May 27, 2008

Mr. David Fugate, P.G., Geologist
Knoxville Environmental Field Office
Division of Solid Waste Management
Tennessee Department of Environment and Conservation
3711 Middlebrook Pike
Knoxville, Tennessee 37921

TENNESSEE VALLEY AUTHORITY – KINGSTON FOSSIL PLANT – GYPSUM DISPOSAL AREA – IDL 73-0211 – MARCH 2008 GROUNDWATER MONITORING REPORT

Dear Mr. Fugate:

Please find enclosed the groundwater monitoring report containing the first set of baseline monitoring results for samples collected March 25, 2008 and April 7, 2008, at the subject facility. Laboratory data from the analyses of groundwater samples collected during this monitoring event is summarized in Table 1.

Analytical results indicated that constituent concentrations for all samples were below TDEC maximum contaminant limits (MCL). The suspended solid content of the sample from well G6B (76 mg/L) was elevated compared to that of other samples (5 to 49 mg/L). This probably accounts for the higher arsenic and lead concentrations for well G6B relative to other wells. Consequently, additional development of well G6B was completed on May 22, 2008, to reduce turbidity of this well before the next baseline monitoring event scheduled for the week of June 2, 2008.

Other supporting information with this submittal includes:

- A description of groundwater conditions at the time of sampling including a potentiometric surface map based on water-level measurements made on March 25, 2008, in wells located in vicinity of the facility (Figure 1).
- Field Data Sheets (Appendix A).
- Sample custody record (Appendix B).
- Laboratory Data Sheets (Appendix C).

I certify this information was prepared by a system designed to ensure qualified personnel properly gathered and evaluated the information submitted. The information submitted is to the best of my knowledge and belief true, accurate, and complete.

If you have questions regarding the report, please contact John Dizer at (423) 751-7636 or Cynthia McCowan at (865) 717-2180.

Cynthia M. Anderson
Acting Manager
Waste, Water, and Regulatory Programs
5D Lookout Place

JED:PAB
Enclosure
cc (Enclosure):
R. C. Hall, KFP 1A-KST (w/o Enclosure)
J. M. Boggs, WT 9D-K
C. W. McCowan, KFP 1A-KST
G. R. Signer, WT 6A-K (w/o Enclosure)
EDM, WT CA-K
Prepared by J. Mark Boggs, reviewed by John Dizer
p:\media files\solid waste\general\Kif baseline GWM-Gypsum Mar-08 jed.doc

Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402-2801

May 27, 2008

Mr. David Fugate, P.G., Geologist
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Cynthia M. Anderson

Cynthia M. Anderson
Acting Manager
Waste, Water, and Regulatory Programs
5D Lookout Place

Enclosure

Tennessee Valley Authority
Kingston Fossil Plant
Gypsum Landfill (IDL 73-0211)

GROUNDWATER MONITORING REPORT
MARCH 2008

Prepared by

J. Mark Boggs, P.G.
Knoxville, Tennessee

May 23, 2008

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INTRODUCTION

This report contains the first set of quarterly baseline groundwater monitoring results for samples collected March 25 and April 7, 2008 at the Class II Gypsum Landfill. Groundwater samples were collected by TVA staff and analyzed by Environmental Science Corporation (ESC), an EPA-certified laboratory. Sample collection and laboratory analyses were performed in accordance with Tennessee Department of Conservation and Environment (TDEC) Rule 1200-1-7-.04 and the facility Groundwater Monitoring Plan approved by TDEC December 20, 2007.

GROUNDWATER SAMPLING

Unfiltered groundwater samples were collected on March 25-26 at downgradient monitoring wells G3A, G3B, G4B, G5A, G5B and G6B by J.E. Stockburger and W.F. Nichols. Upgradient well G1B was not sampled until April 7 due to an unanticipated delay in delivery of deep sampling equipment required for this monitoring well. Submersible (centrifugal) pumps were used to purge and sample all wells. QC duplicate samples were collected from well G4B, and an equipment blank was collected after well G3A. Field parameters (i.e., temperature, specific conductance, pH, dissolved oxygen, and oxidation-reduction potential) were monitored during well purging using a flow-through cell and calibrated instruments. Each well was considered properly evacuated when field parameters remained stable during purging of a minimum of two well volumes Field data sheets are included in Appendix A.

Immediately following collection, groundwater samples were transferred to new sample bottles provided by the laboratory with appropriate preservatives, where applicable. The samples were then sealed, labeled, recorded on a custody form, and placed in an iced cooler for transport. Samples were delivered to ESC on March 28 and April 9. Copies of the sample custody forms are given in Appendix B.

ANALYTICAL RESULTS

Unfiltered groundwater samples were analyzed for the 17 inorganic constituents specified in Appendix I of TDEC Rule 1200-1-7-.04 and the approved Groundwater Monitoring Plan. Laboratory results completed on April 17 are summarized in Table 1. Constituent concentrations reported for all samples were below TDEC maximum contaminant limits (MCL). The suspended solids content of the sample from well G6B (76 mg/L) was elevated compared to that of other well samples (5 to 49 mg/L). This probably accounts for the higher arsenic and lead concentrations for well G6B relative to other wells. Additional development of well G6B will be performed to reduce turbidity of this well before the next baseline monitoring event.

All analytical testing was performed within recommended sample holding times. Results for the equipment blank showed no detectable concentrations for any of the required constituents. Appendix C provides the complete laboratory report containing analytical methods, detection limits, and data qualifiers (where applicable).

HYDROGEOLOGIC CONDITIONS

The Gypsum Landfill site is situated on a peninsula at the confluence of the Emory and Clinch Rivers. The peninsula is bounded by the Emory River and plant intake channel to the north and by the Clinch River to east and south. Residual soils form a mantle above bedrock across most of the landfill area. These soils primarily consist of clay and silt with variable but minor chert and sand content. Thickness varies widely across the site, ranging from 8 to 120 feet and averaging approximately 40 feet. Vertical hydraulic conductivity (K_v) of undisturbed residuum samples ranges from 10^{-8} to 10^{-4} cm/s. Bulk horizontal hydraulic conductivities (K_h) obtained from single-well pumping tests range from 10^{-6} to 10^{-3} cm/s with a geometric mean K_h of $3x10^{-4}$ cm/s. Alluvial soils are present in the low-lying central portion of the Phase 1 disposal area corresponding to a former doline pond and associated drainage feature connecting the pond with the Clinch River. Alluvium is composed of clayey to sandy silt with chert fragments, and varies in thickness from approximately 2 to 48 feet.

Table 1. March 25-26 and April 7, 2008 Groundwater Monitoring Results

Analytical Results for Appendix I Inorganic Constituents									
Constituent	Units	KIF-G1B upgradient	KIF-G3A downgradient	KIF-G3B downgradient	KIF-G4B[1] downgradient	KIF-G5A downgradient	KIF-G5B downgradient	KIF-G6B downgradient	MCL
Antimony	µg/L	< 1	< 1	< 1	1.2	< 1	< 1	< 1	6
Arsenic	µg/L	1.2	1.3	< 1	2.35	< 1	1	11	50
Barium	µg/L	410	18	18	65	23	14	15	2,000
Beryllium	µg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	4
Cadmium	µg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	5
Chromium	µg/L	13	3.8	5.2	2.15	2.7	5.2	10	100
Cobalt	µg/L	< 10	1.1	< 1	< 1	< 1	< 1	1.6	--
Copper	µg/L	3	1.9	3.4	9.25	1.3	2.7	8.2	--
Fluoride	mg/L	< 0.1	< 0.1	0.13	0.125	< 0.1	< 0.1	< 0.1	4
Lead	µg/L	2.7	2.3	1.2	< 1	1.3	2.6	14	50
Mercury	µg/L	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	2
Nickel	µg/L	11	5.6	3.6	3.9	2	2.7	12	100
Selenium	µg/L	< 1	< 1	< 1	< 1	< 1	< 1	< 1	50
Silver	µg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	100
Thallium	µg/L	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2
Vanadium	µg/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--
Zinc	µg/L	28	10	< 10	34	< 10	< 10	36	--

[1]*Reported data are averages of duplicate samples.*

Bedrock beneath the soil overburden is comprised of the Chepultepec, Longview, Kingsport, and Mascot members of the Knox Group. These units are generally composed of cherty dolomite, dolomitic limestone, and some clastic rock. Bedrock strikes about N55°E and dips southeast at angles ranging from approximately 40 to 50 degrees. Groundwater movement within bedrock occurs in joints and fractures some of which have been enlarged by carbonate rock dissolution. While several sinkholes were observed during field investigations prior to landfill foundation preparation, these features showed no evidence of direct drainage into underlying bedrock. Stable soil conditions were indicated at each sinkhole with at least 35 feet of void-free overburden and no evidence of soil stoping. Single well tests indicate bulk K_h values for bedrock ranging from 10^{-6} to 10^{-2} cm/s, and a geometric mean value of $4x10^{-4}$ cm/s. Flowmeter profiles in the bedrock wells suggest that the epikarst zone (weathered zone near the top of bedrock) is typically one of the more transmissive bedrock zones. However, the presence of interconnected fractures and cavities below the epikarst may have similar or higher transmissivity.

The first occurrence of groundwater beneath the landfill area is generally within the soil overburden, whereas the water table is well below the soil-bedrock interface in upland areas just north of the landfill. Groundwater levels measured in facility monitoring wells on March 25 prior to sampling are presented in Table 2. The groundwater potentiometric surface derived from these measurements shown on Figure 1 indicates that groundwater generally flows southward across the landfill site toward the Clinch River. The average hydraulic gradient estimated between upgradient bedrock well G1B and downgradient wells G3B, G4B, G5B and G6B is approximately 0.0038. Applying the geometric mean bedrock K_h of $4x10^{-4}$ cm/s (1.1 ft/d), the local Darcy flux through shallow bedrock is estimated to be approximately $4.3x10^{-3}$ ft/d. All groundwater originating on, or flowing beneath, the landfill ultimately discharges into the Clinch River without traversing private property.

Table 2. March 25, 2008 Groundwater Level Measurements

Well No.	Top of Casing Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
KIF-G1B	858.08	114.31	743.77
KIF-G3A	749.45	12.14	737.31
KIF-G3B	750.17	12.86	737.31
KIF-G4B	766.70	29.09	737.61
KIF-G5A	758.89	21.81	737.08
KIF-G5B	758.43	21.35	737.08
KIF-G6B	773.49	36.11	737.38

CONCLUSIONS

Groundwater monitoring results for the first quarterly baseline event showed no evidence of groundwater contamination. Concentrations of the 17 Appendix I inorganic constituents were below MCL in all groundwater samples. Additional development of monitoring well G6B will be performed to reduce sample turbidity before the next quarterly baseline event.

