A60 031009 500
Env. Document Type: Solid Waste Correspondence

October 9, 2003

Mr. Larry F. Cook, Jr.
Solid Waste Field Supervisor
Knoxville Environmental Field Office
Division of Solid Waste Management
Tennessee Department of Environment and Conservation
2700 Middlebrook Pike, Suite 220
Knoxville, Tennessee 37921-5602

TENNESSEE VALLEY AUTHORITY (TVA) - KINGSTON FOSSIL PLANT – ASH DISPOSAL AREA – IDL 73-0094 – SEPTEMBER 2003 BASELINE GROUNDWATER MONITORING REPORT

Dear Mr. Cook:

Please find enclosed the quarterly baseline groundwater monitoring report for samples collected September 2, 2003 at designated compliance wells surrounding the subject facility. If you have questions regarding the report, please contact Amos Smith at (423) 751-3522, or Linda Campbell at (865) 717-2157.

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.

Gordon G. Park
Manager, Permitted Programs
Environmental Affairs
5D Lookout Place

ALS:SMF
Enclosure
cc (Enclosure):
J. M. Boggs, LAB 2C-N
E. L. Deskins, KFP 1A-KST
J. D. Milligan, MR 2U-C
J. W. Shipp, MR 2T-C
B. B. Walton, ET 10A-K (w/o Enclosure)
EDMS, EB 5G-C
Prepared by J. Mark Boggs, reviewed by Amos L. Smith

Q:\media files\sldwaste\general\Kif_GWM_letter als 10-03.doc

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

October 9, 2003

Mr. Larry F. Cook, Jr.
Solid Waste Field Supervisor
Knoxville Environmental Field Office
Division of Solid Waste Management
Tennessee Department of Environment and Conservation
2700 Middlebrook Pike, Suite 220
Knoxville, Tennessee 37921-5602

TENNESSEE VALLEY AUTHORITY (TVA) - KINGSTON FOSSIL PLANT – ASH DISPOSAL AREA – IDL 73-0094 – SEPTEMBER 2003 BASELINE GROUNDWATER MONITORING REPORT

Dear Mr. Cook:

Please find enclosed the quarterly baseline groundwater monitoring report for samples collected September 2, 2003 at designated compliance wells surrounding the subject facility. If you have questions regarding the report, please contact Amos Smith at (423) 751-3522, or Linda Campbell at (865) 717-2157.

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.

Gordon G. Park
Manager, Permitted Programs
Environmental Affairs
5D Lookout Place

Enclosure

Tennessee Valley Authority
Kingston Fossil Plant
Ash Disposal Area (IDL 73-0094)

GROUNDWATER MONITORING REPORT FOR SEPTEMBER 2003 SAMPLING EVENT

Prepared by

Tennessee Valley Authority
Chattanooga, Tennessee

October 8, 2003

TABLE OF CONTENTS

Page

INTRODUCTION 1

GROUNDWATER SAMPLING 1

ANALYTICAL RESULTS 2

HYDROGEOLOGIC CONDITIONS 2

CONCLUSIONS 4

APPENDICES

A. Field Data Sheets 5

B. Sample Custody Record 10

C. Laboratory Data Sheets 12

LIST OF TABLES

1. September 2, 2003 Baseline Groundwater Monitoring Data 3
2. September 2, 2003 Groundwater Level Measurements 2

LIST OF FIGURES

1. Groundwater Potentiometric Surface on September 2, 2003 4

INTRODUCTION

This report contains quarterly baseline monitoring results for groundwater samples collected on September 2, 2003 from the four designated compliance monitoring wells surrounding the Kingston Fossil Plant (KIF) ash disposal area. Groundwater samples were analyzed by the TVA Environmental Chemistry Laboratory, an EPA-certified laboratory. Sample collection, laboratory analysis, and statistical evaluation of the analytical data 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 (August 1996).

GROUNDWATER SAMPLING

Groundwater sampling was conducted by TVA staff on September 2, 2003, at facility compliance wells 4B, 6A, 13B, and 16A. A Grundfos Rediflow submersible pump was used for purging and sampling wells 13B and 16A, whereas wells 4B and 6A were purged until dry with the submersible pump and sampled with disposable bailers following recovery. An equipment blank was collected after sampling well 16A. 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. In the case of bailed wells, aliquots were placed in containers for field parameter measurements. Each well was considered properly evacuated when field parameters remained stable during purging or the well was purged to dryness. Field data sheets are included in Appendix A.

Immediately following collection, 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 the TVA Environmental Chemistry Laboratory on September 4. A copy of the sample custody record is given in Appendix B.

ANALYTICAL RESULTS

Groundwater samples were analyzed for the 17 required inorganic constituents specified in Appendix I of TDEC Rule 1200-1-7. Laboratory results completed on October 2 are summarized in Table 1. The complete laboratory report presented in Appendix C includes analytical methods and detection limits for each constituent. As indicated in Table 1, none of the constituent concentrations observed in any of the samples exceed primary drinking water maximum contaminant limits (MCL).

A trace amount of lead (i.e., 2 µg/L) was found in the equipment blank collected after sampling well 16A. Sampling protocols, particularly equipment decontamination procedures, will be re-examined prior to the next sampling event to assure elimination of artificial sources of sample contamination.

HYDROGEOLOGIC CONDITIONS

Groundwater levels measured in site monitoring wells prior to sample collection are given in Table 2. The groundwater potentiometric surface derived from these measurements is presented on Figure 1. Groundwater generally flows in an easterly direction across the ash disposal area toward the reservoir. An average hydraulic of

Table 2. September 2, 2003 Groundwater Level Measurements

Well No.	Bottom Depth (m)	Depth to Water (m)	Top of Casing Elevation (m)	Water Elevation (m)
4B	12.80	3.93	230.72	226.79
6A	8.89	3.41	230.13	226.72
13B	25.72	3.65	234.85	231.20
16A	20.19	0.00	234.26	234.26

