

# 2017 Annual CCR Rule Groundwater Monitoring Report – Ash Pond Complex

Gallatin Fossil Plant  
Gallatin, Tennessee

Prepared for:

Tennessee Valley Authority  
Chattanooga, Tennessee

Prepared by:

AECOM  
1600 Perimeter Park  
Morrisville, NC 27560  
USA  
aecom.com

January 2018

## Introduction

This report documents groundwater compliance monitoring activities performed at the Tennessee Valley Authority (TVA) Gallatin Fossil Plant (GAF), Ash Pond Complex as required under the United States Environmental Protection Agency (USEPA) coal combustion residuals (CCR) Rule (40 Code of Federal Regulations [CFR] 257.90 (e)). The groundwater monitoring system at the Ash Pond Complex is a multi-unit system (40 CFR 257.91 (d)) designed to monitor the following four CCR surface impoundments: Ash Pond A, Ash Pond E, Middle Pond A, and the Bottom Ash Pond (**Figure 1**). This report covers the compliance activities performed in 2017 and presents the monitoring activities planned for 2018.

To comply with the CCR Rule, the following actions were taken in 2017:

- The Ash Pond Complex multi-unit groundwater monitoring system was designed and installed prior to October 17, 2017 (40 CFR 257.90 (b)). A listing of wells in the network and well construction information is provided in **Table 1**; well locations are shown on **Figure 1**.
- The multi-unit monitoring system was certified by a qualified Professional Engineer licensed in Tennessee (40 CFR 257.91 (f)).
- The groundwater monitoring system certification was posted on TVA's publically-accessible website as required by 40 CFR 257.107 (h).
- A sampling and analysis program was developed and implemented as required by 40 CFR 257.93.
- The required baseline monitoring of network wells was initiated and independent baseline samples, as required by 40 CFR 257.94 (b), were collected with the exception of monitoring wells GAF-450C and GAF-450L as noted below in "Problems encountered and resolution".
- Statistical analysis of baseline data was performed in accordance with the CCR Rule.
- The sampling and analysis for the first detection monitoring event (Appendix III constituents only) was completed in October 2017 in accordance with the CCR Rule [40 CFR 257.94 (a)].

Problems encountered and resolution:

- Due to accessibility constraints, one groundwater monitoring well pair (GAF-450C and GAF-450L) was not installed until early 2017. As a result, there are five independent groundwater sampling events for these monitoring wells. This has no effect on the statistical analysis and reliability of the determinations provided in this report. The detection monitoring data from these wells was compared to the statistical background; as a result, the baseline data from these wells was not formally used in the statistical analysis.

The following activities are planned for 2018 to comply with CCR Rule groundwater monitoring requirements:

- In January 2018, groundwater data was evaluated in accordance with 40 CFR 257.93 (h) using the certified statistical method, as described in the Statistical Evaluation section below. Although not required to be included in this 2017 Annual CCR Rule Groundwater Monitoring Report, TVA has provided the January 15, 2018 determination of any statistically significant increases (SSIs) over background for the first detection monitoring event as shown in **Table 5**.
- For wells with fewer than 8 baseline samples (e.g., GAF-450C, GAF-450L), the balance of the baseline samples will be collected in 2018.
- A dedicated pump will be installed in well GAF-406L.
- Verification sampling and error checking will be conducted to confirm the results of the October 2017 detection monitoring event to investigate whether the SSI over background resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality as specified in 40 CFR 257.94 (e)(2).

- Alternate source(s), including natural variability, in accordance with 40 CFR 257.94 (e)(2), will be evaluated where applicable.
- Where applicable, semi-annual detection monitoring will be conducted in accordance with 40 CFR 257.94.
- Where applicable, assessment monitoring will be initiated in accordance with 40 CFR 257.94-95 if unable to establish that SSIs were the result of another source or an error.
- Further field and desktop Site-Characterization Investigations may be performed to improve the Conceptual Site Model (CSM).
- TVA's third-party Quality Assurance Program to evaluate groundwater analytical data will be continued and improved using best practices concerning field methods and validation techniques, as well as the application of the most appropriate statistical methods.
- The groundwater analytical data obtained in 2018 will be evaluated using appropriate statistical methods. Changes to the monitoring program will be implemented, as needed, to maintain compliance with 40 CFR 257.90 through 257.98.
- TVA will comply with recordkeeping requirements as specified in 40 CFR 257.105 (h), notification requirements specified in 40 CFR 257.106 (h), and internet requirements as specified in 40 CFR 257.107 (h).
- The next annual groundwater monitoring report, which will address groundwater monitoring activities undertaken in 2018, will be completed in January 2019.