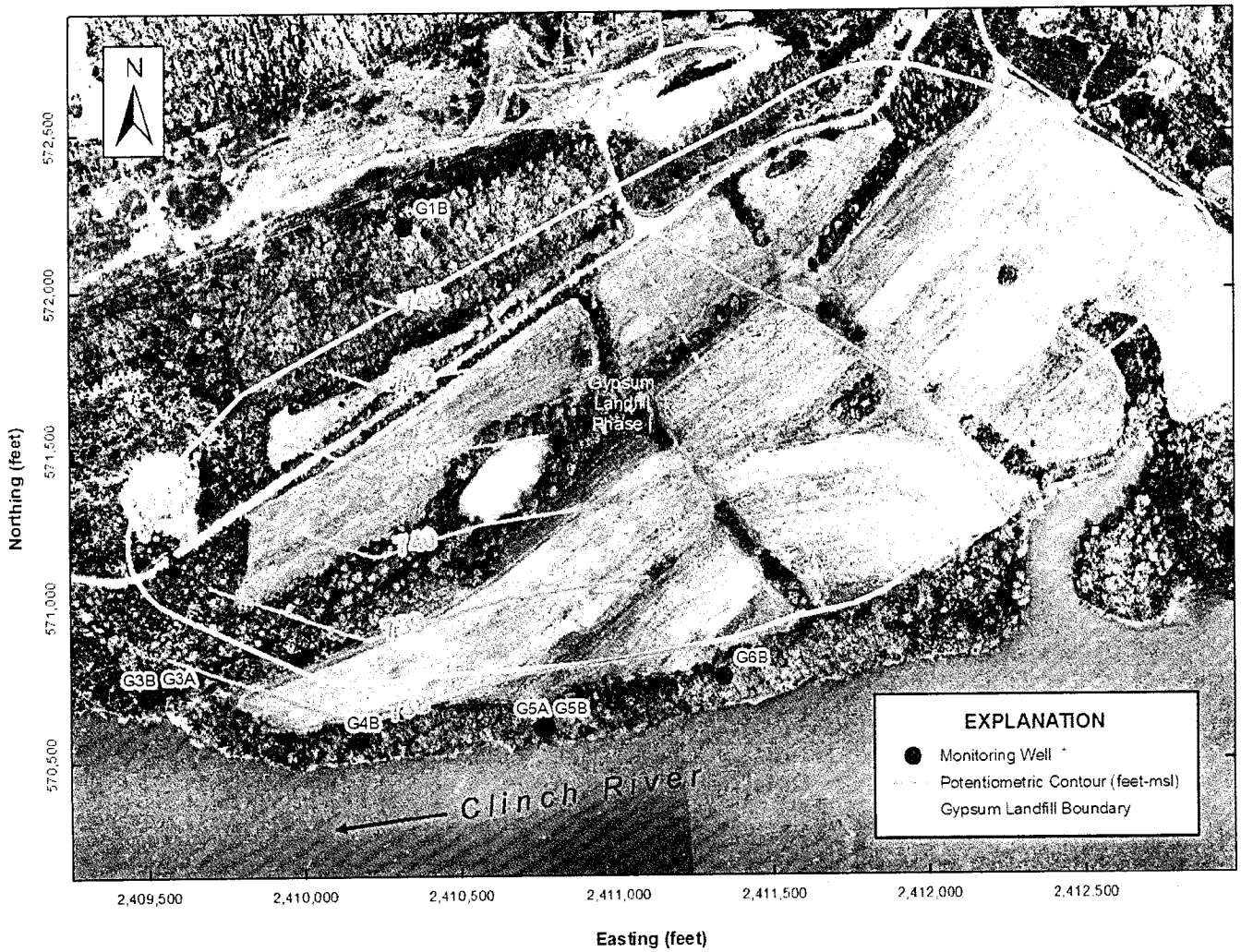

Figure 1. March 25, 2008 Groundwater Potentiometric Surface

APPENDIX A

FIELD DATA SHEETS

Project/Site	Well Number	Purge Date	Year	Month	Day
KINGSTON GROUNDWATER	1B 84068		08	04	07

Depth to Water (m)	Bottom of Well (m)	Well Diameter (mm)	Survey Leader	Field Crew
31.31 4195	39.19 4194	153 4188	SAG	WFN

☐ Depth of Screen ☑ Open Bore Hole

(m)	To	(m)	Sample Label	Filter Type and Size:
4191		4190	KIF-G1B	☑ Unfiltered ☐ Filtered ☐ Both

[Bottom of Well - Depth to Water] x Volume Factor =	Well Volume	Target Purge Volume	Actual Purge Volume
[(39.19)m - (31.31)m] x (18.228)L/m=	143.63 (L)	287.26 (L)	298 (L) 4186

Purge Pump: ☐ Bladder ☐ Centrifugal ☐ Peristaltic ☐ Dedicated Other (list): REDI-FLO

Sample Pump: ☐ Bladder ☐ Centrifugal ☐ Peristaltic ☐ Dedicated Other (list): REDI-FLO

Notes and WQ Observations	Time (ET) CT	Pump Rate (L/min)	Depth to Water (m)	Pump Depth (m)	Temp °C	pH (s.u.)	DO (mg/L)	COND (umhos/cm)	(+/-) ORP (mV)	Turbidity (NTU)
295 Begin Purge →	0937	4.0	31.31	38.0						
	0942		34.50		15.3	7.25	8.9	411	345	—
28L	0944	6.0	34.60		15.5	7.3	9.0	411	351	—
60L	0954	6.0	34.70		15.5	7.3	8.8	417	352	—
148L 60L	1004	6.0	34.74		15.5	7.4	8.7	421	353	—
30L	1009	6.0	34.76		15.5	7.3	8.7	435	350	—
208L 30L	1014	6.0	34.77		15.5	7.3	8.8	449	350	—
30L	1019	6.0	34.77		15.6	7.3	8.8	460	350	—
30L	1024	6.0	34.78		15.6	7.3	8.8	467	354	—
30L	1029	6.0	34.78		15.6	7.2	8.8	468	355	—

Remarks:

Reviewed By: _____ Survey Leader 04-07-08 Date _____ Project Leader 04-09-08 Date

Sample Collector: WFN

Sample Date			Time
Year	Month	Day	
08	04	07	1029 (ET) CT

Pump Duration 52 min 72004

"999" = 2 days

Sample Readings

Analysis Time (ET) CT	Pump Rate (L/min) 4193	Depth to Water (m)	Pump Depth (m) 4192	Temp °C 10	pH (s.u.) 400	DO (mg/L) 300	COND (umhos/cm) 94	(+/-) ORP (mV) 90	Turbidity (NTU)
1029	6.0	34.78	38.0	15.6	7.2	8.8	468	355	—
	Pump Rate	Depth to Water	Pump Depth	Temp	pH	DO	COND	(+/-) ORP	Turbidity
	(L/min)	(m)	(m)	°C	(s.u.)	(mg/L)	(umhos/cm)	(mV)	(NTU)
	EPA 170.1	EPA 150.1	EPA 360.1	EPA 120.1	SM 2580B	EPA 180.1			

Additional Sample Data

Analyst: WFN

Date Analyzed: Year 08 Month 04 Day 07

Turbidity 1350: ☐ Clear ☐ Turbid ☑ Slightly Turbid ☐ Highly Turbid

Color: CLOUDY/TAN

Odor: NONE

—	211	—	14
415	431	436	437
Phenol Alkalinity mg/L (EPA 310.1)	Total Alk. mg/L (EPA 310.1)	Mineral Acidity mg/L (EPA 305.1)	CO_2 Acidity mg/L (EPA 305.1)
Time: —	Time: 1430	Time: —	Time: 1438
Initial: —	Initial: WFN	Initial: —	Initial: WFN

Well Diameter (mm)		Vol. Factor (L/m)
12.7	(0.5 in)	0.127
51	(2 in)	2.027
76	(3 in)	4.560
102	(4 in)	8.107
127	(5 in)	12.668
153	(6 in)	18.228

Bottles Required: ☐ BOD ☐ COD ☐ TOC ☑ TIC ☐ Ferrous ☑ Metals ☐ Dis. Metals ☑ Mineral ☐ Dis. Mineral ☑ Nutrient ☐ Phenol ☐ Filt TIC ☐ TSS/TDS

Others (list): FQ

TVA 30066A (9-1999) 112.43 128.55

Distribution: (1) Original - Data Mgmt. (2) Pink - Survey Leader (3) Blue - Project Manager (4) Green - Customer (5) Yellow - ERS Files

Preliminary Groundwater Data Field Worksheet

Sheet 1 of 1

Project/Site	Well Number	Purge Date	Year	Month	Day
KIF	G3A 84068		08	03	25

Depth to Water (m)	Bottom of Well (m)	Well Diameter (mm)	Survey Leader	Field Crew
3.7 4195	9.74 4194	51 4188	JES	WFN

☑ Depth of Screen ☐ Open Bore Hole

(m)	To	(m)	Sample Label	Filter Type and Size:
6.6 4191	To	9.6 4190	KIF-G3A-0308	☑ Unfiltered ☐ Filtered ☐ Both

[Bottom of Well - Depth to Water] x Volume Factor =	Well Volume	Target Purge Volume	Actual Purge Volume
[(9.74)m - (3.7)m] x (2.027)L/m =	12.2 (L)	24.4 (L)	27 (L) 4186

Purge Pump: ☐ Bladder ☑ Centrifugal ☐ Peristaltic ☐ Dedicated Other (list):

Sample Pump: ☐ Bladder ☑ Centrifugal ☐ Peristaltic ☐ Dedicated Other (list):

Notes and WQ Observations	Time ET CT	Pump Rate (L/min)	Depth to Water (m)	Pump Depth (m)	Temp °C	pH (s.u.)	DO (mg/L)	COND (umhos/cm)	(+/-) ORP (mV)	Turbidity (NTU)
130 112 **Begin Purge →**	1353	3.25		9						
6.5	1355	↓	5.47	9	15.1	6.2	2.2	197	528	—
9	1357	2.0	5.62	9	15.4	6.1	2.3	235	526	—
	1359			9	15.7	6.2	2.2	217	535	—
17	1401	↓ 1.6	5.95	9	15.8	6.1	2.1	213	530	—
20	1403		6.11	9	15.8	6.1	1.9	195	522	—
23.5	1405	1.75 ↓		9	15.9	6.0	1.7	205	531	—
27	1407		6.15	9	16.0	6.0	1.8	207	527	—

Remarks: Collected in settling container - decanted later

Reviewed By: James E. Stockburger 3/27/08 (Survey Leader / Date) Matthew Webb 03/28/08 (Project Leader / Date)

Sample Collector: WFN/JES		
Sample Date		Time
Year 08	Month 03 / Day 25	1407 ET CT
Pump Duration: 14 min 72004		

"999" = 2 days

Sample Readings

Analysis Time ET CT	Pump Rate (L/min)	Pump Depth (m)	Temp °C EPA 170.1	pH (s.u.) EPA 150.1	DO (mg/L) EPA 360.1	COND (umhos/cm) EPA 120.1	(+/-) ORP (mv) SM 2580B	Turbidity (NTU) EPA 180.1
1407	1.75 4193	9 4192	16 10	6 400	1.8 300	207 94	527 90	—

Additional Sample Data

Analyst: JES

Date Analyzed	415 Phenol Alkalinity mg/L (EPA 310.1)	431 Total Alk. mg/L (EPA 310.1)	436 Mineral Acidity mg/L (EPA 305.1)	437 CO_2 Acidity mg/L (EPA 305.1)
Year 08 / Month 03 / Day 25		90		53
	Time:	Time: 1628	Time:	Time: 1731
	Initial:	Initial: JES	Initial:	Initial: JES

