
905.	0.06	2365.	0.03
925.	0.06	2385.	0.03
945.	0.06	2400.	0.03

SOLUTION

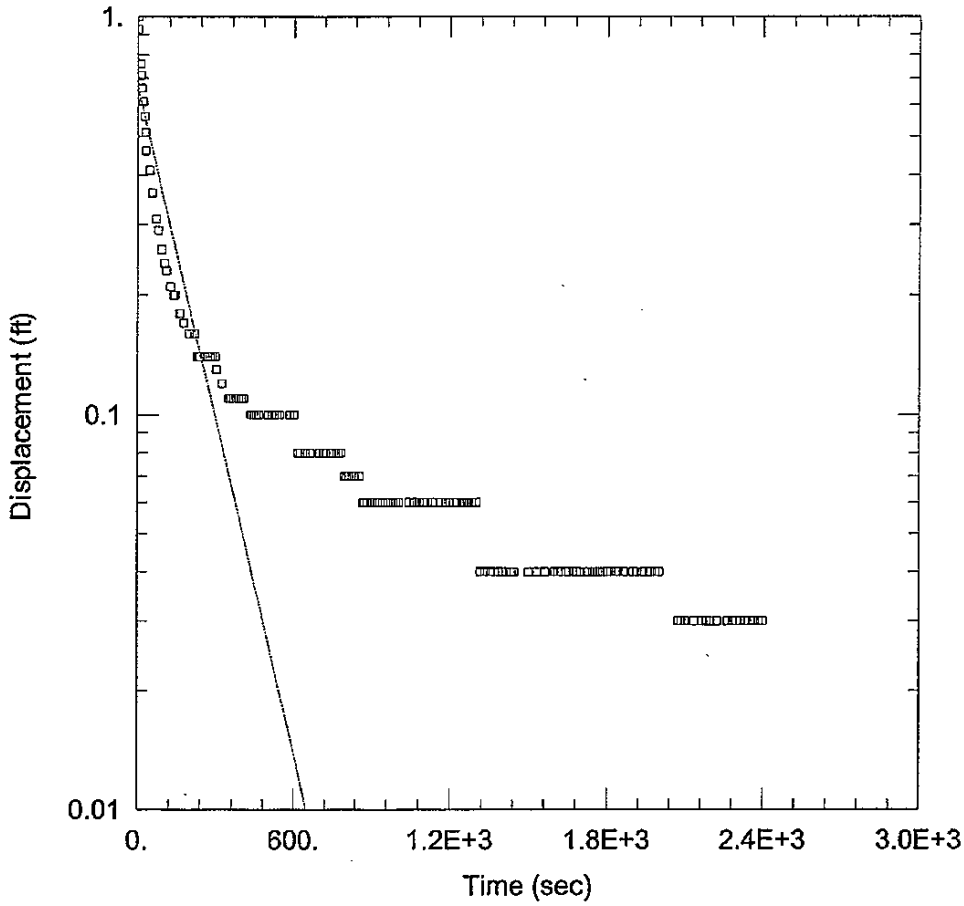
Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 3.615

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	1.449	ft/day
y0	0.6616	ft

K = 0.0005112 cm/sec
T = K*b = 28.98 ft^2/day (0.3116 sq. cm/sec)



MW-1 SLUG TEST

Data Set: Q:\...\MW-1F.aqt
Date: 06/23/08 Time: 16:10:33

PROJECT INFORMATION

Company: Kimley-Horn and Associates
Client: City of Chesapeake
Project: 116436000
Location: Battlefield Golf Course
Test Well: MW-1
Test Date: June 17, 2008

AQUIFER DATA

Saturated Thickness: 20. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 1. ft
Total Well Penetration Depth: 22. ft
Casing Radius: 0.1722 ft
Static Water Column Height: 1. ft
Screen Length: 20. ft
Well Radius: 0.1979 ft
Gravel Pack Porosity: 0.32