## Groundwater Monitoring System

The Ash Pond Complex multi-unit groundwater monitoring well system contains 23 monitoring wells: 7 background monitoring wells and 16 downgradient monitoring wells. The monitoring well locations are shown on **Figure 1**, and monitoring well construction information is provided on **Table 1**.

The background monitoring wells (GAF-412C, GAF-412L, GAF-414L, GAF-426C, GAF-426L, GAF-427C, and GAF-427L) represent conditions unaffected by CCR (40 CFR 257.91 (a)(1) and (c)(1)). Four of the wells monitor groundwater conditions in the Lebanon Limestone, and three wells monitor groundwater in the shallower Carters Limestone (see **Table 1**).

The downgradient monitoring wells (24, GAF-402C, GAF-402L, GAF-405C, GAF-406L, GAF-410U, GAF-416C, GAF-422C, GAF-446C, GAF-449L, GAF-450C, GAF-450L, GAF-451C, GAF-452C, GAF-452L, and GAF-453C) monitor groundwater downgradient near the waste boundary (40 CFR 257.91 (a)(2) and (c)(1)). There are ten downgradient monitoring wells completed in the Carters Limestone, five monitoring wells in the Lebanon Limestone, and one monitoring well screened in alluvium/unconsolidated materials (**Table 1**).

The certification of the groundwater monitoring system required under 40 CFR 257.91 (f) is included in the facility operating record and on the facility website: <https://www.tva.gov/Environment/Environmental-Stewardship/Coal-Combustion-Residuals>. There have been no changes to the wells in the monitoring well system since the network certification on October 16, 2017, pursuant to 40 CFR 257.91 (f).

## Groundwater Sampling and Laboratory Analytical Results

The data obtained during the CCR Rule compliance monitoring in 2016-2017 is presented in this section.

## Groundwater Monitoring

As summarized on **Table 2**, a total of ten independent baseline monitoring events (Appendix III and IV constituents) were completed per 40 CFR 257.94 (b). Subsequently, the first detection monitoring event (Appendix III constituents only) was conducted in October 2017 (40 CFR 257.94). Low-flow groundwater sampling and analysis activities were conducted in accordance with the sampling and analysis program developed per 40 CFR 257.93.

## Groundwater Flow

Groundwater levels were measured in each monitoring well prior to well purging/sampling as required by 40 CFR 257.93 (c). The water level gauging dates for each event are presented in **Table 2**, and tabulated water level data and calculated hydraulic heads are presented in **Table 3**. **Figure 2** and **Figure 3** present, respectively, maps for the Carters and Lebanon formations showing the generalized direction of the hydraulic gradient based on groundwater elevations measured in October 2017.

At GAF, a dye trace study was performed, which provides information on groundwater velocities in the vicinity of the Ash Pond Complex. When dye was detected in a potential receptor location, apparent groundwater velocities were calculated. These velocities calculated during dye trace studies are presented in **Appendix A**. During the test, there were also dyes injected that did not appear to move away from the injection locations and were not detected at receptor locations (e.g., GAF-405C). Because the dyes were not detected, apparent velocities could not be calculated, but these results indicate little flow and low velocities in these areas. Overall, the dye trace study indicated a wide range of velocities, from very slow (e.g., GAF-405C) to very fast (e.g., locations north of the Ash Pond Complex; GAF-410U).

## Sampling Results

Groundwater samples were submitted to TestAmerica Laboratories for analysis. The field parameters measured and the laboratory analytical results are presented in **Tables 4 and 5**.

## Statistical Evaluation

In January 2018, in accordance with the statistical method certification for the Ash Pond Complex, background concentrations of Appendix III parameters were calculated using an Upper Prediction Limit (UPL) statistic. Separate background UPLs were calculated for the Carters and Lebanon Limestone formations. The calculated background concentrations for each parameter are provided on **Table 5**.

In January 2018, the calculated background values (the UPL) were compared to the October 2017 detection monitoring sample results at each downgradient monitoring well as required by 40 CFR 257.93 (h). Although not required to be included in this annual report for 2017, the January 15, 2018 determination (based on the current dataset) of statistically significant increases (SSIs) over background for Appendix III parameters is provided on **Table 5**. SSIs were found in at least one downgradient monitoring well for at least one Appendix III parameter, as shown on **Table 5**.