Turbidity 1350: ☐ Clear ☐ Slightly Turbid ☑ Turbid ☐ Highly Turbid

Color: Brown

Odor: —

Bottles Required: ☐ BOD ☐ TOC ☐ COD ☑ TIC ☐ Ferrous ☑ Metals ☐ Dis. Metals ☑ Mineral ☐ Dis. Mineral ☑ Nutrient ☐ Phenol ☐ Filt TIC ☐ TSS/TDS

Others (list): F

Well Diameter (mm)		Vol. Factor (L/m)
12.7	(0.5 in)	0.127
51	(2 in)	2.027
76	(3 in)	4.560
102	(4 in)	8.107
127	(5 in)	12.668
153	(6 in)	18.228

TVA 30066A [2-2008]

Preliminary Groundwater Data Field Worksheet

Sheet 1 of 2

Project/Site	Well Number	Purge Date	Year	Month	Day
KIF	GOSB 84068		08	03	~~25~~ 26 JES

Depth to Water (m)	Bottom of Well (m)	Well Diameter (mm)	Survey Leader	Field Crew
3.92 4195	19.19 4194	51 4188	JES	WFN

☑ Depth of Screen ☐ Open Bore Hole

(m)	To	(m)	Sample Label	Filter Type and Size:
12.8 4191	To	18.9 4190	KIF-G3B-0308	☑ Unfiltered ☐ Filtered ☐ Both

[Bottom of Well - Depth to Water] x Volume Factor =	Well Volume	Target Purge Volume	Actual Purge Volume
[(19.19)m - (3.92)m] x (2.027)L/m =	31 (L)	62 (L)	See page 2 (L) 4186

Purge Pump: ☐ Bladder ☑ Centrifugal ☐ Peristaltic ☐ Dedicated Other (list):

Sample Pump: ☐ Bladder ☑ Centrifugal ☐ Peristaltic ☐ Dedicated Other (list):

Notes and WQ Observations	Time (ET) CT	Pump Rate (L/min)	Depth to Water (m)	Pump Depth (m)	Temp °C	pH (s.u.)	DO (mg/L)	COND (umhos/cm)	(+/-) ORP (mV)	Turbidity (NTU)
135 Hz Begin Purge →	1245	2.0	3.92	17						
	1247	↓	5.91	17	15.0	7.1	4.4	290	555	—
10	1250	1.2 ↓	8.47	17	15.3	7.1	5.3	262	544	—
16	1255	↓ 0.36	10.10	17	15.8	7.2	5.4	120	535	—
17.8 135 Hz	1300	0.73 ↓	10.63	17	16.0	7.2	5.3	432	521	
20	1303	↓ 0.43	11.47	17	17.7	7.2	4.8	440	518	—
	1305	↓	—	17	17.5	7.2	4.6	438	515	—
23	1310	↓ 0.4	12.01	17	17.2	7.1	4.3	438	513	—
25 151 Hz	1315	1.25 ↓	12.20	17	17.4	7.1	4.2	444	508	—
30	1319	↓ 1.5	—	17	17.7	7.1	4.1	435	505	—
	1320	↓	13.09	17						
39	13.25	↓	13.46	17	17.2	7.0	3.4	423	509	—
(400 13263) 45	1330	1.0	14.09	17	17.3	7.0	3.1	460	508	—
165 Hz 50	1335	1.4	14.93	17	17.5	7.0	2.9	479	499	—
57 177 Hz	1340	↓	15.91	17	17.4	7.1	2.2	502	491	—

Remarks:

14 4 50

Reviewed By: James Stockburger 03/27/08 Survey Leader Date

Matt Dahl 03/28/08 Project Leader Date

Sample Collector: WFN/JES		
Sample Date		Time
Year 08	Month 03	Day 26
		(ET) CT
Pump Duration: See page 2		min 72004

"999" = 2 days

Sample Readings

Analysis Time (ET) CT	4193 Pump Rate (L/min)	4192 Pump Depth (m)	10 Temp °C EPA 170.1	400 pH (s.u.) EPA 150.1	300 DO (mg/L) EPA 360.1	94 COND (umhos/cm) EPA 120.1	90 (+/-) ORP (mv) SM 2580B	Turbidity (NTU) EPA 180.1

Additional Sample Data

Analyst:	415 Phenol Alkalinity mg/L (EPA 310.1)	431 Total Alk. mg/L (EPA 310.1)	436 Mineral Acidity mg/L (EPA 305.1)	437 CO_2 Acidity mg/L (EPA 305.1)
Date Analyzed: Year / Month / Day	Time:	Time:	Time:	Time:
Turbidity 1350: ☐ Clear ☐ Slightly Turbid ☐ Turbid ☐ Highly Turbid	Initial:	Initial:	Initial:	Initial:
Color:				
Odor:				

Well Diameter (mm)		Vol. Factor (L/m)
12.7	(0.5 in)	0.127
51	(2 in)	2.027
76	(3 in)	4.560
102	(4 in)	8.107
127	(5 in)	12.668
153	(6 in)	18.228

Bottles Required: ☐ BOD ☐ TOC ☐ COD ☐ TIC ☐ Ferrous ☐ Metals ☐ Dis. Metals ☐ Mineral ☐ Dis. Mineral ☐ Nutrient ☐ Phenol ☐ Filt TIC ☐ TSS/TDS

Others (list):

TVA 30066A [2-2008]

Preliminary Groundwater Data Field Worksheet

Sheet 2 of 2

Project/Site	Well Number	Purge Date	Year	Month	Day
KIF	G3B 84068		08	03	25

Depth to Water (m)	Bottom of Well (m)	Well Diameter (mm)	Survey Leader	Field Crew
3.92 4195	19.19 4194	51 4188	JES	WFN

☒ Depth of Screen ☐ Open Bore Hole

(m)	To	(m)	Sample Label	
12.8 4191	To	18.9 4190	KIF-G3B-0308	☒ Unfiltered ☐ Filtered ☐ Both; Filter Type and Size:

[Bottom of Well - Depth to Water] x Volume Factor =	Well Volume (L)	Target Purge Volume (L)	Actual Purge Volume (L)
[(19.19)m - (3.92)m] x (2.027)L/m =	31	62	62 4186

Purge Pump: ☐ Bladder ☒ Centrifugal ☐ Peristaltic ☐ Dedicated Other (list):

Sample Pump: ☐ Bladder ☒ Centrifugal ☐ Peristaltic ☐ Dedicated Other (list):

	Notes and WQ Observations	Time (ET) CT	Pump Rate (L/min)	Depth to Water (m)	Pump Depth (m)	Temp °C	pH (s.u.)	DO (mg/L)	COND (umhos/cm)	(+/-) ORP (mV)	Turbidity (NTU)
	Begin Purge →	~~1344~~ 1344	~~5~~	16.4	17	16.8	7.2	1.4	520	477	—
125Hz	3/26/08 →	1229	3.0	4.05	12	Resume Pumping —					
120Hz	3	1230	2.0	5.58	12	15.9	7.4	9.6	412	513	—
	7	1232	1.5	7.07	12	16.0	7.3	9.3	413	519	—
	8.5	1233	-	7.70	12	16.2	7.3	9.2	414	521	—

Remarks: only recovered to 15.6m by 14:14, LEFT OVERNIGHT TO RECHARGE —
★ NOTE: PUMPING RESUMED ON 3/26/08 AFTER A 3/25/08 PURGE ★

Reviewed By: [signature] 03/27/08 — Survey Leader, Date; [signature] 03/28/08 — Project Leader, Date

Sample Collector: WFN/JES

Sample Date Year	Month	Day	Time
08	03	26	1233 (ET) CT

Pump Duration: 999 min 72004 ("999" = 2 days)

Sample Readings

Analysis Time (ET) CT	Pump Rate (L/min) 4193	Pump Depth (m) 4192	Temp °C EPA 170.1 (10)	pH (s.u.) EPA 150.1 (400)	DO (mg/L) EPA 360.1 (300)	COND (umhos/cm) EPA 120.1 (94)	(+/-) ORP (mv) SM 2580B (90)	Turbidity (NTU) EPA 180.1
1233	1.5	12	16.2	7.3	9.2	414	521	—

Additional Sample Data

Analyst: JES

Date Analyzed: Year 08 Month 03 Day 26

	415 Phenol Alkalinity mg/L (EPA 310.1)	431 Total Alk. mg/L (EPA 310.1)	436 Mineral Acidity mg/L (EPA 305.1)	437 CO_2 Acidity mg/L (EPA 305.1)
Value	/	171	/	12
Time:		1618		1508
Initial:		JES		JES

Well Diameter (mm)		Vol. Factor (L/m)
12.7	(0.5 in)	0.127
51	(2 in)	2.027
76	(3 in)	4.560
102	(4 in)	8.107
127	(5 in)	12.668
153	(6 in)	18.228

Turbidity 1350: ☒ Clear ☐ Slightly Turbid ☐ Turbid ☐ Highly Turbid

Color: —

Odor: —

Bottles Required: ☐ BOD ☐ COD ☐ TOC ☒ TIC ☐ Ferrous ☒ Metals ☐ Dis. Metals ☒ Mineral ☐ Dis. Mineral ☒ Nutrient ☐ Phenol ☐ Filt TIC ☐ TSS/TDS

Others (list): F

TVA 30066A [2-2008]

TVA-00025425

Preliminary Groundwater Data Field Worksheet

Sheet 1 of 1

Project/Site	Well Number	Purge Date	Year	Month	Day
KIF	G4B 84068		08	03	26

Depth to Water (m)	Bottom of Well (m)	Well Diameter (mm)	Survey Leader	Field Crew
8.87 4195	25.02 4194	51 4188	JES	WFN

☑ Depth of Screen ☐ Open Bore Hole

	(m)	To	(m)	Sample Label	Filter Type and Size:
	18.8 4191		24.9 4190	KIF-G4B-0308 / KIF-G4B-0308-Dup	☑ Unfiltered ☐ Filtered ☐ Both

[Bottom of Well - Depth to Water]	x	Volume Factor	=	Well Volume	Target Purge Volume	Actual Purge Volume
[(25.02)m - (8.87)m]	x	(2.027)L/m	=	32.7 (L)	65.4 (L)	66 (L) 4186

Purge Pump: ☐ Bladder ☑ Centrifugal ☐ Peristaltic ☐ Dedicated Other (list):
Sample Pump: ☐ Bladder ☑ Centrifugal ☐ Peristaltic ☐ Dedicated Other (list):