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.449 ft/day
y0 = 0.6616 ft

Spread Sheet for Slug Test Data Calculations MW-2

Static Water Table (Depth to Water from TOC):	4.22
Maximun draw-down depth (start of slug test measurements)	4.75
Depth to Well Bottom (Feet):	22
Initial Displacement (change in water level relative to static water table condition) (G6-G5=):	0.53

Well Casing Radii:
- 1-inch = 0.0667 feet
- 2-inch = 0.17 feet
- 4-inch =
- 6-inch =

Borehole Radius:
- Geoprobe Spoon = 0.1667 feet
- Sm. Hand Auger = 0.27 feet
- Lg. Hand Auger = 0.34 feet
- Hollow Stem Auger = 8.25

Screen Length = Total length of screen interval for entire well.
Gravel Pack Porosity N(e) = 0.32 for medium grained sands
Water Column Height = Depth of well bottom to Static (G6-G4=) 17.78
Saturated Thickness = Estimated 20 feet for Coastal Plain.

Time (min:sec)	Depth to Water (ft)	Time	Displacement
0	4.75	0	0.53
12	4.53	12	0.31
16	4.45	16	0.23
23	4.40	23	0.18
38	4.38	38	0.16
52	4.36	52	0.14
56	4.53	56	0.31
74	4.34	74	0.12
99	4.33	99	0.11
105	4.33	105	0.11
115	4.33	115	0.11
125	4.33	125	0.11
130	4.32	130	0.10
145	4.32	145	0.10
165	4.32	165	0.10
195	4.32	195	0.10
201	4.30	201	0.08
215	4.30	215	0.08
230	4.30	230	0.08
242	4.29	242	0.07
255	4.29	255	0.07
275	4.29	275	0.07
295	4.29	295	0.07
300	4.29	300	0.07
315	4.29	315	0.07
335	4.29	335	0.07
345	4.29	345	0.07
358	4.28	358	0.06
365	4.28	365	0.06

385	4.28	385	0.06
405	4.28	405	0.06
425	4.28	425	0.06
445	4.28	445	0.06
465	4.28	465	0.06
485	4.28	485	0.06
500	4.28	500	0.06
518	4.27	518	0.05
535	4.27	535	0.05
545	4.27	545	0.05
585	4.27	585	0.05
600	4.27	600	0.05
615	4.27	615	0.05
625	4.27	625	0.05
645	4.27	645	0.05
665	4.27	665	0.05
685	4.27	685	0.05
700	4.27	700	0.05
715	4.27	715	0.05
725	4.27	725	0.05
752	4.26	752	0.04
765	4.26	765	0.04
775	4.26	775	0.04
795	4.26	795	0.04
800	4.26	800	0.04
815	4.26	815	0.04
825	4.26	825	0.04
845	4.26	845	0.04
865	4.26	865	0.04
885	4.26	885	0.04
900	4.26	900	0.04
915	4.26	915	0.04
935	4.26	935	0.04
965	4.26	965	0.04
985	4.26	985	0.04
1004	4.24	1004	0.02
1015	4.24	1015	0.02
1035	4.24	1035	0.02
1065	4.24	1065	0.02
1085	4.24	1085	0.02
1100	4.24	1100	0.02
1145	4.24	1145	0.02
1165	4.24	1165	0.02
1195	4.24	1195	0.02
1200	4.24	1200	0.02
1225	4.24	1225	0.02
1245	4.24	1245	0.02
1285	4.24	1285	0.02
1300	4.24	1300	0.02
1335	4.24	1335	0.02
1365	4.24	1365	0.02
1385	4.24	1385	0.02