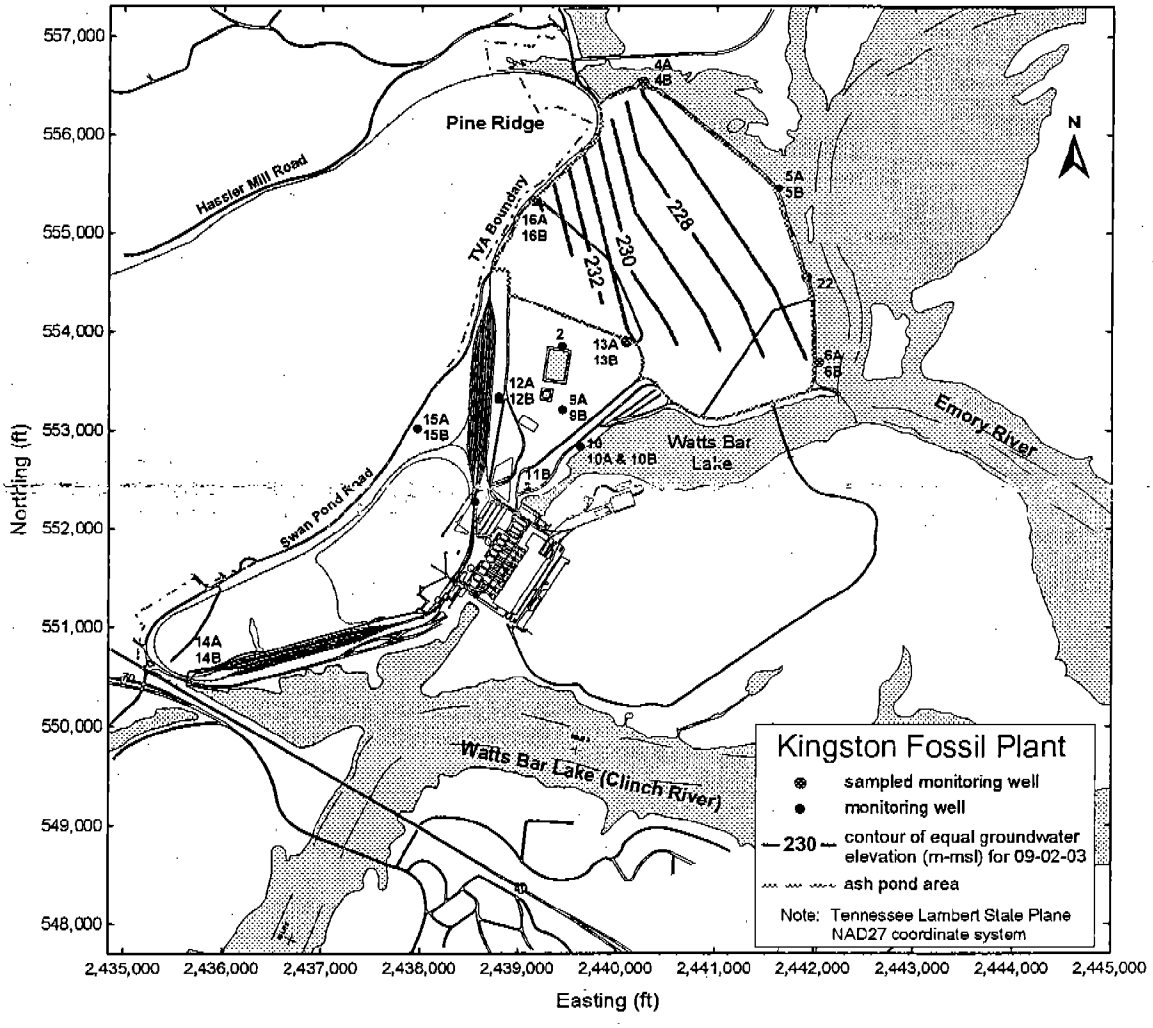
approximately 0.015 is estimated between the western and eastern boundaries of the disposal area using the 9/2/03 water level data. The shallow alluvial aquifer underlying the ash disposal area exhibits a mean horizontal hydraulic conductivity of 0.006 m/d. The local Darcy flux is therefore estimated to be approximately 9.0×10^{-5} m/d.

Table 1. September 2, 2003 Baseline Groundwater Monitoring Data

Analytical Results for Appendix I Inorganic Constituents						MCL	Comparison to MCL[b]			
Constituent	Units	Well No.					Well No.			
		4B downgradient	6A downgradient	13B downgradient	16A upgradient		4B	6A	13B	16A
Antimony	µg/L	<0.1	<0.1	<0.1	<0.1	6	L	L	L	L
Arsenic	µg/L	1.2	11.5	0.2	0.9	50	L	L	L	L
Barium	µg/L	60	60	340	60	2,000	L	L	L	L
Beryllium	µg/L	<1	<1	<1	<1	4	L	L	L	L
Cadmium	µg/L	0.32	0.98	<0.05	0.06	5	L	L	L	L
Chromium	µg/L	<0.5	0.1	<0.5	<0.5	100	L	L	L	L
Cobalt	µg/L	3	11.9	2.2	1.8	--	--	--	--	--
Copper	µg/L	10	<10	<10	<10	1,000	L	L	L	L
Fluoride	µg/L	110	<100	150	410	4,000	L	L	L	L
Lead	µg/L	1.4	5.6	<0.1	1.1	50	L	L	L	L
Mercury	µg/L	<0.1	0.1	<0.1	<0.1	2	L	L	L	L
Nickel	µg/L	8.4	7.7	<0.5	<0.5	--	--	--	--	--
Selenium	µg/L	0.9	2	<0.2	<0.2	50	L	L	L	L
Silver	µg/L	<10	70	<10	<10	100	L	L	L	L
Thallium	µg/L	0.6	0.2	<0.1	<0.1	2	L	L	L	L
Vanadium	µg/L	<10	140	<10	<10	--	--	--	--	--
Zinc	µg/L	20	<10	<10	<10	5,000	L	L	L	L

[b] *"L" = less than or equal to MCL, "G" = greater than MCL.*

Figure 1. Groundwater Potentiometric Surface on September 2, 2003



CONCLUSIONS

Groundwater analytical data for the September 2, 2003 baseline sampling event show no evidence of groundwater contamination from the ash disposal area. Concentrations of the 17 Appendix I inorganic constituents are below MCLs in all samples.

APPENDIX A

FIELD DATA SHEETS

Preliminary Groundwater Data Field Worksheet

Sheet 1 of 1

Project/Site	Well Number	Purge Date	Year	Month	Day
KINGSTON	4B 84068		03	09	02

Depth to Water (m)	Bottom of Well (m)	Well Diameter (mm)	Survey Leader	Field Crew
3.93 4185	12.78 4194	102 4188	JES	SAC

☐ Depth of Screen ☐ Open Bore Hole

(m)	To	(m)	Sample Label	Filter Type and Size:
12.37 4191		12.82 4190	KSW-4B-090203	☑ Unfiltered ☐ Filtered ☐ Both

[Bottom of Well − Depth to Water] x Volume Factor =	Well Volume	Target Purge Volume	Actual Purge Volume
[(12.78)m − (3.93)m] x (8.107)L/m=	71.746 (L)	143.5 (L)	75 (L) 4186

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

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

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 40NZ	945	7.5	~~5.32~~ 12.5							
	947	6.0	5.32	12.5	16.5	6.7	4.7	1009	377	
	949	5.0	7.50	12.5	16.5	6.7	4.6	1021	382	
37	951	4.0	9.25	12.5	16.9	6.7	4.5	1057	386	
49	954	3.5	~~10.77~~	12.5	17.6	6.7	4.5	1120	385	
56	956	3.2	10.77	12.5	18.0	6.7	4.5	1150	384	
69	958	2.8	12.1	12.5	18.5	6.7	4.5	1164	383	
stopped - out of water	1000		12.3	12.5	18.9	6.7	4.4	1155	382	
	1400		4.67		20.4	6.7	4.6	1174	223	

Remarks: ANS -

Reviewed By: [signature] Survey Leader 09/04/03 Date [signature] Project Leader 9/5/03 Date

Sample Collector: SAC/JES

Sample Date			Time
Year	Month	Day	
03	09	02	ET / CT

Pump Duration 15 min 72004

"999" = 2 days

Sample Readings

Analysis Temp ET CT	Pump Rate (L/min) 4193	Depth to Water (m)	Pump Depth (m) 4182	Temp °C 10 EPA 170.1	pH (s.u.) 400 EPA 150.1	DO (mg/L) 300 EPA 360.1	COND (umhos/cm) 94 EPA 120.1	(+/-) ORP (mV) 90 SM 2580B	Turbidity (NTU) EPA 180.1
1400	Bailer	4.67	Bailer	20.4	6.7	4.6	1174	223	