Notes and WQ Observations	Time (ET) CT	Pump Rate (L/min)	Depth to Water (m)	Pump Depth (m)	Temp °C	pH (s.u.)	DO (mg/L)	COND (umhos/cm)	(+/-) ORP (mV)	Turbidity (NTU)
Begin Purge →	1010	1.4	8.87	24						
140 HZ water hits bucket	1011	1.4		24	14.9	6.9	4.9	777	477	—
	1015	~~0.9~~	10.59	24	16.0	7.0	1.0	776	279	—
10	1018	0.9	11.17	24	16.3	7.0	0.8	766	263	—
14.5	1023	0.68	11.67	24	16.7	7.0	0.7	797	231	—
145 HZ 19.3	1030	0.78	12.12	24	17.3	7.0	0.7	825	212	—
(24) 20 @ 10:32	1036	0.7	12.89	24	17.7	7.0	0.6	836	188	—
155 HZ 27.5	1041	1.0	13.22	24	17.8	7.0	0.6	835	188	—
30@10:44 32.5	1046	0.8	14.11	24	17.8	6.9	0.5	835	179	—
160 HZ 36.5	1051	0.9	14.59	24	18.0	6.9	0.5	836	181	—
41	1056	1.0	15.5	24	18.0	6.9	0.5	848	184	—
170 HZ 46	1101	1.3	16.1	24	18.3	6.9	0.5	850	180	—
51@1104 52.5	1106	0.9	16.96	24	18.0	6.9	0.4	862	181	—
180 HZ 57	1111	1.2	17.42	24	18.2	6.9	0.5	864	196	—
63	1116	1.5	18.60	24	18.1	6.9	0.4	888	184	—
Remarks: 66	1118		18.87	24	18.1	6.9	0.4	881	190	—

← Duplicate Samples

Reviewed By: [signature] Survey Leader 03/27/08 Date [signature] Project Leader 03/28/08 Date

Sample Collector: WFN

Sample Date			Time	
Year	Month	Day	(ET)	CT
08	03	26		

Pump Duration: 68 min 72004

"999" = 2 days

Sample Readings

Analysis Time (ET) CT	Pump Rate (L/min)	Pump Depth (m)	Temp °C EPA 170.1	pH (s.u.) EPA 150.1	DO (mg/L) EPA 360.1	COND (umhos/cm) EPA 120.1	(+/-) ORP (mv) SM 2580B	Turbidity (NTU) EPA 180.1
1118	1.5	24	18.1	6.9	0.4	881	190	—
	4193	4192	10	400	300	94	90	

Additional Sample Data

Analyst: JES

Date Analyzed		
Year	Month	Day
08	03	26

Turbidity 1350: ☑ Clear ☐ Slightly Turbid ☐ Turbid ☐ Highly Turbid

Color: —
Odor: —

415 Phenol Alkalinity mg/L (EPA 310.1)	431 Total Alk. mg/L (EPA 310.1)	436 Mineral Acidity mg/L (EPA 305.1)	437 CO_2 Acidity mg/L (EPA 305.1)
	422 | 417		68 | 73
Time:	Time: 1611 | 1605	Time:	Time: 1524 | 1535
Initial:	Initial: JES | JES	Initial:	Initial: JES | JES

Well Diameter (mm)		Vol. Factor (L/m)
12.7	(0.5 in)	0.127
51	(2 in)	2.027
76	(3 in)	4.560
102	(4 in)	8.107
127	(5 in)	12.668
153	(6 in)	18.228

Bottles Required: ☐ BOD ☐ TOC ☐ COD ☑ TIC ☐ Ferrous ☑ Metals ☐ Dis. Metals ☑ Mineral ☐ Dis. Mineral ☑ Nutrient ☐ Phenol ☐ Filt TIC ☐ TSS/TDS

Others (list): F

TVA 30066A [2-2008]

TVA-00025426

Preliminary Groundwater Data Field Worksheet

Sheet 1 of 1

Project/Site	Well Number	Purge Date	Year	Month	Day
KIF	G5A 84068		08	03	25

Depth to Water (m)	Bottom of Well (m)	Well Diameter (mm)	Survey Leader	Field Crew
6.65 4195	8.57 4194	51 4188	JES	WFN

☑ Depth of Screen ☐ Open Bore Hole

	(m)	To	(m)	Sample Label	
5.7	4191	To	8.7 4190	KIF-G5A-0308	☑ Unfiltered ☐ Filtered ☐ Both Filter Type and Size:

[Bottom of Well - Depth to Water]	x	Volume Factor	=	Well Volume	Target Purge Volume	Actual Purge Volume
[(8.57)m - (6.65)m]	x	(2.027)L/m	=	3.9 (L)	7.8 (L)	10.6 (L) 4186

Purge Pump: ☐ Bladder ☑ Centrifugal ☐ Peristaltic ☐ Dedicated Other (list):

Sample Pump: ☐ Bladder ☑ Centrifugal ☐ Peristaltic ☐ Dedicated Other (list):

Notes and WQ Observations	Time (ET) CT	Pump Rate (L/min)	Depth to Water (m)	Pump Depth (m)	Temp °C	pH (s.u.)	DO (mg/L)	COND (umhos/cm)	(+/-) ORP (mV)	Turbidity (NTU)
Begin Purge →	1326		6.65	7.5						
water hits eql.	1328	2.1		7.5	14.4	6.6	5.0	155	582	
1250 HZ	1330		6.66	7.5	15.6	6.4	4.4	163	576	—
8.5	1332	2.1		7.5	15.8	6.5	4.7	159	573	-
10.6	1333			7.5	15.9	6.5	5.0	175	571	—

Remarks:- very slight turbidity.

Reviewed By: Survey Leader 03/27/08 Date — Project Leader 03/28/08 Date

Sample Collector: WFN		
Sample Date		Time
Year 08	Month 03	Day 25
Pump Duration: 7 min		1333 (ET) CT

"999" = 2 days

Sample Readings

Analysis Time (ET) CT	Pump Rate (L/min)	Pump Depth (m)	Temp °C EPA 170.1	pH (s.u.) EPA 150.1	DO (mg/L) EPA 360.1	COND (umhos/cm) EPA 120.1	(+/-) ORP (mv) SM 2580B	Turbidity (NTU) EPA 180.1
1333	2.1	7.5	15.9	6.5	5.0	175	571	—
	4193	4192	10	400	300	94	90	

Additional Sample Data

Analyst: JES		149		38	Well Diameter (mm)	Vol. Factor (L/m)
Date Analyzed	415	431	436	437	12.7 (0.5 in)	0.127
Year 08 Month 03 Day 25	Phenol Alkalinity mg/L (EPA 310.1)	Total Alk. mg/L (EPA 310.1)	Mineral Acidity mg/L (EPA 305.1)	CO_2 Acidity mg/L (EPA 305.1)	51 (2 in)	2.027
Turbidity 1350 ☐ Clear ☑ Slightly Turbid ☐ Turbid ☐ Highly Turbid	Time:	Time: 1636	Time:	Time: 1724	76 (3 in)	4.560
	Initial:	Initial: JES	Initial:	Initial: JES	102 (4 in)	8.107
					127 (5 in)	12.668
					153 (6 in)	18.228

Color: TAN

Odor: —

Bottles Required: ☐ BOD ☐ TOC ☐ COD ☑ TIC ☐ Ferrous ☑ Metals ☐ Dis. Metals ☑ Mineral ☐ Dis. Mineral ☑ Nutrient ☐ Phenol ☐ Filt TIC ☐ TSS/TDS

Others (list): F

TVA 30066A [2-2008]

Preliminary Groundwater Data Field Worksheet

Sheet 1 of 1

Project/Site	Well Number	Purge Date	Year	Month	Day
KIF	GSB 84068		08	03	25

Depth to Water (m)	Bottom of Well (m)	Well Diameter (mm)	Survey Leader	Field Crew
6.51 4195	18.36 4194	51 4188	JES	WFN

☑ Depth of Screen ☐ Open Bore Hole

(m)	To	(m)	Sample Label	
12 4191	To	18.1 4190	KIF-GSB-0308	☑ Unfiltered ☐ Filtered ☐ Both Filter Type and Size:

[Bottom of Well - Depth to Water] x Volume Factor =	Well Volume	Target Purge Volume	Actual Purge Volume
[(18.36)m - (6.51)m] x (2.027)L/m =	24 (L)	48 (L)	54.5 (L) 4186

Purge Pump: ☐ Bladder ☑ Centrifugal ☐ Peristaltic ☐ Dedicated Other (list):

Sample Pump: ☐ Bladder ☑ Centrifugal ☐ Peristaltic ☐ Dedicated Other (list):

Notes and WQ Observations	Time (ET) CT	Pump Rate (L/min)	Depth to Water (m)	Pump Depth (m)	Temp °C	pH (s.u.)	DO (mg/L)	COND (umhos/cm)	(+/-) ORP (mV)	Turbidity (NTU)
140Hz Begin Purge →	1053	3.0	6.51	17	—	—	—	—	—	—
	1055		7.33	17	15.3	7.2	2.0	494	469	—
10@1057	1100	2.5	7.11	17	16.3	7.2	0.8	528	440	—
18.5	1105		7.10	17	16.4	7.1	4.3	399	493	—
20@110030	1110	2.9	7.09	17	16.4	7.0	6.2	361	531	—
30@1104 40@1108	1113	2.9	7.09	17	16.4	7.0	6.6	354	541	—
54.5 total										

Remarks:

Reviewed By: [signature] 03/27/08 Survey Leader Date [signature] Project Leader 03/28/08 Date

Sample Collector: WFN

Sample Date Year	Month	Day	Time
08	03	25	1113 (ET) CT

Pump Duration: 20 min 72004

"999" = 2 days

Sample Readings

Analysis Time (ET) CT	Pump Rate (L/min) 4193	Pump Depth (m) 4192	Temp °C EPA 170.1 (10)	pH (s.u.) EPA 150.1 (400)	DO (mg/L) EPA 360.1 (300)	COND (umhos/cm) EPA 120.1 (94)	(+/-) ORP (mv) SM 2580B (90)	Turbidity (NTU) EPA 180.1
1113	2.9	17	16.4	7.0	6.6	354	541	—

Additional Sample Data

Analyst: JES

Date Analyzed: Year 08 Month 03 Day 25

	415 Phenol Alkalinity mg/L (EPA 310.1)	431 Total Alk. mg/L (EPA 310.1)	436 Mineral Acidity mg/L (EPA 305.1)	437 CO_2 Acidity mg/L (EPA 305.1)
Value	/	171	/	15
Time		1645		1716
Initial		JES		JES

Well Diameter (mm)		Vol. Factor (L/m)
12.7	(0.5 in)	0.127
51	(2 in)	2.027
76	(3 in)	4.560
102	(4 in)	8.107
127	(5 in)	12.668
153	(6 in)	18.228

Turbidity 1350: ☐ Clear ☑ Slightly Turbid ☐ Turbid ☐ Highly Turbid

Color: TAN

Odor: —

Bottles Required: ☐ BOD ☐ COD ☐ TOC ☑ TIC ☐ Ferrous ☑ Metals ☐ Dis. Metals ☑ Mineral ☐ Dis. Mineral ☑ Nutrient ☐ Phenol ☐ Filt TIC ☐ TSS/TDS

Others (list): F

TVA 30066A [2-2008]

Preliminary Groundwater Data Field Worksheet

Sheet 1 of 1

Project/Site	Well Number	Purge Date	Year	Month	Day
KIF	G6B 84068		08	03	25

Depth to Water (m)	Bottom of Well (m)	Well Diameter (mm)	Survey Leader	Field Crew
11.01 4195	18.19 4194	51 4188	JES	WWN