## Narrative Discussion of Transition between Monitoring Programs

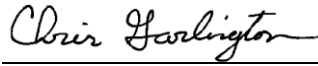
Verification sampling will be performed to confirm SSIs and evaluate whether they may have resulted from an error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality as specified in 40 CFR 257.94 (e)(2). In addition, where applicable, evaluation of alternate sources may also be undertaken (257.94 (e)(2)). If SSIs over background are not confirmed, semi-annual detection monitoring will continue. If TVA is unable to demonstrate that SSIs were a result of error or another source (including natural variability), TVA will establish and initiate an Assessment Monitoring program as specified in 40 CFR 257.95.

Baseline data for both Appendix III and IV constituents were required to be collected prior to the establishment of upper prediction limits (UPLs) or Groundwater Protection Standards (GWPS). Under a CCR-Rule required assessment monitoring program, GWPS will be established in accordance with 40 CFR 257.95 (h), at which time maximum contaminant levels (MCLs) may or may not be considered the appropriate GWPS depending on background well concentrations for each Appendix IV constituent. The appropriate GWPS will establish the assessment groundwater monitoring program and any assessment of corrective measures.

## Quality Information

Prepared by

---

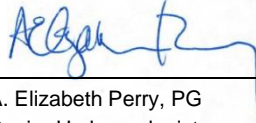


---

Chris Garlington  
Hydrogeologist

Reviewed by

---



---

A. Elizabeth Perry, PG  
Senior Hydrogeologist

Reviewed by

---



---

Gabriel W. Lang, PE  
Program Manager

## Figures

Figure 1 Ash Pond Complex Monitoring System Wells

Figure 2 Generalized Hydraulic Gradients - Carters Aquifer, October 2017

Figure 3 Generalized Hydraulic Gradients - Lebanon Aquifer, October 2017

## Tables

Table 1 Well Construction Information – Ash Pond Complex (Multi-Unit)