1425	4.24	1425	0.02
1445	4.24	1445	0.02
1465	4.24	1465	0.02
1495	4.24	1495	0.02
1500	4.24	1500	0.02
1515	4.24	1515	0.02
1535	4.24	1535	0.02
1552	4.23	1552	0.01
1665	4.23	1665	0.01
1575	4.23	1575	0.01
1595	4.23	1595	0.01
1600	4.23	1600	0.01
1635	4.23	1635	0.01
1685	4.23	1685	0.01
1695	4.23	1695	0.01
1700	4.23	1700	0.01
1725	4.23	1725	0.01
1765	4.23	1765	0.01
1785	4.23	1785	0.01
1800	4.23	1800	0.01
1815	4.23	1815	0.01
1845	4.23	1845	0.01
1865	4.23	1865	0.01
1900	4.23	1900	0.01
1925	4.23	1925	0.01
1955	4.23	1955	0.01
1985	4.23	1985	0.01
2000	4.23	2000	0.01
2025	4.23	2025	0.01
2056	4.23	2056	0.01
2085	4.23	2085	0.01
2100	4.23	2100	0.01
2125	4.23	2125	0.01
2145	4.23	2145	0.01
2165	4.23	2165	0.01
2185	4.23	2185	0.01
2200	4.23	2200	0.01
2225	4.23	2225	0.01
2265	4.23	2265	0.01
2285	4.23	2285	0.01
2300	4.23	2300	0.01
2325	4.23	2325	0.01
2345	4.23	2345	0.01
2365	4.23	2365	0.01
2385	4.23	2385	0.01
2400	4.23	2400	0.01

The Error Log identifies errors detected in your data set.
Choose this view when you see the "Check Errors" indicator on the status bar.

No errors detected in data set.

Tips for Analyzing Aquifer Tests with AQTESOLV for Windows

1. Enter Test Data
   Choose options from the Edit menu to enter or modify test data.
2. Perform Diagnostic Analyses (Optional)
   Choose diagnostic flow plot and derivative plot options from the View menu.
3. Perform Curve Matching or Prediction
   Choose the Solution or Toolbox options from the Match menu to perform forward solution analys
   Choose the Automatic, Visual or Toolbox options from the Match menu to perform curve matchin
4. Analysis of Residuals (Optional)
   Choose residual plot and diagnostic report options from View menu to evaluate automatic curve f
5. Reporting
   Choose Format option from View menu to customize appearance of plots and reports.
   Choose Print Preview and Print options from File menu to obtain hardcopy output.

Data Set Summary

Slug Test
Total no. of observations: 127
Range of time readings in obs. well(s): 0 to 2400 sec
Range of displacement readings in obs. well(s): 0.01 to 0.53 ft

Data Set: Q:\Project Files\City of Chesapeake On-Call Env-116177000\Battlefield Golf Club at Centerville\Phase
Title: MW-2 SLUG TEST
Date: 06/23/08
Time: 16:11:15

PROJECT INFORMATION

Company: Kimley-Horn and Associates
Client: City of Chesapeake
Project: 116436000
Location: Battlefield Golf Course
Test Date: June 17, 2008
Test Well: MW-2

AQUIFER DATA

Saturated Thickness: 20. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-2

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 0.53 ft
Static Water Column Height: 4.22 ft
Casing Radius: 0.1722 ft
Well Radius: 0.1979 ft
Well Skin Radius: 0.6875 ft
Screen Length: 20. ft
Total Well Penetration Depth: 22. ft
Corrected Casing Radius (Bouwer-Rice Method): 0.1697 ft
Gravel Pack Porosity: 0.32

No. of Observations: 127

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	0.53	1004.	0.02
12.	0.31	1015.	0.02
16.	0.23	1035.	0.02
23.	0.18	1065.	0.02
38.	0.16	1085.	0.02
52.	0.14	1100.	0.02
56.	0.31	1145.	0.02
74.	0.12	1165.	0.02
99.	0.11	1195.	0.02
105.	0.11	1200.	0.02
115.	0.11	1225.	0.02
125.	0.11	1245.	0.02
130.	0.1	1285.	0.02
145.	0.1	1300.	0.02
165.	0.1	1335.	0.02
195.	0.1	1365.	0.02
201.	0.08	1385.	0.02
215.	0.08	1425.	0.02
230.	0.08	1445.	0.02
242.	0.07	1465.	0.02
255.	0.07	1495.	0.02
275.	0.07	1500.	0.02
295.	0.07	1515.	0.02
300.	0.07	1535.	0.02