☑ Depth of Screen ☐ Open Bore Hole

(m)	To	(m)	Sample Label	
11.9 4191	To	18 4190	KIF-G6B-0308	☑ Unfiltered ☐ Filtered ☐ Both Filter Type and Size:

[Bottom of Well - Depth to Water] x Volume Factor =	Well Volume	Target Purge Volume	Actual Purge Volume
[(18.19)m - (11.01)m] x (2.027)L/m =	14.55 (L)	29.1 (L)	30.4 (L) 4186

Purge Pump: ☐ Bladder ☑ Centrifugal ☐ Peristaltic ☐ Dedicated Other (list):
Sample Pump: ☐ Bladder ☑ Centrifugal ☐ Peristaltic ☐ Dedicated Other (list):

	Notes and WQ Observations	Time (ET) CT	Pump Rate (L/min)	Depth to Water (m)	Pump Depth (m)	Temp °C	pH (s.u.)	DO (mg/L)	COND (umhos/cm)	(+/-) ORP (mV)	Turbidity (NTU)
150Hz	Begin Purge →	940	2.1	11.01	17						
	Stop-	942									
150	Resume	953			17						
140		954			17	15.4	6.8	6.1	614	438	—
	6.2L.	956	1.2	11.07	17	15.2	6.8	6.3	611	465	—
	10	1000	1.3	11.07	17	15.9	6.8	6.6	617	478	—
	16	1005	1.2	11.07	17	16.2	6.8	6.7	610	501	—
	22	1010	1.2	11.07	17	16.4	6.9	6.6	609	510	—
	28	1015	1.2	11.07	17	16.4	6.9	6.3	603	515	—
	30.4	1017	1.2	11.07	17	16.5	6.9	6.3	601	514	—

Remarks:

Reviewed By: [signature] Survey Leader 03/27/08 Date [signature] Project Leader 03/28/08 Date

Sample Collector: WFN

Sample Date Year	Month	Day	Time (ET) CT
08	03	25	

Pump Duration: 37 min 72004
"999" = 2 days

Sample Readings

Analysis Time (ET) CT	Pump Rate (L/min)	Pump Depth (m)	Temp °C EPA 170.1	pH (s.u.) EPA 150.1	DO (mg/L) EPA 360.1	COND (umhos/cm) EPA 120.1	(+/-) ORP (mv) SM 2580B	Turbidity (NTU) EPA 180.1
	4193	4192	10	400	300	94	90	
1017	1.2	17	16.5	6.9	6.3	601	514	—

Additional Sample Data

Analyst: JES

Date Analyzed: Year 08 Month 03 Day 25

	415 Phenol Alkalinity mg/L (EPA 310.1)	431 Total Alk. mg/L (EPA 310.1)	436 Mineral Acidity mg/L (EPA 305.1)	437 CO_2 Acidity mg/L (EPA 305.1)
Value	/	311	/	33
Time:		1655		1706
Initial:		JES		JES

Well Diameter (mm)		Vol. Factor (L/m)
12.7	(0.5 in)	0.127
51	(2 in)	2.027
76	(3 in)	4.560
102	(4 in)	8.107
127	(5 in)	12.668
153	(6 in)	18.228

Turbidity 1350: ☐ Clear ☑ Slightly Turbid ☐ Turbid ☐ Highly Turbid

Color: TAN

Odor: —

Bottles Required: ☐ BOD ☐ COD ☐ TOC ☑ TIC ☐ Ferrous ☑ Metals ☐ Dis. Metals ☑ Mineral ☐ Dis. Mineral ☑ Nutrient ☐ Phenol ☐ Filt TIC ☐ TSS/TDS

Others (list): 7

TVA 30066A [2-2008]

APPENDIX B

SAMPLE CUSTODY RECORD

TVA-ENVAFF (ENVIRONMENTAL AFFAIRS)

Alternate billing information: CYNTHIA ANDERSON cmanders@tva.gov

Report to: J. MARK BOGGS

Email to: jmboggs@tva.gov

Chain of Custody Page ___ of ___

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

Project Description: ~~BRF~~ KIF GROUNDWATER

City/State Collected: KINGSTON

Phone: (865) 632-6941
FAX: (865) 632-8212

Client Project #:

ESC Key:

Collected by: DILL NICHOLS AND Jim STOCKBURGER

Site/Facility ID#: 0014DOM

P.O.#:

Collected by (signature): [signature]

Packed on Ice N (Y)

Rush? (Lab MUST Be Notified)
___ Same Day.......200%
___ Next Day.......100%
___ Two Day........50%

Date Results Needed: STANDARD
Email? __No__Yes
FAX? __No__Yes

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	INORGANIC CARBON	SUSPENDED SOLIDS	SILVER by ICPMS, ALUMINUM *SEE ATTACHED	NITRATE-NITRITE, KJELDAHL	AMMONIA NITROGEN	TDS	CHLORIDE by IC, FLUORIDE by IC	Remarks/Contaminant	Sample # (lab only)
KIF-G3A-0308	GRAB	GW		3/25/08	1407	7	1	1	1	1	1	1	1	EDD	L338389-01
KIF-G3B-0308		GW		3/26/08	1233	7	1	1	1	1	1	1	1	EDD	02
KIF-G4B-0308		GW		3/26/08	1118	7	1	1	1	1	1	1	1	EDD	03
KIF-G4B-0308-DUP		GW		3/26/08	1118	7	1	1	1	1	1	1	1	EDD	04
KIF-G5A-0308		GW		3/25/08	1333	7	1	1	1	1	1	1	1	EDD	05
KIF-G5B-0308		GW		3/25/08	1113	7	1	1	1	1	1	1	1	EDD	06
KIF-G6B-0308		GW		3/25/08	1017	7	1	1	1	1	1	1	1	EDD	07
KIF-EQBLANK-0308		GW		3/26/08	0900	7	1	1	1	1	1	1	1	EDD	08

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH ______ Temp ______

Flow ______ Other ______

Remarks: RECD WITH SEAL INTACT [initials] 3/28/08 1700

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)		
[signature]	3/27/08	12:00		Samples returned via: ☐ UPS ☐ FedEx ☑ Courier ☐	Condition: (lab use only) OK
Relinquished by: (Signature) [signature]	3/28/08	1200	Received by: (Signature) [signature]	Temp: 2.1 C / Bottles Received: 56	
Relinquished by: (Signature) [signature]	3/28/08	1250	Received for lab by: (Signature) [signature]	Date: 3-28-08 / Time: 12:50	pH Checked: LL / NCF:

TVA-ENVAFF (ENVIRONMENTAL AFFAIRS)

Alternate billing information:
Cynthia Anderson
cmanders@tva.gov

Report to: J. Mark Boggs

Email to: jmboggs@tva.gov

Project Description: KIF Groundwater

City/State Collected: Kingston, TN

Phone: 865-632-6941
FAX: 865-632-8212

Client Project #:

ESC Key:

Collected by: Sam Grindstaff

Site/Facility ID#: 0014D0M

P.O.#:

Collected by (signature):

Packed on Ice N (Y)

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes

FAX? __No ✓Yes

Analysis/Container/Preservative

Chain of Custody Page 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)

Template/Prelogin

Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	INORGANIC CARBON	SUSPENDED SOLIDS	SILVER by ICPMS, ALUMINUM + *SEE ATTACHED	NITRATE - NITRITE, KJELDAHL	AMMONIA NITROGEN	TDS	CHLORIDE by IC, FLUORIDE by IC		Remarks/Contaminant	Sample # (lab only)
KIF-G1A-0308	Grab	GW	x	04/07/08	1029	7	x	x	x	x	x	x	x		EDD	L340135-01

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks:

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____	Condition: (lab use only)
	04/07/08	1522			
Relinquished by: (Signature)	Date: 4/9/08	Time: 900	Received by: (Signature) Wayne Shull	Temp: 3.2 / Bottles Received: 7	
Relinquished by: (Signature) Wayne Shull	Date: 4/9/08	Time: 1455	Received for lab by: (Signature) Matt Branch	Date: 4-9-08 / Time: 1455	pH Checked: <2 / NCF: Yes

COC Seal Intact yes

APPENDIX C

LABORATORY DATA SHEETS

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop WT9D

Knoxville, TN

Report Summary

Wednesday April 09, 2008

Report Number: L338389
Samples Received: 03/28/08
Client Project: Kingston

Description: KIF Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Roberto Celia, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

ENVIRONMENTAL SCIENCE CORP.

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 09,2008

Date Received : 03/28/08 12:50
Description : KIF Groundwater

Sample ID : KIF-G3A-0308

Collected By : BN-JS
Collection Date : 03/25/08 14:07

ESC Sample # : L338389-01

Site ID : 0014DOM

Project # : Kingston

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Chloride	2.6	1.0	mg/l	9056	03/28/08 1645	159	03/29/08 1546	MCH
Fluoride	BDL	0.10	mg/l	9056	03/28/08 1645	159	03/29/08 1546	MCH
Sulfate	10.	5.0	mg/l	9056	03/28/08 1645	159	03/29/08 1546	MCH
Ammonia Nitrogen	BDL	0.10	mg/l	350.1	04/01/08 1452	234	04/02/08 1417	CWP
Nitrate-Nitrite	0.46	0.10	mg/l	353.2	03/31/08 1119	165	03/31/08 0318	LEM
Kjeldahl Nitrogen, TKN	BDL	0.50	mg/l	351.2	04/01/08 1719	98	04/01/08 1657	DTH
Total Inorganic Carbon	40.	1.0	mg/l	9060A	04/03/08 1647	162	04/04/08 1533	ADH
Dissolved Solids	120	10.	mg/l	2540C	03/29/08 1515	193	04/01/08 1016	AMS
Suspended Solids	39.	1.0	mg/l	2540D	03/29/08 1510	193	03/31/08 0739	AMS
Antimony	BDL	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2225	JDB
Arsenic	0.0013	0.0010	mg/l	6020	03/31/08 0855	47	04/02/08 1811	JDB
Cadmium	BDL	0.00050	mg/l	6020	03/31/08 0855	47	03/31/08 2225	JDB
Chromium	0.0038	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2225	JDB
Copper	0.0019	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2225	JDB
Cobalt	0.0011	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2225	JDB
Lead	0.0023	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2225	JDB
Nickel	0.0056	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2225	JDB
Selenium	BDL	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2225	JDB
Silver	BDL	0.00050	mg/l	6020	03/31/08 0855	47	04/02/08 1811	JDB
Thallium	BDL	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2225	JDB
Zinc	0.010	0.010	mg/l	6020	03/31/08 0855	47	03/31/08 2225	JDB
Mercury	BDL	0.00020	mg/l	7470A	03/30/08 0935	253	04/03/08 0956	KBW
Aluminum	1.7	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1621	BGL
Barium	0.018	0.0050	mg/l	6010B	03/28/08 1546	249	03/29/08 1621	BGL
Beryllium	BDL	0.0020	mg/l	6010B	03/28/08 1546	249	03/29/08 1621	BGL
Boron	BDL	0.20	mg/l	6010B	03/28/08 1546	249	03/29/08 1621	BGL
Calcium	21.	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1621	BGL
Iron	1.4	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1621	BGL
Magnesium	12.	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1621	BGL
Manganese	0.23	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1621	BGL
Molybdenum	BDL	0.0050	mg/l	6010B	03/28/08 1546	249	03/29/08 1621	BGL
Potassium	1.6	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1621	BGL