Additional Sample Data

Analyst: SAC/JES

Date Analyzed		
Year	Month	Day
03	09	03

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

Color: Brown

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)
	308		81
Time:	Time: 905	Time:	Time: 909
Initial:	Initial: SAC	Initial:	Initial: JES

Bottles Required ☐ Ferrous ☑ Mineral ☐ Phenol Others (list):

☐ BOD ☐ TOC ☑ Metals ☐ Dis. Mineral ☐ Filt TIC

☐ COD ☑ TIC ☐ Dis. Metals ☑ Nutrient ☐ TSS/TDS

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

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

TVA 30066A (9-1999)

Preliminary Groundwater Data Field Worksheet

Sheet 1 of 1

Project/Site	Well Number	Purge Date	Year	Month	Day
KINGSTON	6A 84068		03	09	02

Depth to Water (m)	Bottom of Well (m)	Well Diameter (mm)	Survey Leader	Field Crew
3.41 4195	8.89 4194	102 4188	JES	SAG

☑ Depth of Screen ☐ Open Bore Hole

(m)	To	(m)	Sample Label	
8.47 4191		8.92 4190	KSW-6A-090203	☑ Unfiltered ☐ Filtered ☐ Both Filter Type and Size:

[Bottom of Well	- Depth to Water]	x Volume Factor	=	Well Volume	Target Purge Volume	Actual Purge Volume
[(8.89)m	- (3.41)m]	x (8.107)L/m=		44.4 (L)	88.8 (L)	37 (L) 4186

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

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

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 1.2 NL	1022	5.3	3.41	8.6						
13 1025	1024	~~4.0~~	5.1	8.6	18.4	6.0	0.0	4902	-10	
21 1027	1026	4.8	5.95		18.4	6.0	0.0	4799	-18	
26	1028	3.5	7.95		18.9	5.8	0.1	4081	10	
30	1030				19.1	5.7	0.2	2618	54	
37	1031	OUT ~~8.9~~ OF		WATER						
	1320		6.3		23.5	6.0	3.7	3030	104	

Remarks: ANTS!

Reviewed By: James Stockburger 09/04/03 (Survey Leader / Date) Matthew Lee 9/5/03 (Project Leader / Date)

Sample Collector: ~~JES~~/SAG

Sample Date			Time
Year	Month	Day	
03	09	02	(ET) CT

Pump Duration 9 min 72004

"999" = 2 days

Sample Readings

1320	Baild	6.3	Baild	23.5	6.0	3.7	3030	104	
4193		4192		10	400	300	94	90	
Analysis Time (ET) CT	Pump Rate (L/min)	Depth to Water (m)	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

Additional Sample Data

Analyst: SAG/~~JES~~

Date Analyzed: Year 03 Month 09 Day 03

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

Color: BROWN

Odor: —

415	~~431~~ 131	436	1340 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: 920	Time:	Time: 0930
Initial:	Initial: SAG	Initial:	Initial: 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)	18.226

Bottles Required: ☐ Ferrous ☑ Mineral ☐ Phenol Others (list):

☐ BOD ☐ TOC ☑ Metals ☐ Dis. Mineral ☐ Filt TIC

☐ COD ☑ TIC ☐ Dis. Metals ☑ Nutrient ☐ TSS/TDS

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

TVA 30066A (9-1999)

Preliminary Groundwater Data Field Worksheet

Sheet 1 of 1

Project/Site	Well Number	Purge Date	Year	Month	Day
KINGSTON	13B 84068		03	09	02

Depth to Water (m)	Bottom of Well (m)	Well Diameter (mm)	Survey Leader	Field Crew
3.65 4185	25.79 4194	51 4188	JES	SAG

☑ Depth of Screen ☐ Open Bore Hole

(m)	To	(m)	Sample Label	Filter Type and Size:
22.29 4191		25.34 4190	KSW-13B-090203	☐ Unfiltered ☐ Filtered ☐ Both

[Bottom of Well - Depth to Water] x Volume Factor =	Well Volume	Target Purge Volume	Actual Purge Volume
[(25.79)m - (3.65)m] x (2.027)L/m=	44.9 (L)	89.8 (L)	90 (L) 4188

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)
Begin Purge 140HR	1426	6.0	3.65	10.0						
	1428		7.65	10.0	17.6	7.8	0.4	363	44	
25	1430	5.2	8.35	10.0	17.7	7.8	0.3	365	-38	
50	1435	5.0	8.66	10.0	17.5	7.9	0.1	365	-106	
75	1440	5.0	8.72	10.0	17.4	7.9	0.1	364	-127	
90	1443	"	8.82	10.0	17.5	7.9	0.1	364	-139	

Remarks:

Reviewed By: James Stockburger 09/04/03 (Survey Leader / Date) Matt Lee 9/5/03 (Project Leader / Date)

Sample Collector: SAG/JES

Sample Date			Time
Year	Month	Day	
03	09	02	1443 ET CT

Pump Duration 17 min 72004

"999" = 2 days

Sample Readings

1443	5.0	8.82	10	17.5	7.9	0.1	364	-139	
Analysis Time ET/CT	4193 Pump Rate (L/min)	Depth to Water (m)	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: SAG/JES

Date Analyzed: Year 03 Month 09 Day 03

Turbidity 1350: ☑ Clear ☐ Turbid ☐ Slightly 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)
	194		1
Time:	Time: 0930	Time:	Time: 937
Initial:	Initial: SAG	Initial:	Initial: 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: ☐ Ferrous ☑ Mineral ☐ Phenol ☐ BOD ☐ TOC ☑ Metals ☐ Dis. Mineral ☐ Filt TIC ☐ COD ☑ TIC ☐ Dis. Metals ☑ Nutrient ☐ TSS/TDS

Others (list): F

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

TVA 30068A (9-1999)

Preliminary Groundwater Data Field Worksheet

Sheet 1 of 1

Project/Site	Well Number	Purge Date Year	Month	Day
KINGSTON	16A 84068	03	09	02

Depth to Water (m)	Bottom of Well (m)	Well Diameter (mm)	Survey Leader	Field Crew
0.0 4195	20.16 4194	51 4188	JES	SAG

☒ Depth of Screen ☐ Open Bore Hole

(m)	To	(m)	Sample Label	
16.98 4191	To	20.03 4190	KSW-16A-090203	☒ Unfiltered ☐ Filtered ☐ Both; Filter Type and Size:

[Bottom of Well - Depth to Water] x Volume Factor = Well Volume | Target Purge Volume | Actual Purge Volume

[(20.16)m - (0.0)m] x (2.027)L/m = 40.9 (L) | 81.8 (L) | 91 (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)
Begin Purge 140 Hz	1504	7.5	0.0	6.0						
	1506	7.3	2.40	6.0	18.5	7.1	0.2	348	256	
57	1511	6.8	4.07	6.0	17.8	7.1	0.2	354	-60	
91	1516	6.5	4.97	6.0	17.6	7.1	0.2	356	-56	

Remarks:

Reviewed By: James [signature] 09/04/03 (Survey Leader, Date) [signature] 9/8/03 (Project Leader, Date)