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
315.	0.07	1552.	0.01
335.	0.07	1575.	0.01
345.	0.07	1595.	0.01
358.	0.06	1600.	0.01
365.	0.06	1635.	0.01
385.	0.06	1665.	0.01
405.	0.06	1685.	0.01
425.	0.06	1695.	0.01
445.	0.06	1700.	0.01
465.	0.06	1725.	0.01
485.	0.06	1765.	0.01
500.	0.06	1785.	0.01
518.	0.05	1800.	0.01
535.	0.05	1815.	0.01
545.	0.05	1845.	0.01
585.	0.05	1865.	0.01
600.	0.05	1900.	0.01
615.	0.05	1925.	0.01
625.	0.05	1955.	0.01
645.	0.05	1985.	0.01
665.	0.05	2000.	0.01
685.	0.05	2025.	0.01
700.	0.05	2056.	0.01
715.	0.05	2085.	0.01
725.	0.05	2100.	0.01
752.	0.04	2125.	0.01
765.	0.04	2145.	0.01
775.	0.04	2165.	0.01
795.	0.04	2185.	0.01
800.	0.04	2200.	0.01
815.	0.04	2225.	0.01
825.	0.04	2265.	0.01
845.	0.04	2285.	0.01
865.	0.04	2300.	0.01
885.	0.04	2325.	0.01
900.	0.04	2345.	0.01
915.	0.04	2365.	0.01
935.	0.04	2385.	0.01
965.	0.04	2400.	0.01
985.	0.04		

SOLUTION

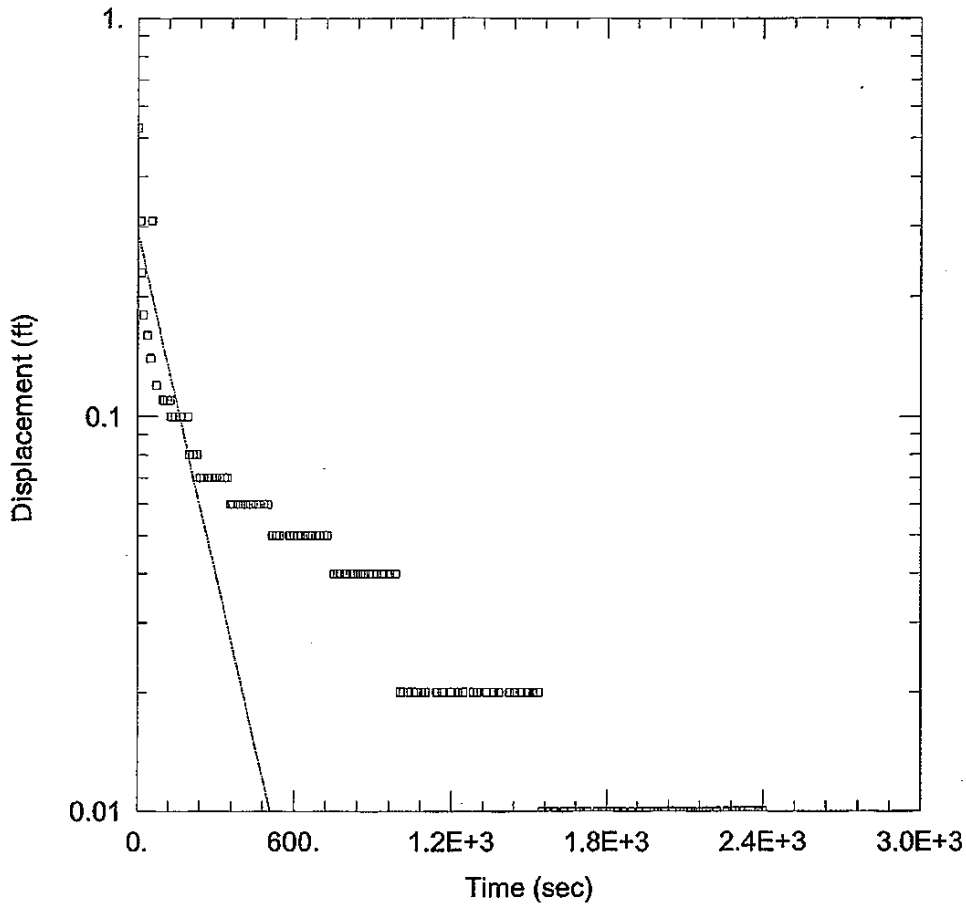
Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 3.615