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 09227, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - TN002, WI - 998093910

Notes:
The reported analytical results relate only to the sample submitted

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Est. 1970

REPORT OF ANALYSIS

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 09,2008

ESC Sample # : L338389-01

Site ID : 0014DOM

Project # : Kingston

Date Received : 03/28/08 12:50
Description : KIF Groundwater

Sample ID : KIF-G3A-0308

Collected By : BN-JS
Collection Date : 03/25/08 14:07

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Sodium	2.1	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1621	BGL
Strontium	0.017	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1621	BGL
Vanadium	BDL	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1621	BGL

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 09227, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - TN002, WI - 998093910

Notes:
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Reported: 04/09/08 12:45 Printed: 04/09/08 13:01

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REPORT OF ANALYSIS

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 09,2008

Date Received : 03/28/08 12:50
Description : KIF Groundwater

Sample ID : KIF-GBB-0308

Collected By : BN-JS
Collection Date : 03/26/08 12:33

ESC Sample # : L338389-02

Site ID : 0014DOM

Project # : Kingston

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Chloride	3.2	1.0	mg/l	9056	03/28/08 1645	159	03/29/08 1602	MCH
Fluoride	0.13	0.10	mg/l	9056	03/28/08 1645	159	03/29/08 1602	MCH
Sulfate	39.	5.0	mg/l	9056	03/28/08 1645	159	03/29/08 1602	MCH
Ammonia Nitrogen	0.14	0.10	mg/l	350.1	04/01/08 1452	234	04/02/08 1418	CWP
Nitrate-Nitrite	0.59	0.10	mg/l	353.2	03/31/08 1119	165	03/31/08 0319	LEM
Kjeldahl Nitrogen, TKN	BDL	0.50	mg/l	351.2	04/01/08 1719	98	04/01/08 1658	DTH
Total Inorganic Carbon	48.	1.0	mg/l	9060A	04/03/08 1647	162	04/04/08 1608	ADH
Dissolved Solids	230	10.	mg/l	2540C	03/29/08 1514	193	04/01/08 1036	AMS
Suspended Solids	5.0	1.0	mg/l	2540D	03/29/08 1510	193	03/31/08 0739	AMS
Antimony	BDL	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2228	JDB
Arsenic	BDL	0.0010	mg/l	6020	03/31/08 0855	47	04/02/08 1814	JDB
Cadmium	BDL	0.00050	mg/l	6020	03/31/08 0855	47	03/31/08 2228	JDB
Chromium	0.0052	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2228	JDB
Copper	0.0034	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2228	JDB
Cobalt	BDL	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2228	JDB
Lead	0.0012	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2228	JDB
Nickel	0.0036	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2228	JDB
Selenium	BDL	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2228	JDB
Silver	BDL	0.00050	mg/l	6020	03/31/08 0855	47	04/02/08 1814	JDB
Thallium	BDL	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2228	JDB
Zinc	BDL	0.010	mg/l	6020	03/31/08 0855	47	03/31/08 2228	JDB
Mercury	BDL	0.00020	mg/l	7470A	03/30/08 0935	253	04/03/08 0959	KBW
Aluminum	0.49	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1624	BGL
Barium	0.018	0.0050	mg/l	6010B	03/28/08 1546	249	03/29/08 1624	BGL
Beryllium	BDL	0.0020	mg/l	6010B	03/28/08 1546	249	03/29/08 1624	BGL
Boron	BDL	0.20	mg/l	6010B	03/28/08 1546	249	03/29/08 1624	BGL
Calcium	39.	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1624	BGL
Iron	0.39	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1624	BGL
Magnesium	22.	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1624	BGL
Manganese	0.15	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1624	BGL
Molybdenum	BDL	0.0050	mg/l	6010B	03/28/08 1546	249	03/29/08 1624	BGL
Potassium	1.5	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1624	BGL

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 09227, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - TN002, WI - 998093910

Notes:
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ENVIRONMENTAL
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 09,2008

ESC Sample # : L338389-02

Site ID : 0014DOM

Project # : Kingston

Date Received : 03/28/08 12:50
Description : KIF Groundwater

Sample ID : KIF-GBB-0308

Collected By : BN-JS
Collection Date : 03/26/08 12:33

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Sodium	13.	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1624	BGL
Strontium	0.045	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1624	BGL
Vanadium	BDL	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1624	BGL

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 09227, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - TN002, WI - 998093910

Notes:
The reported analytical results relate only to the sample submitted

Reported: 04/09/08 12:45 Printed: 04/09/08 13:01

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Est. 1970

REPORT OF ANALYSIS

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 09,2008

Date Received : 03/28/08 12:50
Description : KIF Groundwater

Sample ID : KIF-G4B-0308

Collected By : BN-JS
Collection Date : 03/26/08 11:18

ESC Sample # : L338389-03

Site ID : 0014DOM

Project # : Kingston

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Chloride	9.6	1.0	mg/l	9056	03/28/08 1645	159	03/29/08 1619	MCH
Fluoride	0.12	0.10	mg/l	9056	03/28/08 1645	159	03/29/08 1619	MCH
Sulfate	77.	5.0	mg/l	9056	03/28/08 1645	159	03/29/08 1619	MCH
Ammonia Nitrogen	BDL	0.10	mg/l	350.1	04/01/08 1452	234	04/02/08 1419	CWP
Nitrate-Nitrite	BDL	0.10	mg/l	353.2	03/31/08 1119	165	03/31/08 0321	LEM
Kjeldahl Nitrogen, TKN	BDL	0.50	mg/l	351.2	04/01/08 1719	98	04/01/08 1658	DTH
Total Inorganic Carbon	130	10.	mg/l	9060A	04/06/08 1227	162	04/06/08 1352	ADH
Dissolved Solids	580	10.	mg/l	2540C	03/29/08 1514	193	04/01/08 1048	AMS
Suspended Solids	4.7	1.0	mg/l	2540D	03/29/08 1510	193	03/31/08 0739	AMS
Antimony	0.0012	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2231	JDB
Arsenic	0.0023	0.0010	mg/l	6020	03/31/08 0855	47	04/02/08 1817	JDB
Cadmium	BDL	0.00050	mg/l	6020	03/31/08 0855	47	03/31/08 2231	JDB
Chromium	0.0013	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2231	JDB
Copper	0.0087	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2231	JDB
Cobalt	BDL	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2231	JDB
Lead	BDL	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2231	JDB
Nickel	0.0038	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2231	JDB
Selenium	BDL	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2231	JDB
Silver	BDL	0.00050	mg/l	6020	03/31/08 0855	47	04/02/08 1817	JDB
Thallium	BDL	0.0010	mg/l	6020	03/31/08 0855	47	03/31/08 2231	JDB
Zinc	0.031	0.010	mg/l	6020	03/31/08 0855	47	03/31/08 2231	JDB
Mercury	BDL	0.00020	mg/l	7470A	03/30/08 0935	253	04/03/08 1001	KBW
Aluminum	BDL	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1627	BGL
Barium	0.065	0.0050	mg/l	6010B	03/28/08 1546	249	03/29/08 1627	BGL
Beryllium	BDL	0.0020	mg/l	6010B	03/28/08 1546	249	03/29/08 1627	BGL
Boron	BDL	0.20	mg/l	6010B	03/28/08 1546	249	03/29/08 1627	BGL
Calcium	99.	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1627	BGL
Iron	0.63	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1627	BGL
Magnesium	61.	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1627	BGL
Manganese	0.062	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1627	BGL
Molybdenum	0.033	0.0050	mg/l	6010B	03/28/08 1546	249	03/29/08 1627	BGL
Potassium	2.9	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1627	BGL

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 09227, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - TN002, WI - 998093910

Notes:
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REPORT OF ANALYSIS

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 09,2008

Date Received : 03/28/08 12:50
Description : KIF Groundwater

Sample ID : KIF-G4B-0308

Collected By : BN-JS
Collection Date : 03/26/08 11:18

ESC Sample # : L338389-03

Site ID : 0014DOM

Project # : Kingston

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Sodium	4.5	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1627	BGL
Strontium	0.19	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1627	BGL
Vanadium	BDL	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1627	BGL

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 09227, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
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Notes:
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Reported: 04/09/08 12:45 Printed: 04/09/08 13:01

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REPORT OF ANALYSIS

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 09,2008

Date Received : 03/28/08 12:50
Description : KIF Groundwater

Sample ID : KIF-G4B-0308-DUP

Collected By : BN-JS
Collection Date : 03/26/08 11:18

ESC Sample # : L338389-04

Site ID : 0014DOM

Project # : Kingston

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Chloride	10.	1.0	mg/l	9056	03/28/08 1645	159	03/29/08 1635	MCH
Fluoride	0.13	0.10	mg/l	9056	03/28/08 1645	159	03/29/08 1635	MCH
Sulfate	77.	5.0	mg/l	9056	03/28/08 1645	159	03/29/08 1635	MCH
Ammonia Nitrogen	BDL	0.10	mg/l	350.1	04/01/08 1452	234	04/02/08 1422	CWP
Nitrate-Nitrite	BDL	0.10	mg/l	353.2	03/31/08 1119	165	03/31/08 0323	LEM
Kjeldahl Nitrogen, TKN	BDL	0.50	mg/l	351.2	04/01/08 1719	98	04/01/08 1700	DTH
Total Inorganic Carbon	160	10.	mg/l	9060A	04/06/08 1227	162	04/06/08 1422	ADH
Dissolved Solids	550	10.	mg/l	2540C	03/29/08 1514	193	04/01/08 1044	AMS
Suspended Solids	4.8	1.0	mg/l	2540D	03/29/08 1510	193	03/31/08 0739	AMS
Antimony	0.0012	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2016	JDB
Arsenic	0.0024	0.0010	mg/l	6020	03/31/08 0856	47	04/02/08 2017	JDB
Cadmium	BDL	0.00050	mg/l	6020	03/31/08 0856	47	03/31/08 2016	JDB
Chromium	0.0030	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2016	JDB
Copper	0.0098	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2016	JDB
Cobalt	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2016	JDB
Lead	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2016	JDB
Nickel	0.0040	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2016	JDB
Selenium	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2016	JDB
Silver	BDL	0.00050	mg/l	6020	03/31/08 0856	47	04/02/08 2017	JDB
Thallium	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2016	JDB
Zinc	0.037	0.010	mg/l	6020	03/31/08 0856	47	03/31/08 2016	JDB
Mercury	BDL	0.00020	mg/l	7470A	03/30/08 0935	253	04/03/08 1004	KBW
Aluminum	0.10	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1630	BGL
Barium	0.065	0.0050	mg/l	6010B	03/28/08 1546	249	03/29/08 1630	BGL
Beryllium	BDL	0.0020	mg/l	6010B	03/28/08 1546	249	03/29/08 1630	BGL
Boron	BDL	0.20	mg/l	6010B	03/28/08 1546	249	03/29/08 1630	BGL
Calcium	100	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1630	BGL
Iron	0.65	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1630	BGL
Magnesium	59.	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1630	BGL
Manganese	0.060	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1630	BGL
Molybdenum	0.031	0.0050	mg/l	6010B	03/28/08 1546	249	03/29/08 1630	BGL
Potassium	3.2	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1630	BGL