Sample Collector: SAG/JES

Sample Date: Year 03 Month 09 Day 02; Time (ET) CT

Pump Duration: 12 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 EPA 170.1	pH (s.u.) 400 EPA 150.1	DO (mg/L) 300 EPA 360.1	COND (umhos/cm) 94 EPA 120.1	(+/-) ORP (mV) 90 SM 2580B	Turbidity (NTU) EPA 180.1
1516	6.5	4.97	6.0	17.6	7.1	0.2	356	-56	

Additional Sample Data

Analyst: SAG/JES

Date Analyzed: Year 03 Month 09 Day 03

	415 Phenol Alkalinity mg/L (EPA 310.1)	431 Total Alk. mg/L (EPA 310.1)	435 Mineral Acidity mg/L (EPA 305.1)	437 CO_2 Acidity mg/L (EPA 305.1)
Value		150		14
Time		937		943
Initial		SAG		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 ☐ Turbid ☐ Slightly Turbid ☐ Highly Turbid

Color: —

Odor: —

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

TVA 30056A (9-1999)

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

APPENDIX B

SAMPLE CUSTODY RECORD

KIF
RCRA
100

TENNESSEE VALLEY AUTHORITY WATER MANAGEMENT
ENVIRONMENTAL CHEMISTRY ANALYSIS REQUEST AND CUSTODY RECORD

FORM CONTROL # 17952

PROJECT ID KINGSTON GROUNDWATER

REFERENCE: ☑ WORKPLAN ☐ OTHER

ACCT NO.

DATE REQUIRED 09/25/03

RESULTS TO MARK BOGGS
LAB 2C-N

LAB USE ONLY

TEST IDC'S $ICPW1, $ICPW2 DIGICP DIGMS, SBWMS ASWMS, CDWMS CRWMS, COWMS, PBWMS NIWMS, SEWMS TLWMS, K_W, NAW CLW, FLW, HGW, DIGCVA, SO4W, #TSS, #TDS, TICW

DATE RECEIVED 9/4/03

DAYS DUE

PROJECT LEADER DV CIF=03090069

NO. LABELS 3

LAB USE ONLY LAB ID	FIELD ID	SAMPLE DESCRIPTION	SAMPLE MATRIX	DATE/TIME COLLECTED	NO. OF BOTTLES	ADDITIONAL IDC'S
AD14366	KSW-4B-090204	GROUNDWATER	H2O	9/2 1400	3	
14367	KSW-6A-090204	"	"	" 1320	3	
14368	KSW-13B-090204	"	"	" 1443	3	
14369	KSW-16A-090204	"	"	" 1516	3	
14370	EQUIPMENT BLANK	SuperQ thru sample tube	"	" 1616	3	

FIELD COMMENTS ANTS IN 4B & 6A

ANALYSIS REQUESTED ICP2: Aluminum, calcium, copper, iron, magnesium, manganese, zinc; ICP: Barium, beryllium, boron, strontium, vanadium; GFAA: Antimony, arsenic, cadmium, chromium, chromium, cobalt, lead, nickel, selenium, thallium; FAA: Potassium, sodium; Other: Chloride, fluoride, mercury, sulfate, TSS, TDS, TIC

SUBMITTED BY James E Stickburger DATE/TIME 09/04/03

LABORATORY COMMENTS

RECEIVED BY Becky May DATE/TIME

DISTRIBUTION OF COPIES
1 - LABORATORY 2 - RETURN TO REQUESTOR 3 - RETAINED BY REQUESTOR

TVA 30488 (RG-WM 3-94)

PAGE 1 OF 1

APPENDIX C

LABORATORY DATA SHEETS

Data Report Number: 031002-92918
Report of Results: Environmental

TENNESSEE VALLEY AUTHORITY
CENTRAL LABORATORIES SERVICES
1101 Market Street, PSC 1B-C
Chattanooga, Tennessee 37402-2801
Phone: (423) 876 - 4318 • Fax: (423) 876 - 4137

Shipping Address:
Chickamauga Power Service Center
North Side Chickamauga Reservation
Chattanooga, Tennessee 37415

Customer Address: Mark Boggs, LAB 2C-N
Jack Milligan, CST17B-C
Phone: Debbie Nunn, HB 2A-C
Fax : Not Available
E-Mail: Wells

Location Code: KIF-4B
Field ID: KSW-4B-090204
Sample Description: GROUNDWATER

Sample ID: AD14366 **LRF ID:** 03090069
Matrix: Water **Reg:** RCRA
Date Collected: 09/02/2003
Time Collected: 14:00 EST
Date Received: 09/04/2003
Time Received: 13:36
Project Manager: David Varnell

Analyte	CAS Number[1]	Result	Units	MDL[2]	Analysis Date	Analysis Time	Analyst	Method Reference
Aluminum, Total	7429-90-5	0.76	mg/L	0.05	09/16/2003	12:47	LMJ	EPA 6010B
Antimony, Total Recoverable	7440-36-0	< MDL	mg/L	0.0001	09/23/2003	16:33	LRP	EPA 6020
Arsenic, Total Recoverable	7440-38-2	0.0012	mg/L	0.0001	09/23/2003	16:33	LRP	EPA 6020
Barium, Total	7440-39-3	0.06	mg/L	0.01	09/16/2003	12:47	LMJ	EPA 6010B
Beryllium, Total	7440-41-7	< MDL	mg/L	0.001	09/16/2003	12:47	LMJ	EPA 6010B
Boron, Total	7440-42-8	< MDL	mg/L	0.2	09/16/2003	12:47	LMJ	EPA 6010B
Cadmium, Total Recoverable	7440-43-9	0.00032	mg/L	0.00005	09/23/2003	16:33	LRP	EPA 6020
Calcium, Total	7440-70-2	230	mg/L	0.1	09/16/2003	12:47	LMJ	EPA 6010B
Chloride, Total	16887-00-6	4.3	mg/L	1.	09/17/2003	14:33	ADP	EPA 325.2
Chromium, Total Recoverable	7440-47-3	< MDL	mg/L	0.0005	09/23/2003	16:37	LRP	EPA 6020
Cobalt, Total Recoverable	7440-48-4	0.0030	mg/L	0.0005	09/23/2003	16:37	LRP	EPA 6020
Copper, Total	7440-50-8	0.01	mg/L	0.01	09/16/2003	12:47	LMJ	EPA 6010B
Filterable Residue		900.	mg/L	10.	09/08/2003	13:13	AJH	EPA 160.1
Fluoride, Total	16984-48-8	0.11	mg/L	0.1	09/08/2003	9:30	GMP	EPA 340.2
Inorganic Carbon, Total		93	mg/L	1.	09/11/2003	14:59	ADP	ASTM477988
Iron, Total	7439-89-6	1.7	mg/L	0.01	09/16/2003	12:47	LMJ	EPA 6010B
Lead, Total Recoverable	7439-92-1	0.0014	mg/L	0.0001	09/23/2003	16:33	LRP	EPA 6020
Magnesium, Total	7439-95-4	19	mg/L	0.01	09/16/2003	12:47	LMJ	EPA 6010B
Manganese, Total	7439-96-5	2.0	mg/L	0.005	09/16/2003	12:47	LMJ	EPA 6010B
Mercury, Total	7439-97-6	< MDL	mg/L	0.0001	09/23/2003	17:02	RIG	EPA 7470A
Nickel, Total Recoverable	7440-02-0	0.0084	mg/L	0.0005	09/23/2003	16:37	LRP	EPA 6020
Non-Filterable Residue		90.	mg/L	1.	09/08/2003	8:51	AJH	EPA 160.2
Potassium, Total	7440-09-7	8.2	mg/L	0.1	09/10/2003	15:58	LRP	EPA 7610
Selenium, Total Recoverable	7782-49-2	0.0009	mg/L	0.0002	09/23/2003	16:33	LRP	EPA 6020
Silver, Total	7440-22-4	< MDL	mg/L	0.01	09/16/2003	12:47	LMJ	EPA 6010B
Sodium, Total	7440-23-5	8.7	mg/L	0.1	09/09/2003	11:36	LRP	EPA 7770
Strontium, Total	7440-24-6	0.47	mg/L	0.05	09/16/2003	12:47	LMJ	EPA 6010B
Sulfate, Total	14808-79-8	380	mg/L	1.	09/16/2003	10:30	GMP	EPA 375.4
Thallium, Total Recoverable	7440-28-0	0.0006	mg/L	0.0001	09/23/2003	16:33	LRP	EPA 6020
Vanadium, Total	7440-62-2	< MDL	mg/L	0.01	09/16/2003	12:47	LMJ	EPA 6010B
Zinc, Total	7440-66-6	0.02	mg/L	0.01	09/16/2003	12:47	LMJ	EPA 6010B