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	1.491	ft/day
y0	0.2922	ft

K = 0.0005259 cm/sec
T = K*b = 29.81 ft²/day (0.3206 sq. cm/sec)



MW-2 SLUG TEST

Data Set: Q:\...\MW-2.aqt
Date: 06/23/08 Time: 16:11:09

PROJECT INFORMATION

Company: Kimley-Horn and Associates
Client: City of Chesapeake
Project: 116436000
Location: Battlefield Golf Course
Test Well: MW-2
Test Date: June 17, 2008

AQUIFER DATA

Saturated Thickness: 20. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: 0.53 ft
Total Well Penetration Depth: 22. ft
Casing Radius: 0.1722 ft
Static Water Column Height: 4.22 ft
Screen Length: 20. ft
Well Radius: 0.1979 ft
Gravel Pack Porosity: 0.32

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.491 ft/day
y0 = 0.2922 ft

Spread Sheet for Slug Test Data Calculations MW-3

Static Water Table (Depth to Water from TOC):	2.61
Maximun draw-down depth (start of slug test measurements)	3.35
Depth to Well Bottom (Feet):	22
Initial Displacement (change in water level relative to static water table condition) (G6-G5=):	0.74

Well Casing Radii:
- 1-inch = 0.0667 feet
- 2-inch = 0.17 feet
- 4-inch =
- 6-inch =

Borehole Radius:
- Geoprobe Spoon = 0.1667 feet
- Sm. Hand Auger = 0.27 feet
- Lg. Hand Auger = 0.34 feet
- Hollow Stem Auger = 8.25 feet

Screen Length = Total length of screen interval for entire well.
Gravel Pack Porosity N(e) = 0.32 for medium grained sands
Water Column Height = Depth of well bottom to Static (G6-G4=) 19.39
Saturated Thickness = Estimated 20 feet for Coastal Plain.

Time (min:sec)	Depth to Water (ft)	Time	Displacement
0	3.35	0	0.74
12	3.21	12	0.60
16	3.15	16	0.54
18	3.10	18	0.49
22	3.05	22	0.44
27	3.00	27	0.39
32	2.98	32	0.37
35	2.95	35	0.34
39	2.93	39	0.32
44	2.90	44	0.29
50	2.88	50	0.27
55	2.86	55	0.25
59	2.85	59	0.24
66	2.83	66	0.22
80	2.80	80	0.19
102	2.77	102	0.16
128	2.75	128	0.14
139	2.74	139	0.13
158	2.73	158	0.12
170	2.72	170	0.11
185	2.72	185	0.11
195	2.72	195	0.11
201	2.71	201	0.10
217	2.70	217	0.09
245	2.70	245	0.09
264	2.69	264	0.08
285	2.69	285	0.08
300	2.69	300	0.08
316	2.68	316	0.07