Table 2 Groundwater Sampling Summary – Ash Pond Complex, 2016-2017

Table 3 Groundwater Elevation Summary – Ash Pond Complex

Table 4 Baseline Sampling Groundwater Analytical Results – Ash Pond Complex

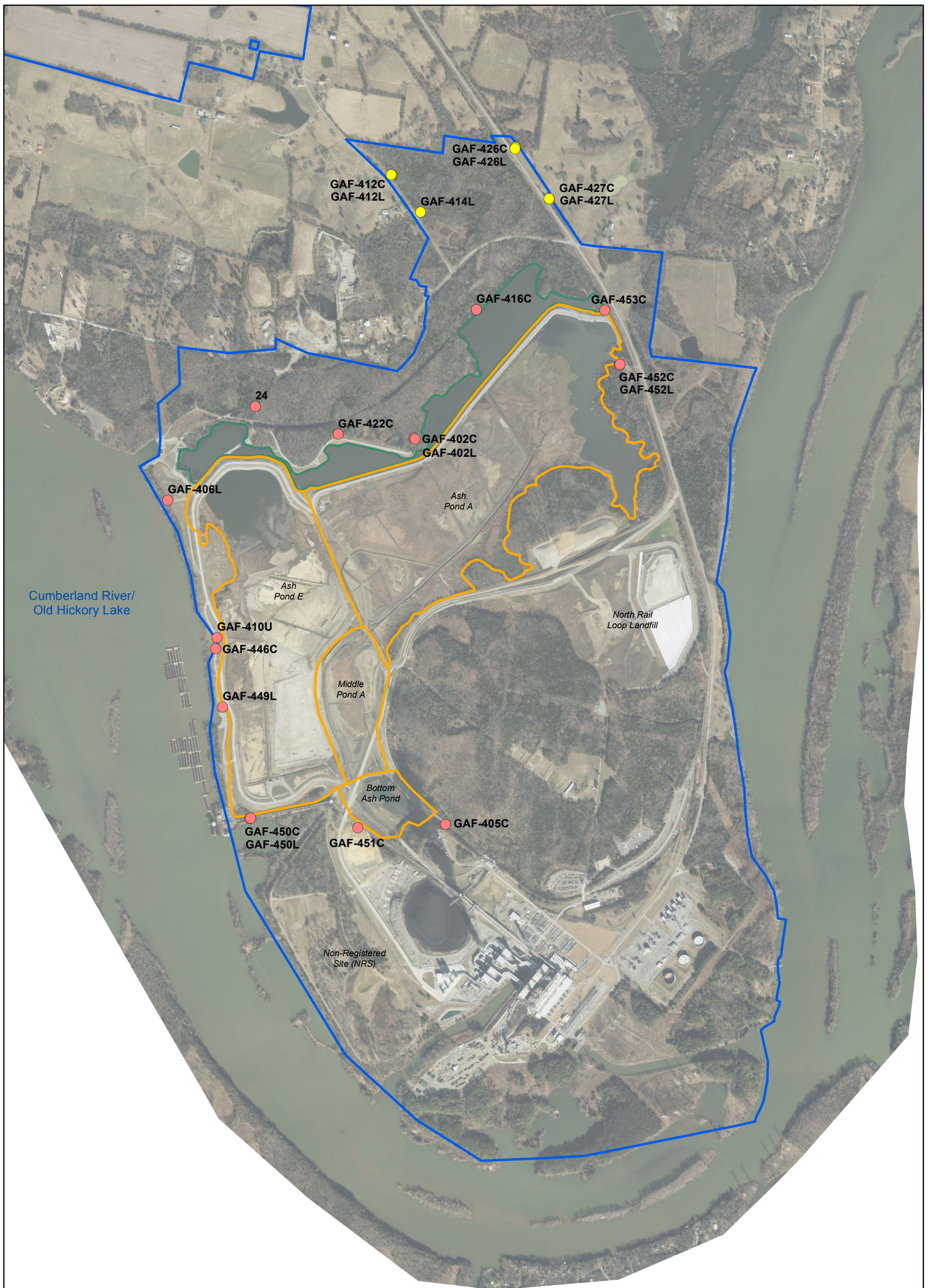
Table 5 Detection Monitoring Groundwater Analytical Results – Ash Pond Complex

## Appendices

Appendix A Dye Trace Velocity Table

## Figures

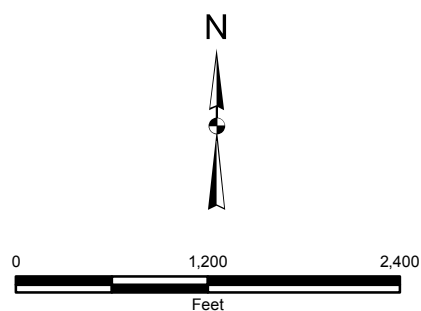




**LEGEND**

- CCR Rule Monitoring System - Background Well
- CCR Rule Monitoring System - Downgradient Well
- TVA Gallatin Fossil Plant Property Boundary (Approximate)
- Ash Pond Complex
- Stilling Ponds