[1] Chemical Abstracts Service Registry Number [2] Method Detection Limit

Data Report Number: 031002-92918
Report of Results: Environmental

TENNESSEE VALLEY AUTHORITY
CENTRAL LABORATORIES SERVICES
1101 Market Street, PSC 1B-C
Chattanooga, Tennessee 37402-2801
Phone: (423) 876 - 4318 • Fax: (423) 876 - 4137

Shipping Address:
Chickamauga Power Service Center
North Side Chickamauga Reservation
Chattanooga, Tennessee 37415

Customer Address: Mark Boggs, LAB 2C-N
Jack Milligan, CST17B-C
Phone: Debbie Nunn, HB 2A-C
Fax : Not Available
E-Mail: Wells
Location Code: KIF-4B
Field ID: KSW-4B-090204
Sample Description: GROUNDWATER

Sample ID: AD14366 **LRF ID:** 03090069
Matrix: Water **Reg:** RCRA
Date Collected: 09/02/2003
Time Collected: 14:00 EST
Date Received: 09/04/2003
Time Received: 13:36
Project Manager: David Varnell

Analyte	CAS Number[1]	Result	Units	MDL[2]	Analysis Date	Analysis Time	Analyst	Method Reference

Sample Comments: Latitude:
Longitude:

[1] Chemical Abstracts Service Registry Number [2] Method Detection Limit

Data Report Number: 031002-92918
Report of Results: Environmental

TENNESSEE VALLEY AUTHORITY
CENTRAL LABORATORIES SERVICES
1101 Market Street, PSC 1B-C
Chattanooga, Tennessee 37402-2801
Phone: (423) 876 - 4318 • Fax: (423) 876 - 4137

Shipping Address:
Chickamauga Power Service Center
North Side Chickamauga Reservation
Chattanooga, Tennessee 37415

Customer Address: Mark Boggs, LAB 2C-N
Jack Milligan, CST17B-C
Phone: Debbie Nunn, HB 2A-C
Fax : Not Available
E-Mail: Wells

Location Code: KIF-6A
Field ID: KSW-6A-090204
Sample Description: GROUNDWATER

Sample ID: AD14367 **LRF ID:** 03090069
Matrix: Water **Reg:** RCRA
Date Collected: 09/02/2003
Time Collected: 13:20 EST
Date Received: 09/04/2003
Time Received: 13:36
Project Manager: David Varnell

Analyte	CAS Number[1]	Result	Units	MDL[2]	Analysis Date	Analysis Time	Analyst	Method Reference
Aluminum, Total	7429-90-5	1.0	mg/L	0.05	09/16/2003	12:51	LMJ	EPA 6010B
Antimony, Total Recoverable	7440-36-0	< MDL	mg/L	0.0001	09/23/2003	16:41	LRP	EPA 6020
Arsenic, Total Recoverable	7440-38-2	0.0115	mg/L	0.0001	09/23/2003	16:41	LRP	EPA 6020
Barium, Total	7440-39-3	0.06	mg/L	0.01	09/16/2003	12:51	LMJ	EPA 6010B
Beryllium, Total	7440-41-7	< MDL	mg/L	0.001	09/16/2003	12:51	LMJ	EPA 6010B
Boron, Total	7440-42-8	1.3	mg/L	0.2	09/16/2003	12:51	LMJ	EPA 6010B
Cadmium, Total Recoverable	7440-43-9	0.00098	mg/L	0.00005	09/23/2003	16:41	LRP	EPA 6020
Calcium, Total	7440-70-2	190	mg/L	0.1	09/16/2003	12:51	LMJ	EPA 6010B
Chloride, Total	16887-00-6	7.2	mg/L	1.	09/17/2003	14:33	ADP	EPA 325.2
Chromium, Total Recoverable	7440-47-3	0.0001	mg/L	0.0001	09/23/2003	16:46	LRP	EPA 6020
Cobalt, Total Recoverable	7440-48-4	0.0119	mg/L	0.0001	09/23/2003	16:46	LRP	EPA 6020
Copper, Total	7440-50-8	< MDL	mg/L	0.01	09/16/2003	12:51	LMJ	EPA 6010B
Filterable Residue		3300.	mg/L	10.	09/08/2003	13:13	AJH	EPA 160.1
Fluoride, Total	16984-48-8	< MDL	mg/L	0.1	09/08/2003	9:30	GMP	EPA 340.2
Inorganic Carbon, Total		76	mg/L	1.	09/11/2003	15:05	ADP	ASTM477988
Iron, Total	7439-89-6	630	mg/L	0.1	09/16/2003	12:51	LMJ	EPA 6010B
Lead, Total Recoverable	7439-92-1	0.0056	mg/L	0.0001	09/23/2003	16:41	LRP	EPA 6020
Magnesium, Total	7439-95-4	53	mg/L	0.01	09/16/2003	12:51	LMJ	EPA 6010B
Manganese, Total	7439-96-5	88	mg/L	0.005	09/16/2003	12:51	LMJ	EPA 6010B
Mercury, Total	7439-97-6	0.0001	mg/L	0.0001	09/23/2003	17:04	RIG	EPA 7470A
Nickel, Total Recoverable	7440-02-0	0.0077	mg/L	0.0001	09/23/2003	16:46	LRP	EPA 6020
Non-Filterable Residue		150.	mg/L	1.	09/08/2003	8:51	AJH	EPA 160.2
Potassium, Total	7440-09-7	17.	mg/L	0.1	09/10/2003	15:59	LRP	EPA 7610
Selenium, Total Recoverable	7782-49-2	0.0020	mg/L	0.0002	09/23/2003	16:41	LRP	EPA 6020
Silver, Total	7440-22-4	0.07	mg/L	0.01	09/16/2003	12:51	LMJ	EPA 6010B
Sodium, Total	7440-23-5	9.8	mg/L	0.1	09/09/2003	11:37	LRP	EPA 7770
Strontium, Total	7440-24-6	0.79	mg/L	0.05	09/16/2003	12:51	LMJ	EPA 6010B
Sulfate, Total	14808-79-8	2000	mg/L	1.	09/16/2003	10:30	GMP	EPA 375.4
Thallium, Total Recoverable	7440-28-0	0.0002	mg/L	0.0001	09/23/2003	16:41	LRP	EPA 6020
Vanadium, Total	7440-62-2	0.14	mg/L	0.01	09/16/2003	12:51	LMJ	EPA 6010B
Zinc, Total	7440-66-6	< MDL	mg/L	0.01	09/16/2003	12:51	LMJ	EPA 6010B