335	2.68	335	0.07
345	2.68	345	0.07
375	2.68	375	0.07
385	2.68	385	0.07
393	2.67	393	0.06
427	2.66	427	0.05
445	2.66	445	0.05
465	2.66	465	0.05
485	2.66	485	0.05
500	2.66	500	0.05
515	2.66	515	0.05
535	2.66	535	0.05
565	2.66	565	0.05
600	2.66	600	0.05
615	2.66	615	0.05
625	2.66	625	0.05
645	2.66	645	0.05
665	2.66	665	0.05
685	2.66	685	0.05
700	2.66	700	0.05
725	2.66	725	0.05
757	2.64	757	0.03
785	2.64	785	0.03
795	2.64	795	0.03
800	2.64	800	0.03
825	2.64	825	0.03
845	2.64	845	0.03
885	2.64	885	0.03
900	2.64	900	0.03
915	2.64	915	0.03
938	2.63	938	0.02
955	2.63	955	0.02
985	2.63	985	0.02
1000	2.63	1000	0.02
1025	2.63	1025	0.02
1045	2.63	1045	0.02
1065	2.63	1065	0.02
1085	2.63	1085	0.02
1100	2.63	1100	0.02
1125	2.63	1125	0.02
1145	2.62	1145	0.01
1165	2.62	1165	0.01
1185	2.62	1185	0.01
1200	2.62	1200	0.01
1225	2.62	1225	0.01
1245	2.62	1245	0.01
1285	2.62	1285	0.01
1300	2.62	1300	0.01
1335	2.62	1335	0.01
1355	2.62	1355	0.01
1385	2.62	1385	0.01
1400	2.62	1400	0.01

1425	2.62	1425	0.01
1455	2.62	1455	0.01
1485	2.62	1485	0.01
1500	2.62	1500	0.01
1525	2.62	1525	0.01
1555	2.62	1555	0.01
1585	2.62	1585	0.01
1600	2.62	1600	0.01
1625	2.62	1625	0.01
1645	2.62	1645	0.01
1685	2.62	1685	0.01
1700	2.62	1700	0.01
1725	2.62	1725	0.01
1750	2.62	1750	0.01
1760	2.62	1760	0.01
1785	2.62	1785	0.01
1800	2.62	1800	0.01
1825	2.62	1825	0.01
1856	2.61	1856	0.00

The Error Log identifies errors detected in your data set.
Choose this view when you see the "Check Errors" indicator on the status bar.

Correct The Following Errors Before Proceeding With Analysis
WARNING: Maximum displacement > initial displacement.

Tips for Analyzing Aquifer Tests with AQTESOLV for Windows

1. Enter Test Data
   Choose options from the Edit menu to enter or modify test data.
2. Perform Diagnostic Analyses (Optional)
   Choose diagnostic flow plot and derivative plot options from the View menu.
3. Perform Curve Matching or Prediction
   Choose the Solution or Toolbox options from the Match menu to perform forward solution analys
   Choose the Automatic, Visual or Toolbox options from the Match menu to perform curve matchin
4. Analysis of Residuals (Optional)
   Choose residual plot and diagnostic report options from View menu to evaluate automatic curve f
5. Reporting
   Choose Format option from View menu to customize appearance of plots and reports.
   Choose Print Preview and Print options from File menu to obtain hardcopy output.

Data Set Summary

Slug Test
Total no. of observations: 100
Range of time readings in obs. well(s): 0 to 1856 sec
Range of displacement readings in obs. well(s): 0 to 0.74 ft

Data Set: Q:\Project Files\City of Chesapeake On-Call Env-116177000\Battlefield Golf Club at Centerville\Phas
Title: MW-3 SLUG TEST
Date: 06/23/08
Time: 16:11:39

PROJECT INFORMATION

Company: Kimley-Horn and Associates
Client: City of Chesapeake
Project: 116436000
Location: Battlefield Golf Course
Test Date: June 17, 2008
Test Well: MW-3

AQUIFER DATA

Saturated Thickness: 20. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-3

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 0.53 ft
Static Water Column Height: 4.22 ft
Casing Radius: 0.1722 ft
Well Radius: 0.1979 ft
Well Skin Radius: 0.6875 ft
Screen Length: 20. ft
Total Well Penetration Depth: 22. ft
Corrected Casing Radius (Bouwer-Rice Method): 0.1697 ft
Gravel Pack Porosity: 0.32