NOTE: Aerial image dated February 2017



**AECOM**

**Figure 1**

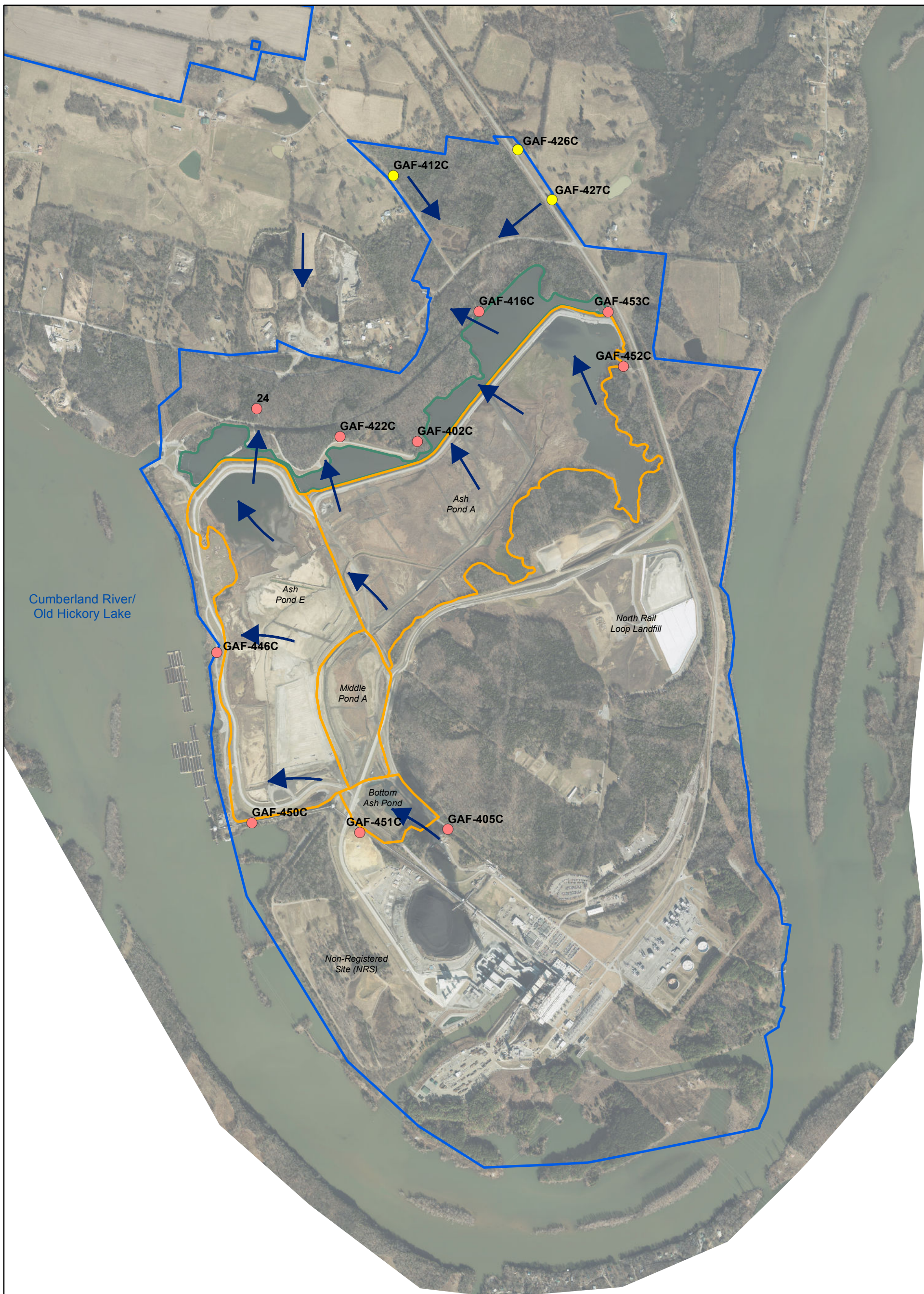
**ASH POND COMPLEX  
MONITORING SYSTEM WELLS**

DRAWN BY: MARK.P.SMITH	REVIEWED BY: C.GARLINGTON	APPROVED BY:	REVISION NUMBER: REV. 0
---------------------------	------------------------------	--------------	----------------------------

**GALLATIN FOSSIL PLANT  
TENNESSEE VALLEY AUTHORITY**

DATE: 1/2/2018	DEPT: FOSSIL AND HYDRO ENGINEERING
-------------------	---------------------------------------

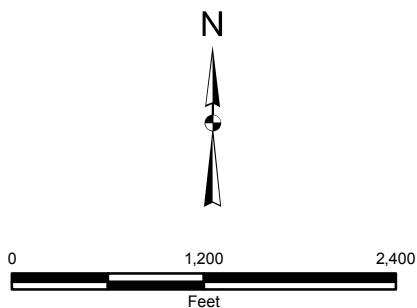




**LEGEND**

- CCR Rule Monitoring System - Background Well (Carters)
- CCR Rule Monitoring System - Downgradient Well (Carters)
- ➔ Hydraulic Gradient
- TVA Gallatin Fossil Plant Property Boundary (Approximate)
- Ash Pond Complex
- Stilling Ponds