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 09227, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - TN002, WI - 998093910

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REPORT OF ANALYSIS

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 09,2008

Date Received : 03/28/08 12:50
Description : KIF Groundwater

Sample ID : KIF-G4B-0308-DUP

Collected By : BN-JS
Collection Date : 03/26/08 11:18

ESC Sample # : L338389-04

Site ID : 0014DOM

Project # : Kingston

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Sodium	4.4	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1630	BGL
Strontium	0.19	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1630	BGL
Vanadium	BDL	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1630	BGL

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 09227, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - TN002, WI - 998093910

Notes:
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REPORT OF ANALYSIS

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 09,2008

Date Received : 03/28/08 12:50
Description : KIF Groundwater

Sample ID : KIF-G5A-0308

Collected By : BN-JS
Collection Date : 03/25/08 13:33

ESC Sample # : L338389-05

Site ID : 0014DOM

Project # : Kingston

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Chloride	2.5	1.0	mg/l	9056	03/28/08 1645	159	03/29/08 1651	MCH
Fluoride	BDL	0.10	mg/l	9056	03/28/08 1645	159	03/29/08 1651	MCH
Sulfate	BDL	5.0	mg/l	9056	03/28/08 1645	159	03/29/08 1651	MCH
Ammonia Nitrogen	BDL	0.10	mg/l	350.1	04/01/08 1452	234	04/02/08 1423	CWP
Nitrate-Nitrite	2.0	0.10	mg/l	353.2	03/31/08 1120	165	03/31/08 0420	LEM
Kjeldahl Nitrogen, TKN	BDL	0.50	mg/l	351.2	04/01/08 1719	98	04/01/08 1701	DTH
Total Inorganic Carbon	49.	1.0	mg/l	9060A	04/03/08 1647	162	04/04/08 1734	ADH
Dissolved Solids	180	10.	mg/l	2540C	03/29/08 1514	193	04/01/08 1046	AMS
Suspended Solids	5.0	1.0	mg/l	2540D	03/29/08 1510	193	03/31/08 0739	AMS
Antimony	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2020	JDB
Arsenic	BDL	0.0010	mg/l	6020	03/31/08 0856	47	04/02/08 2020	JDB
Cadmium	BDL	0.00050	mg/l	6020	03/31/08 0856	47	03/31/08 2020	JDB
Chromium	0.0027	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2020	JDB
Copper	0.0013	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2020	JDB
Cobalt	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2020	JDB
Lead	0.0013	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2020	JDB
Nickel	0.0020	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2020	JDB
Selenium	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2020	JDB
Silver	BDL	0.00050	mg/l	6020	03/31/08 0856	47	04/02/08 2020	JDB
Thallium	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2020	JDB
Zinc	BDL	0.010	mg/l	6020	03/31/08 0856	47	03/31/08 2020	JDB
Mercury	BDL	0.00020	mg/l	7470A	03/30/08 0935	253	04/03/08 1006	KBW
Aluminum	0.31	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1633	BGL
Barium	0.023	0.0050	mg/l	6010B	03/28/08 1546	249	03/29/08 1633	BGL
Beryllium	BDL	0.0020	mg/l	6010B	03/28/08 1546	249	03/29/08 1633	BGL
Boron	BDL	0.20	mg/l	6010B	03/28/08 1546	249	03/29/08 1633	BGL
Calcium	34.	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1633	BGL
Iron	0.22	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1633	BGL
Magnesium	18.	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1633	BGL
Manganese	0.10	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1633	BGL
Molybdenum	BDL	0.0050	mg/l	6010B	03/28/08 1546	249	03/29/08 1633	BGL
Potassium	1.2	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1633	BGL

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
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KY - 90010, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
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REPORT OF ANALYSIS

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 09,2008

Date Received : 03/28/08 12:50
Description : KIF Groundwater

Sample ID : KIF-G5A-0308

Collected By : BN-JS
Collection Date : 03/25/08 13:33

ESC Sample # : L338389-05

Site ID : 0014DOM

Project # : Kingston

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Sodium	1.5	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1633	BGL
Strontium	0.033	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1633	BGL
Vanadium	BDL	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1633	BGL

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 09227, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - TN002, WI - 998093910

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Reported: 04/09/08 12:45 Printed: 04/09/08 13:01

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400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 09,2008

Date Received : 03/28/08 12:50
Description : KIF Groundwater

Sample ID : KIF-G5B-0308

Collected By : BN-JS
Collection Date : 03/25/08 11:13

ESC Sample # : L338389-06

Site ID : 0014DOM

Project # : Kingston

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Chloride	3.3	1.0	mg/l	9056	03/28/08 1645	159	03/29/08 1708	MCH
Fluoride	BDL	0.10	mg/l	9056	03/28/08 1645	159	03/29/08 1708	MCH
Sulfate	BDL	5.0	mg/l	9056	03/28/08 1645	159	03/29/08 1708	MCH
Ammonia Nitrogen	BDL	0.10	mg/l	350.1	04/01/08 1452	234	04/02/08 1424	CWP
Nitrate-Nitrite	2.1	0.10	mg/l	353.2	03/31/08 1120	165	03/31/08 0422	LEM
Kjeldahl Nitrogen, TKN	BDL	0.50	mg/l	351.2	04/01/08 1719	98	04/01/08 1704	DTH
Total Inorganic Carbon	49.	1.0	mg/l	9060A	04/03/08 1647	162	04/04/08 1750	ADH
Dissolved Solids	210	10.	mg/l	2540C	03/29/08 1514	193	04/01/08 1047	AMS
Suspended Solids	49.	1.0	mg/l	2540D	03/29/08 1510	193	03/31/08 0739	AMS
Antimony	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2023	JDB
Arsenic	0.0010	0.0010	mg/l	6020	03/31/08 0856	47	04/02/08 2023	JDB
Cadmium	BDL	0.00050	mg/l	6020	03/31/08 0856	47	03/31/08 2023	JDB
Chromium	0.0052	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2023	JDB
Copper	0.0027	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2023	JDB
Cobalt	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2023	JDB
Lead	0.0026	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2023	JDB
Nickel	0.0027	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2023	JDB
Selenium	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2023	JDB
Silver	BDL	0.00050	mg/l	6020	03/31/08 0856	47	04/02/08 2023	JDB
Thallium	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2023	JDB
Zinc	BDL	0.010	mg/l	6020	03/31/08 0856	47	03/31/08 2023	JDB
Mercury	BDL	0.00020	mg/l	7470A	03/30/08 0935	253	04/03/08 1009	KBW
Aluminum	0.98	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1650	BGL
Barium	0.014	0.0050	mg/l	6010B	03/28/08 1546	249	03/29/08 1650	BGL
Beryllium	BDL	0.0020	mg/l	6010B	03/28/08 1546	249	03/29/08 1650	BGL
Boron	BDL	0.20	mg/l	6010B	03/28/08 1546	249	03/29/08 1650	BGL
Calcium	37.	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1650	BGL
Iron	0.68	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1650	BGL
Magnesium	21.	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1650	BGL
Manganese	0.036	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1650	BGL
Molybdenum	BDL	0.0050	mg/l	6010B	03/28/08 1546	249	03/29/08 1650	BGL
Potassium	1.3	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1650	BGL

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
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KY - 90010, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
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REPORT OF ANALYSIS

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 09,2008

Date Received : 03/28/08 12:50
Description : KIF Groundwater

Sample ID : KIF-G5B-0308

Collected By : BN-JS
Collection Date : 03/25/08 11:13

ESC Sample # : L338389-06

Site ID : 0014DOM

Project # : Kingston

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Sodium	3.1	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1650	BGL
Strontium	0.039	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 2010	BGL
Vanadium	BDL	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1650	BGL

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
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KY - 90010, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
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REPORT OF ANALYSIS

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 09,2008

Date Received : 03/28/08 12:50
Description : KIF Groundwater

Sample ID : KIF-G6B-0308

Collected By : BN-JS
Collection Date : 03/25/08 10:17

ESC Sample # : L338389-07

Site ID : 0014DOM

Project # : Kingston

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Chloride	3.7	1.0	mg/l	9056	03/28/08 1645	159	03/29/08 1724	MCH
Fluoride	BDL	0.10	mg/l	9056	03/28/08 1645	159	03/29/08 1724	MCH
Sulfate	12.	5.0	mg/l	9056	03/28/08 1645	159	03/29/08 1724	MCH
Ammonia Nitrogen	BDL	0.10	mg/l	350.1	04/01/08 1452	234	04/02/08 1427	CWP
Nitrate-Nitrite	0.11	0.10	mg/l	353.2	03/31/08 1120	165	03/31/08 0426	LEM
Kjeldahl Nitrogen, TKN	BDL	0.50	mg/l	351.2	04/01/08 1719	98	04/01/08 1705	DTH
Total Inorganic Carbon	92.	1.0	mg/l	9060A	04/03/08 1647	162	04/04/08 1805	ADH
Dissolved Solids	330	10.	mg/l	2540C	03/29/08 1514	193	04/01/08 1046	AMS
Suspended Solids	76.	1.0	mg/l	2540D	03/29/08 1510	193	03/31/08 0739	AMS
Antimony	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2026	JDB
Arsenic	0.011	0.0010	mg/l	6020	03/31/08 0856	47	04/02/08 2026	JDB
Cadmium	BDL	0.00050	mg/l	6020	03/31/08 0856	47	03/31/08 2026	JDB
Chromium	0.010	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2026	JDB
Copper	0.0082	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2026	JDB
Cobalt	0.0016	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2026	JDB
Lead	0.014	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2026	JDB
Nickel	0.012	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2026	JDB
Selenium	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2026	JDB
Silver	BDL	0.00050	mg/l	6020	03/31/08 0856	47	04/02/08 2026	JDB
Thallium	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2026	JDB
Zinc	0.036	0.010	mg/l	6020	03/31/08 0856	47	03/31/08 2026	JDB
Mercury	BDL	0.00020	mg/l	7470A	03/30/08 0935	253	04/03/08 1011	KBW
Aluminum	1.3	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1653	BGL
Barium	0.015	0.0050	mg/l	6010B	03/28/08 1546	249	03/29/08 1653	BGL
Beryllium	BDL	0.0020	mg/l	6010B	03/28/08 1546	249	03/29/08 1653	BGL
Boron	BDL	0.20	mg/l	6010B	03/28/08 1546	249	03/29/08 1653	BGL
Calcium	69.	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1653	BGL
Iron	2.6	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1653	BGL
Magnesium	44.	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1653	BGL
Manganese	0.12	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1653	BGL
Molybdenum	BDL	0.0050	mg/l	6010B	03/28/08 1546	249	03/29/08 1653	BGL
Potassium	1.2	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1653	BGL

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
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REPORT OF ANALYSIS

Mr. Mark Boggs
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400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 09,2008

Date Received : 03/28/08 12:50
Description : KIF Groundwater

Sample ID : KIF-G6B-0308

Collected By : BN-JS
Collection Date : 03/25/08 10:17

ESC Sample # : L338389-07

Site ID : 0014DOM

Project # : Kingston

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Sodium	1.4	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1653	BGL
Strontium	0.045	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 2013	BGL
Vanadium	BDL	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1653	BGL

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
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Reported: 04/09/08 12:45 Printed: 04/09/08 13:01

ENVIRONMENTAL SCIENCE CORP.