[1] Chemical Abstracts Service Registry Number [2] Method Detection Limit

Data Report Number: 031002-92918
Report of Results: Environmental

TENNESSEE VALLEY AUTHORITY
CENTRAL LABORATORIES SERVICES
1101 Market Street, PSC 1B-C
Chattanooga, Tennessee 37402-2801
Phone: (423) 876 - 4318 • Fax: (423) 876 - 4137

Shipping Address:
Chickamauga Power Service Center
North Side Chickamauga Reservation
Chattanooga, Tennessee 37415

Customer Address: Mark Boggs, LAB 2C-N
Jack Milligan, CST17B-C
Phone: Debbie Nunn, HB 2A-C
Fax : Not Available
E-Mail: Wells
Location Code: KIF-6A
Field ID: KSW-6A-090204
Sample Description: GROUNDWATER

Sample ID: AD14367 **LRF ID:** 03090069
Matrix: Water **Reg:** RCRA
Date Collected: 09/02/2003
Time Collected: 13:20 EST
Date Received: 09/04/2003
Time Received: 13:36
Project Manager: David Varnell

Analyte	CAS Number[1]	Result	Units	MDL[2]	Analysis Date	Analysis Time	Analyst	Method Reference

Sample Comments: Latitude:
Longitude:

[1] Chemical Abstracts Service Registry Number [2] Method Detection Limit

Data Report Number: 031002-92918
Report of Results: Environmental

TENNESSEE VALLEY AUTHORITY
CENTRAL LABORATORIES SERVICES
1101 Market Street, PSC 1B-C
Chattanooga, Tennessee 37402-2801
Phone: (423) 876 - 4318 • Fax: (423) 876 - 4137

Shipping Address:
Chickamauga Power Service Center
North Side Chickamauga Reservation
Chattanooga, Tennessee 37415

Customer Address: Mark Boggs, LAB 2C-N
Jack Milligan, CST17B-C
Phone: Debbie Nunn, HB 2A-C
Fax : Not Available
E-Mail: Wells

Location Code: KIF-13B
Field ID: KSW-13B-090204
Sample Description: GROUNDWATER

Sample ID: AD14368 **LRF ID:** 03090069
Matrix: Water **Reg:** RCRA
Date Collected: 09/02/2003
Time Collected: 14:43 EST
Date Received: 09/04/2003
Time Received: 13:36
Project Manager: David Varnell

Analyte	CAS Number[1]	Result	Units	MDL[2]	Analysis Date	Analysis Time	Analyst	Method Reference
Aluminum, Total	7429-90-5	< MDL	mg/L	0.05	09/16/2003	12:56	LMJ	EPA 6010B
Antimony, Total Recoverable	7440-36-0	< MDL	mg/L	0.0001	09/23/2003	16:50	LRP	EPA 6020
Arsenic, Total Recoverable	7440-38-2	0.0002	mg/L	0.0001	09/23/2003	16:50	LRP	EPA 6020
Barium, Total	7440-39-3	0.34	mg/L	0.01	09/16/2003	12:56	LMJ	EPA 6010B
Beryllium, Total	7440-41-7	< MDL	mg/L	0.001	09/16/2003	12:56	LMJ	EPA 6010B
Boron, Total	7440-42-8	< MDL	mg/L	0.2	09/16/2003	12:56	LMJ	EPA 6010B
Cadmium, Total Recoverable	7440-43-9	< MDL	mg/L	0.00005	09/23/2003	16:50	LRP	EPA 6020
Calcium, Total	7440-70-2	13	mg/L	0.1	09/16/2003	12:56	LMJ	EPA 6010B
Chloride, Total	16887-00-6	2.0	mg/L	1.	09/17/2003	14:33	ADP	EPA 325.2
Chromium, Total Recoverable	7440-47-3	< MDL	mg/L	0.0005	09/23/2003	16:54	LRP	EPA 6020
Cobalt, Total Recoverable	7440-48-4	0.0022	mg/L	0.0005	09/23/2003	16:54	LRP	EPA 6020
Copper, Total	7440-50-8	< MDL	mg/L	0.01	09/16/2003	12:56	LMJ	EPA 6010B
Filterable Residue		250.	mg/L	10.	09/08/2003	13:13	AJH	EPA 160.1
Fluoride, Total	16984-48-8	0.15	mg/L	0.1	09/08/2003	9:30	GMP	EPA 340.2
Inorganic Carbon, Total		44	mg/L	1.	09/11/2003	15:18	ADP	ASTM477988
Iron, Total	7439-89-6	0.13	mg/L	0.01	09/16/2003	12:56	LMJ	EPA 6010B
Lead, Total Recoverable	7439-92-1	< MDL	mg/L	0.0001	09/23/2003	16:50	LRP	EPA 6020
Magnesium, Total	7439-95-4	1.8	mg/L	0.01	09/16/2003	12:56	LMJ	EPA 6010B
Manganese, Total	7439-96-5	0.07	mg/L	0.005	09/16/2003	12:56	LMJ	EPA 6010B
Mercury, Total	7439-97-6	< MDL	mg/L	0.0001	09/23/2003	17:06	RIG	EPA 7470A
Nickel, Total Recoverable	7440-02-0	< MDL	mg/L	0.0005	09/23/2003	16:54	LRP	EPA 6020
Non-Filterable Residue		2.	mg/L	1.	09/08/2003	8:51	AJH	EPA 160.2
Potassium, Total	7440-09-7	2.4	mg/L	0.1	09/10/2003	16:00	LRP	EPA 7610
Selenium, Total Recoverable	7782-49-2	< MDL	mg/L	0.0002	09/23/2003	16:50	LRP	EPA 6020
Silver, Total	7440-22-4	< MDL	mg/L	0.01	09/16/2003	12:56	LMJ	EPA 6010B
Sodium, Total	7440-23-5	74.	mg/L	0.1	09/09/2003	16:12	LRP	EPA 7770
Strontium, Total	7440-24-6	0.26	mg/L	0.05	09/16/2003	12:56	LMJ	EPA 6010B
Sulfate, Total	14808-79-8	3.8	mg/L	1.	09/16/2003	10:30	GMP	EPA 375.4
Thallium, Total Recoverable	7440-28-0	< MDL	mg/L	0.0001	09/23/2003	16:50	LRP	EPA 6020
Vanadium, Total	7440-62-2	< MDL	mg/L	0.01	09/16/2003	12:56	LMJ	EPA 6010B
Zinc, Total	7440-66-6	< MDL	mg/L	0.01	09/16/2003	12:56	LMJ	EPA 6010B

[1] Chemical Abstracts Service Registry Number [2] Method Detection Limit

Data Report Number: 031002-92918
Report of Results: Environmental

TENNESSEE VALLEY AUTHORITY
CENTRAL LABORATORIES SERVICES
1101 Market Street, PSC 1B-C
Chattanooga, Tennessee 37402-2801
Phone: (423) 876 - 4318 • Fax: (423) 876 - 4137

Shipping Address:
Chickamauga Power Service Center
North Side Chickamauga Reservation
Chattanooga, Tennessee 37415

Customer Address: Mark Boggs, LAB 2C-N
Jack Milligan, CST17B-C
Phone: Debbie Nunn, HB 2A-C
Fax : Not Available
E-Mail: Wells
Location Code: KIF-13B
Field ID: KSW-13B-090204
Sample Description: GROUNDWATER

Sample ID: AD14368 **LRF ID:** 03090069
Matrix: Water **Reg:** RCRA
Date Collected: 09/02/2003
Time Collected: 14:43 EST
Date Received: 09/04/2003
Time Received: 13:36
Project Manager: David Varnell

Analyte	CAS Number[1]	Result	Units	MDL[2]	Analysis Date	Analysis Time	Analyst	Method Reference

Sample Comments: Latitude:
Longitude:
TDS value confirmed.
Barium and Calcium values confirmed.