No. of Observations: 100

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	0.74	757.	0.03
12.	0.6	785.	0.03
16.	0.54	795.	0.03
18.	0.49	800.	0.03
22.	0.44	825.	0.03
27.	0.39	845.	0.03
32.	0.37	885.	0.03
35.	0.34	900.	0.03
39.	0.32	915.	0.03
44.	0.29	938.	0.02
50.	0.27	955.	0.02
55.	0.25	985.	0.02
59.	0.24	1000.	0.02
66.	0.22	1025.	0.02
80.	0.19	1045.	0.02
102.	0.16	1065.	0.02
128.	0.14	1085.	0.02
139.	0.13	1100.	0.02
158.	0.12	1125.	0.02
170.	0.11	1145.	0.01
185.	0.11	1165.	0.01
195.	0.11	1185.	0.01
201.	0.1	1200.	0.01
217.	0.09	1225.	0.01

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
245.	0.09	1245.	0.01
264.	0.08	1285.	0.01
285.	0.08	1300.	0.01
300.	0.08	1335.	0.01
316.	0.07	1355.	0.01
335.	0.07	1385.	0.01
345.	0.07	1400.	0.01
375.	0.07	1425.	0.01
385.	0.07	1455.	0.01
393.	0.06	1485.	0.01
427.	0.05	1500.	0.01
445.	0.05	1525.	0.01
465.	0.05	1555.	0.01
485.	0.05	1585.	0.01
500.	0.05	1600.	0.01
515.	0.05	1625.	0.01
535.	0.05	1645.	0.01
565.	0.05	1685.	0.01
600.	0.05	1700.	0.01
615.	0.05	1725.	0.01
625.	0.05	1750.	0.01
645.	0.05	1760.	0.01
665.	0.05	1785.	0.01
685.	0.05	1800.	0.01
700.	0.05	1825.	0.01
725.	0.05	1856.	0.

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 3.615

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	2.116	ft/day
y0	0.604	ft

K = 0.0007465 cm/sec
T = K*b = 42.32 ft²/day (0.4551 sq. cm/sec)

Data Set:
Title: MW-3 SLUG TEST
Date: 06/23/08
Time: 15:43:09

PROJECT INFORMATION

Company: Kimley-Horn and Associates
Client: City of Chesapeake
Project: 116436000
Location: Battlefield Golf Course
Test Date: June 17, 2008
Test Well: MW-3

AQUIFER DATA

Saturated Thickness: 20. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-3

X Location: 0. ft
Y Location: 0. ft

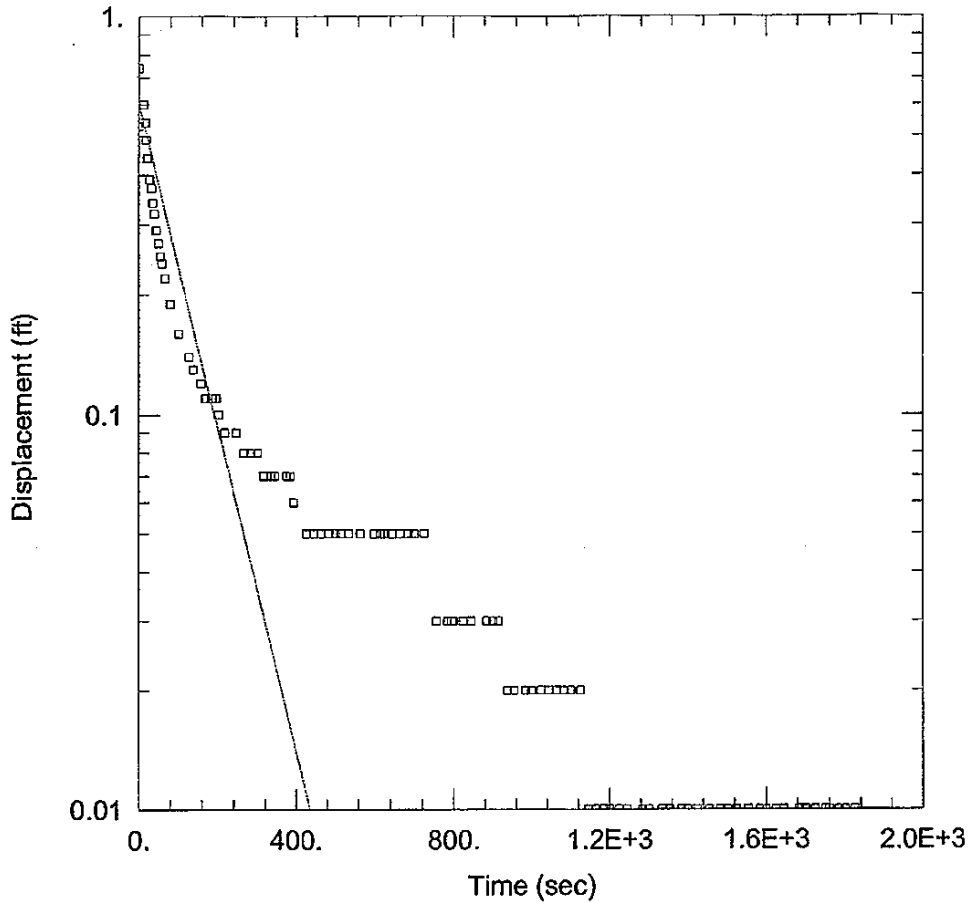
Initial Displacement: 0.53 ft
Static Water Column Height: 4.22 ft
Casing Radius: 0.1722 ft
Well Radius: 0.1979 ft
Well Skin Radius: 0.6875 ft
Screen Length: 20. ft
Total Well Penetration Depth: 22. ft