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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 09,2008

Date Received : 03/28/08 12:50
Description : KIF Groundwater

Sample ID : KIF-EQ BLANK-0308

Collected By : BN-JS
Collection Date : 03/26/08 09:00

ESC Sample # : L338389-08

Site ID : 0014DOM

Project # : Kingston

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Chloride	BDL	1.0	mg/l	9056	03/28/08 1645	159	03/29/08 1741	MCH
Fluoride	BDL	0.10	mg/l	9056	03/28/08 1645	159	03/29/08 1741	MCH
Sulfate	BDL	5.0	mg/l	9056	03/28/08 1645	159	03/29/08 1741	MCH
Ammonia Nitrogen	BDL	0.10	mg/l	350.1	04/01/08 1452	234	04/02/08 1428	CWP
Nitrate-Nitrite	BDL	0.10	mg/l	353.2	03/31/08 1120	165	03/31/08 0427	LEM
Kjeldahl Nitrogen, TKN	BDL	0.50	mg/l	351.2	04/01/08 1719	98	04/01/08 1705	DTH
Total Inorganic Carbon	BDL	1.0	mg/l	9060A	04/03/08 1647	162	04/04/08 1819	ADH
Dissolved Solids	BDL	10.	mg/l	2540C	03/29/08 1514	193	04/01/08 1049	AMS
Suspended Solids	BDL	1.0	mg/l	2540D	03/29/08 1510	193	03/31/08 0739	AMS
Antimony	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2029	JDB
Arsenic	BDL	0.0010	mg/l	6020	03/31/08 0856	47	04/02/08 2029	JDB
Cadmium	BDL	0.00050	mg/l	6020	03/31/08 0856	47	03/31/08 2029	JDB
Chromium	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2029	JDB
Copper	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2029	JDB
Cobalt	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2029	JDB
Lead	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2029	JDB
Nickel	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2029	JDB
Selenium	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2029	JDB
Silver	BDL	0.00050	mg/l	6020	03/31/08 0856	47	04/02/08 2029	JDB
Thallium	BDL	0.0010	mg/l	6020	03/31/08 0856	47	03/31/08 2029	JDB
Zinc	BDL	0.010	mg/l	6020	03/31/08 0856	47	03/31/08 2029	JDB
Mercury	BDL	0.00020	mg/l	7470A	03/30/08 0935	253	04/03/08 1014	KBW
Aluminum	BDL	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1503	BGL
Barium	BDL	0.0050	mg/l	6010B	03/28/08 1546	249	03/29/08 1503	BGL
Beryllium	BDL	0.0020	mg/l	6010B	03/28/08 1546	249	03/29/08 1503	BGL
Boron	BDL	0.20	mg/l	6010B	03/28/08 1546	249	03/29/08 1503	BGL
Calcium	BDL	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1503	BGL
Iron	BDL	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1503	BGL
Magnesium	BDL	0.10	mg/l	6010B	03/28/08 1546	249	03/29/08 1503	BGL
Manganese	BDL	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1503	BGL
Molybdenum	BDL	0.0050	mg/l	6010B	03/28/08 1546	249	03/29/08 1503	BGL
Potassium	BDL	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1503	BGL

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 09227, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - TN002, WI - 998093910

Notes:
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REPORT OF ANALYSIS

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 09,2008

Date Received : 03/28/08 12:50
Description : KIF Groundwater

Sample ID : KIF-EQ BLANK-0308

Collected By : BN-JS
Collection Date : 03/26/08 09:00

ESC Sample # : L338389-08

Site ID : 0014DOM

Project # : Kingston

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Sodium	BDL	0.50	mg/l	6010B	03/28/08 1546	249	03/29/08 1503	BGL
Strontium	BDL	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1503	BGL
Vanadium	BDL	0.010	mg/l	6010B	03/28/08 1546	249	03/29/08 1503	BGL

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 09227, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - TN002, WI - 9980939:0

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Reported: 04/09/08 12:45 Printed: 04/09/08 13:01

Summary of Remarks For Samples Printed
04/09/08 at 13:01:43

TSR Signing Reports: 400
RX - Priority Rush

Please add EDD to all samples from TVAENVAFF. RC 09/04/07

Sample: L338389-01 Account: TVAENVAFF Received: 03/28/08 12:50 Due Date: 04/07/08 00:00 RPT Date: 04/09/08 12:45

Sample: L338389-02 Account: TVAENVAFF Received: 03/28/08 12:50 Due Date: 04/07/08 00:00 RPT Date: 04/09/08 12:45

Sample: L338389-03 Account: TVAENVAFF Received: 03/28/08 12:50 Due Date: 04/07/08 00:00 RPT Date: 04/09/08 12:45

Sample: L338389-04 Account: TVAENVAFF Received: 03/28/08 12:50 Due Date: 04/07/08 00:00 RPT Date: 04/09/08 12:45

Sample: L338389-05 Account: TVAENVAFF Received: 03/28/08 12:50 Due Date: 04/07/08 00:00 RPT Date: 04/09/08 12:45

Sample: L338389-06 Account: TVAENVAFF Received: 03/28/08 12:50 Due Date: 04/07/08 00:00 RPT Date: 04/09/08 12:45

Sample: L338389-07 Account: TVAENVAFF Received: 03/28/08 12:50 Due Date: 04/07/08 00:00 RPT Date: 04/09/08 12:45

Sample: L338389-08 Account: TVAENVAFF Received: 03/28/08 12:50 Due Date: 04/07/08 00:00 RPT Date: 04/09/08 12:45

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Est. 1970

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop WT9D

Knoxville, TN

Report Summary

Thursday April 17, 2008

Report Number: L340135
Samples Received: 04/09/08
Client Project: Kingston

Description: KIF Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Roberto Celia, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

1 Samples Reported: 04/17/08 12:53 Printed: 04/17/08 12:53

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REPORT OF ANALYSIS

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 17,2008

Date Received : 04/09/08 14:55
Description : KIF Groundwater

Sample ID : KIF-G1B-0308

Collected By : Sam Grindstaff
Collection Date : 04/07/08 10:29

ESC Sample # : L340135-01

Site ID : 0014DOM

Project # : Kingston

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Chloride	1.8	1.0	mg/l	9056	04/09/08 1558	159	04/10/08 0012	MCH
Fluoride	BDL	0.10	mg/l	9056	04/09/08 1558	159	04/10/08 0012	MCH
Sulfate	44.	5.0	mg/l	9056	04/09/08 1558	159	04/10/08 0012	MCH
Ammonia Nitrogen	BDL	0.10	mg/l	350.1	04/14/08 1617	234	04/14/08 1341	LEM
Nitrate-Nitrite	0.65	0.10	mg/l	353.2	04/09/08 1547	165	04/10/08 0144	LEM
Kjeldahl Nitrogen, TKN	BDL	0.50	mg/l	351.2	04/11/08 0956	234	04/11/08 1347	DTH
Total Inorganic Carbon	60.	1.0	mg/l	9060A	04/14/08 1521	162	04/17/08 0844	ADH
Dissolved Solids	270	10.	mg/l	2540C	04/10/08 1530	36	04/12/08 1042	MF
Suspended Solids	40.	1.0	mg/l	2540D	04/10/08 0802	36	04/10/08 0807	MF
Antimony	BDL	0.0010	mg/l	6020	04/10/08 1034	117	04/11/08 2018	LAT
Arsenic	0.0012	0.0010	mg/l	6020	04/10/08 1034	117	04/11/08 2018	LAT
Cadmium	BDL	0.00050	mg/l	6020	04/10/08 1034	117	04/11/08 2018	LAT
Chromium	0.013	0.0010	mg/l	6020	04/10/08 1034	117	04/11/08 2018	LAT
Copper	0.0030	0.0010	mg/l	6020	04/10/08 1034	117	04/11/08 2018	LAT
Lead	0.0027	0.0010	mg/l	6020	04/10/08 1034	117	04/11/08 2018	LAT
Nickel	0.011	0.0010	mg/l	6020	04/10/08 1034	117	04/11/08 2018	LAT
Selenium	BDL	0.0010	mg/l	6020	04/10/08 1034	117	04/11/08 2018	LAT
Silver	BDL	0.00050	mg/l	6020	04/10/08 1034	117	04/11/08 2018	LAT
Thallium	BDL	0.0010	mg/l	6020	04/10/08 1034	117	04/11/08 2018	LAT
Zinc	0.028	0.010	mg/l	6020	04/10/08 1034	117	04/11/08 2018	LAT
Mercury	BDL	0.00020	mg/l	7470A	04/11/08 0003	261	04/12/08 1924	CLF
Aluminum	1.0	0.10	mg/l	6010B	04/10/08 0946	249	04/11/08 1832	EGR
Barium	0.41	0.0050	mg/l	6010B	04/10/08 0946	249	04/10/08 2343	EGR
Beryllium	BDL	0.0020	mg/l	6010B	04/10/08 0946	249	04/10/08 2343	EGR
Boron	BDL	0.20	mg/l	6010B	04/10/08 0946	249	04/10/08 2343	EGR
Calcium	58.	0.50	mg/l	6010B	04/10/08 0946	249	04/10/08 2343	EGR
Cobalt	BDL	0.010	mg/l	6010B	04/10/08 0946	249	04/10/08 2343	EGR
Iron	1.8	0.10	mg/l	6010B	04/10/08 0946	249	04/10/08 2343	EGR
Magnesium	31.	0.10	mg/l	6010B	04/10/08 0946	249	04/10/08 2343	EGR
Manganese	0.071	0.010	mg/l	6010B	04/10/08 0946	249	04/10/08 2343	EGR
Molybdenum	BDL	0.0050	mg/l	6010B	04/10/08 0946	249	04/10/08 2343	EGR
Potassium	1.4	0.50	mg/l	6010B	04/10/08 0946	249	04/10/08 2343	EGR

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
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REPORT OF ANALYSIS

Mr. Mark Boggs
TVA-Environmental Affairs
400 West Summit Hill Dr., Mailstop
Knoxville, TN

April 17,2008

ESC Sample # : L340135-01

Site ID : 0014DOM

Project #: Kingston

Date Received : 04/09/08 14:55
Description : KIF Groundwater

Sample ID : KIF-G1B-0308

Collected By :
Collection Date : 04/07/08 10:29

Parameter	Result	Det. Limit	Units	Method	Prep	PID	Analyzed	AID
Sodium	0.91	0.50	mg/l	6010B	04/10/08 0946	249	04/10/08 2343	EGR
Strontium	0.043	0.010	mg/l	6010B	04/10/08 0946	249	04/10/08 2343	EGR
Vanadium	BDL	0.010	mg/l	6010B	04/10/08 0946	249	04/10/08 2343	EGR

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 09227, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - TN002, WI - 998093910

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