[1] Chemical Abstracts Service Registry Number [2] Method Detection Limit

Data Report Number: 031002-92918
Report of Results: Environmental

TENNESSEE VALLEY AUTHORITY
CENTRAL LABORATORIES SERVICES
1101 Market Street, PSC 1B-C
Chattanooga, Tennessee 37402-2801
Phone: (423) 876 - 4318 • Fax: (423) 876 - 4137

Shipping Address:
Chickamauga Power Service Center
North Side Chickamauga Reservation
Chattanooga, Tennessee 37415

Customer Address: Mark Boggs, LAB 2C-N
Jack Milligan, CST17B-C
Phone: Debbie Nunn, HB 2A-C
Fax : Not Available
E-Mail: Wells

Location Code: KIF-16A
Field ID: KSW-16A-090204
Sample Description: GROUNDWATER

Sample ID: AD14369 **LRF ID:** 03090069
Matrix: Water **Reg:** RCRA
Date Collected: 09/02/2003
Time Collected: 15:16 EST
Date Received: 09/04/2003
Time Received: 13:36
Project Manager: David Varnell

Analyte	CAS Number[1]	Result	Units	MDL[2]	Analysis Date	Analysis Time	Analyst	Method Reference
Aluminum, Total	7429-90-5	1.1	mg/L	0.05	09/16/2003	13:00	LMJ	EPA 6010B
Antimony, Total Recoverable	7440-36-0	< MDL	mg/L	0.0001	09/23/2003	16:59	LRP	EPA 6020
Arsenic, Total Recoverable	7440-38-2	0.0009	mg/L	0.0001	09/23/2003	16:59	LRP	EPA 6020
Barium, Total	7440-39-3	0.06	mg/L	0.01	09/16/2003	13:00	LMJ	EPA 6010B
Beryllium, Total	7440-41-7	< MDL	mg/L	0.001	09/16/2003	13:00	LMJ	EPA 6010B
Boron, Total	7440-42-8	< MDL	mg/L	0.2	09/16/2003	13:00	LMJ	EPA 6010B
Cadmium, Total Recoverable	7440-43-9	0.00006	mg/L	0.00005	09/23/2003	16:59	LRP	EPA 6020
Calcium, Total	7440-70-2	42	mg/L	0.1	09/16/2003	13:00	LMJ	EPA 6010B
Chloride, Total	16887-00-6	< MDL	mg/L	1.	09/17/2003	14:33	ADP	EPA 325.2
Chromium, Total Recoverable	7440-47-3	< MDL	mg/L	0.0005	09/23/2003	17:03	LRP	EPA 6020
Cobalt, Total Recoverable	7440-48-4	0.0018	mg/L	0.0005	09/23/2003	17:03	LRP	EPA 6020
Copper, Total	7440-50-8	< MDL	mg/L	0.01	09/16/2003	13:00	LMJ	EPA 6010B
Filterable Residue		220.	mg/L	10.	09/08/2003	13:14	AJH	EPA 160.1
Fluoride, Total	16984-48-8	0.41	mg/L	0.1	09/08/2003	9:30	GMP	EPA 340.2
Inorganic Carbon, Total		37	mg/L	1.	09/11/2003	15:24	ADP	ASTM477988
Iron, Total	7439-89-6	2.2	mg/L	0.01	09/16/2003	13:00	LMJ	EPA 6010B
Lead, Total Recoverable	7439-92-1	0.0011	mg/L	0.0001	09/23/2003	16:59	LRP	EPA 6020
Magnesium, Total	7439-95-4	9.3	mg/L	0.01	09/16/2003	13:00	LMJ	EPA 6010B
Manganese, Total	7439-96-5	1.2	mg/L	0.005	09/16/2003	13:00	LMJ	EPA 6010B
Mercury, Total	7439-97-6	< MDL	mg/L	0.0001	09/23/2003	17:09	RIG	EPA 7470A
Nickel, Total Recoverable	7440-02-0	< MDL	mg/L	0.0005	09/23/2003	17:03	LRP	EPA 6020
Non-Filterable Residue		17.	mg/L	1.	09/08/2003	8:51	AJH	EPA 160.2
Potassium, Total	7440-09-7	2.0	mg/L	0.1	09/10/2003	16:05	LRP	EPA 7610
Selenium, Total Recoverable	7782-49-2	< MDL	mg/L	0.0002	09/23/2003	16:59	LRP	EPA 6020
Silver, Total	7440-22-4	< MDL	mg/L	0.01	09/16/2003	13:00	LMJ	EPA 6010B
Sodium, Total	7440-23-5	16.	mg/L	0.1	09/09/2003	12:11	LRP	EPA 7770
Strontium, Total	7440-24-6	0.27	mg/L	0.05	09/16/2003	13:00	LMJ	EPA 6010B
Sulfate, Total	14808-79-8	43	mg/L	1.	09/16/2003	10:30	GMP	EPA 375.4
Thallium, Total Recoverable	7440-28-0	< MDL	mg/L	0.0001	09/23/2003	16:59	LRP	EPA 6020
Vanadium, Total	7440-62-2	< MDL	mg/L	0.01	09/16/2003	13:00	LMJ	EPA 6010B
Zinc, Total	7440-66-6	< MDL	mg/L	0.01	09/16/2003	13:00	LMJ	EPA 6010B

[1] Chemical Abstracts Service Registry Number [2] Method Detection Limit

Data Report Number: 031002-92918
Report of Results: Environmental

TENNESSEE VALLEY AUTHORITY
CENTRAL LABORATORIES SERVICES
1101 Market Street, PSC 1B-C
Chattanooga, Tennessee 37402-2801
Phone: (423) 876 - 4318 • Fax: (423) 876 - 4137

Shipping Address:
Chickamauga Power Service Center
North Side Chickamauga Reservation
Chattanooga, Tennessee 37415

Customer Address: Mark Boggs, LAB 2C-N
Jack Milligan, CST17B-C
Phone: Debbie Nunn, HB 2A-C
Fax : Not Available
E-Mail: Wells
Location Code: KIF-16A
Field ID: KSW-16A-090204
Sample Description: GROUNDWATER

Sample ID: AD14369 **LRF ID:** 03090069
Matrix: Water **Reg:** RCRA
Date Collected: 09/02/2003
Time Collected: 15:16 EST
Date Received: 09/04/2003
Time Received: 13:36
Project Manager: David Vannell

Analyte	CAS Number[1]	Result	Units	MDL[2]	Analysis Date	Analysis Time	Analyst	Method Reference