No. of Observations: 100

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	0.74	757.	0.03
12.	0.6	785.	0.03
16.	0.54	795.	0.03
18.	0.49	800.	0.03
22.	0.44	825.	0.03
27.	0.39	845.	0.03
32.	0.37	885.	0.03
35.	0.34	900.	0.03
39.	0.32	915.	0.03
44.	0.29	938.	0.02
50.	0.27	955.	0.02
55.	0.25	985.	0.02
59.	0.24	1000.	0.02
66.	0.22	1025.	0.02
80.	0.19	1045.	0.02
102.	0.16	1065.	0.02
128.	0.14	1085.	0.02
139.	0.13	1100.	0.02
158.	0.12	1125.	0.02
170.	0.11	1145.	0.01
185.	0.11	1165.	0.01
195.	0.11	1185.	0.01
201.	0.1	1200.	0.01
217.	0.09	1225.	0.01
245.	0.09	1245.	0.01
264.	0.08	1285.	0.01

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
285.	0.08	1300.	0.01
300.	0.08	1335.	0.01
316.	0.07	1355.	0.01
335.	0.07	1385.	0.01
345.	0.07	1400.	0.01
375.	0.07	1425.	0.01
385.	0.07	1455.	0.01
393.	0.06	1485.	0.01
427.	0.05	1500.	0.01
445.	0.05	1525.	0.01
465.	0.05	1555.	0.01
485.	0.05	1585.	0.01
500.	0.05	1600.	0.01
515.	0.05	1625.	0.01
535.	0.05	1645.	0.01
565.	0.05	1685.	0.01
600.	0.05	1700.	0.01
615.	0.05	1725.	0.01
625.	0.05	1750.	0.01
645.	0.05	1760.	0.01
665.	0.05	1785.	0.01
685.	0.05	1800.	0.01
700.	0.05	1825.	0.01
725.	0.05	1856.	0.



MW-3 SLUG TEST

Data Set: Q:\...\MW-3.aqt
Date: 06/23/08 Time: 16:11:32

PROJECT INFORMATION

Company: Kimley-Horn and Associates
Client: City of Chesapeake
Project: 116436000
Location: Battlefield Golf Course
Test Well: MW-3
Test Date: June 17, 2008

AQUIFER DATA

Saturated Thickness: 20. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-3)

Initial Displacement: 0.53 ft
Total Well Penetration Depth: 22. ft
Casing Radius: 0.1722 ft
Static Water Column Height: 4.22 ft
Screen Length: 20. ft
Well Radius: 0.1979 ft
Gravel Pack Porosity: 0.32

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 2.116 ft/day
y0 = 0.604 ft