Sample Comments: Latitude:
Longitude:

[1] Chemical Abstracts Service Registry Number [2] Method Detection Limit

Data Report Number: 031002-92918
Report of Results: Environmental

TENNESSEE VALLEY AUTHORITY
CENTRAL LABORATORIES SERVICES
1101 Market Street, PSC 1B-C
Chattanooga, Tennessee 37402-2801
Phone: (423) 876 - 4318 • Fax: (423) 876 - 4137

Shipping Address:
Chickamauga Power Service Center
North Side Chickamauga Reservation
Chattanooga, Tennessee 37415

Customer Address: Mark Boggs, LAB 2C-N
Jack Milligan, CST17B-C
Phone: Debbie Nunn, HB 2A-C
Fax : Not Available
E-Mail: Wells
Location Code: KIF
Field ID: EQUIPMENT BLANK
Sample Description: SUPER Q THRU SAMPLE TUBE

Sample ID: AD14370 **LRF ID:** 03090069
Matrix: Water **Reg:** RCRA
Date Collected: 09/02/2003
Time Collected: 16:16 EST
Date Received: 09/04/2003
Time Received: 13:36
Project Manager: David Varnell

Analyte	CAS Number[1]	Result	Units	MDL[2]	Analysis Date	Analysis Time	Analyst	Method Reference
Aluminum, Total	7429-90-5	< MDL	mg/L	0.05	09/16/2003	13:06	LMJ	EPA 6010B
Antimony, Total Recoverable	7440-36-0	< MDL	mg/L	0.0001	09/23/2003	17:27	LRP	EPA 6020
Arsenic, Total Recoverable	7440-38-2	< MDL	mg/L	0.0001	09/23/2003	17:27	LRP	EPA 6020
Barium, Total	7440-39-3	< MDL	mg/L	0.01	09/16/2003	13:06	LMJ	EPA 6010B
Beryllium, Total	7440-41-7	< MDL	mg/L	0.001	09/16/2003	13:06	LMJ	EPA 6010B
Boron, Total	7440-42-8	< MDL	mg/L	0.2	09/16/2003	13:06	LMJ	EPA 6010B
Cadmium, Total Recoverable	7440-43-9	< MDL	mg/L	0.00005	09/23/2003	17:27	LRP	EPA 6020
Calcium, Total	7440-70-2	< MDL	mg/L	0.1	09/16/2003	13:06	LMJ	EPA 6010B
Chloride, Total	16887-00-6	< MDL	mg/L	1.	09/17/2003	14:33	ADP	EPA 325.2
Chromium, Total Recoverable	7440-47-3	< MDL	mg/L	0.0001	09/23/2003	17:27	LRP	EPA 6020
Cobalt, Total Recoverable	7440-48-4	< MDL	mg/L	0.0001	09/23/2003	17:27	LRP	EPA 6020
Copper, Total	7440-50-8	< MDL	mg/L	0.01	09/16/2003	13:06	LMJ	EPA 6010B
Filterable Residue		< MDL	mg/L	10.	09/08/2003	13:14	AJH	EPA 160.1
Fluoride, Total	16984-48-8	< MDL	mg/L	0.1	09/08/2003	9:30	GMP	EPA 340.2
Inorganic Carbon, Total		< MDL	mg/L	1.	09/11/2003	15:30	ADP	ASTM477988
Iron, Total	7439-89-6	< MDL	mg/L	0.01	09/16/2003	13:06	LMJ	EPA 6010B
Lead, Total Recoverable	7439-92-1	0.0002	mg/L	0.0001	09/23/2003	17:27	LRP	EPA 6020
Magnesium, Total	7439-95-4	< MDL	mg/L	0.01	09/16/2003	13:06	LMJ	EPA 6010B
Manganese, Total	7439-96-5	< MDL	mg/L	0.005	09/16/2003	13:06	LMJ	EPA 6010B
Mercury, Total	7439-97-6	< MDL	mg/L	0.0001	09/23/2003	17:12	RIG	EPA 7470A
Nickel, Total Recoverable	7440-02-0	< MDL	mg/L	0.0001	09/23/2003	17:27	LRP	EPA 6020
Non-Filterable Residue		< MDL	mg/L	1.	09/08/2003	8:52	AJH	EPA 160.2
Potassium, Total	7440-09-7	< MDL	mg/L	0.1	09/10/2003	16:06	LRP	EPA 7610
Selenium, Total Recoverable	7782-49-2	< MDL	mg/L	0.0002	09/23/2003	17:27	LRP	EPA 6020
Silver, Total	7440-22-4	< MDL	mg/L	0.01	09/16/2003	13:06	LMJ	EPA 6010B
Sodium, Total	7440-23-5	< MDL	mg/L	0.1	09/09/2003	12:12	LRP	EPA 7770
Strontium, Total	7440-24-6	< MDL	mg/L	0.05	09/16/2003	13:06	LMJ	EPA 6010B
Sulfate, Total	14808-79-8	< MDL	mg/L	1.	09/16/2003	10:30	GMP	EPA 375.4
Thallium, Total Recoverable	7440-28-0	< MDL	mg/L	0.0001	09/23/2003	17:27	LRP	EPA 6020
Vanadium, Total	7440-62-2	< MDL	mg/L	0.01	09/16/2003	13:06	LMJ	EPA 6010B
Zinc, Total	7440-66-6	< MDL	mg/L	0.01	09/16/2003	13:06	LMJ	EPA 6010B

[1] Chemical Abstracts Service Registry Number [2] Method Detection Limit

Data Report Number: 031002-92918
Report of Results: Environmental

TENNESSEE VALLEY AUTHORITY
CENTRAL LABORATORIES SERVICES
1101 Market Street, PSC 1B-C
Chattanooga, Tennessee 37402-2801
Phone: (423) 876 - 4318 • Fax: (423) 876 - 4137

Shipping Address:
Chickamauga Power Service Center
North Side Chickamauga Reservation
Chattanooga, Tennessee 37415

Customer Address: Mark Boggs, LAB 2C-N
Jack Milligan, CST17B-C
Phone: Debbie Nunn, HB 2A-C
Fax : Not Available
E-Mail: Wells
Location Code: KIF
Field ID: EQUIPMENT BLANK
Sample Description: SUPER Q THRU SAMPLE TUBE

Sample ID: AD14370 **LRF ID:** 03090069
Matrix: Water **Reg:** RCRA
Date Collected: 09/02/2003
Time Collected: 16:16 EST
Date Received: 09/04/2003
Time Received: 13:36
Project Manager: David Varnell

Analyte	CAS Number[1]	Result	Units	MDL[2]	Analysis Date	Analysis Time	Analyst	Method Reference

Sample Comments: None

[1] Chemical Abstracts Service Registry Number [2] Method Detection Limit

Central Laboratories Services data report number 031002-92918 was electronically approved using Labworks Enterprise Version 5.7, Build 255 on 10/02/2003 at 8:51 by David M. Varnell.

Vanessa L. Ramey, Lab Director
Lisa D. Ortiz, Product Manager
David M. Varnell, Product Manager
Ricardo I. Gilbert, Senior Analytical Chemist

This report contains sample results for the following samples, Login Reference File number: 03090069

AD14366
AD14367
AD14368
AD14369
AD14370

[1] Chemical Abstracts Service Registry Number [2] Method Detection Limit