NOTE: Aerial image dated February 2017



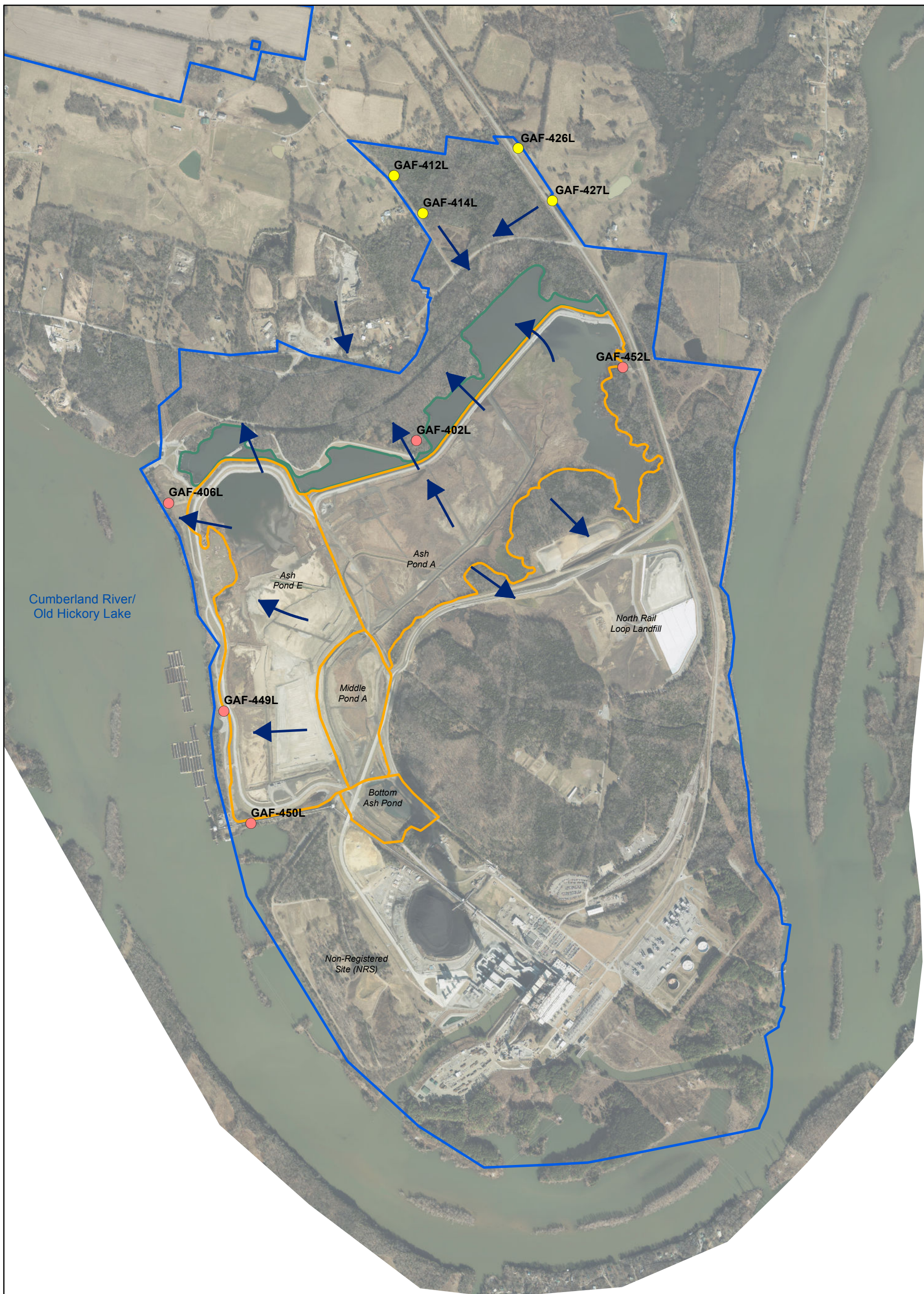
**AECOM**

**Figure 2**

**GENERALIZED HYDRAULIC GRADIENTS  
CARTERS AQUIFER, OCTOBER 2017**

DRAWN BY: MARK.P.SMITH	REVIEWED BY: C.GARLINGTON	APPROVED BY:	REVISION NUMBER: REV. 0
GALLATIN FOSSIL PLANT TENNESSEE VALLEY AUTHORITY			
DATE: 1/2/2018	DEPT: FOSSIL AND HYDRO ENGINEERING		

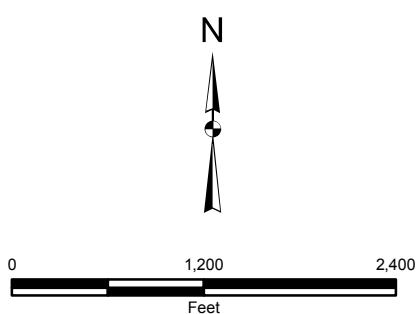




**LEGEND**

- CCR Rule Monitoring System - Background Well (Lebanon)
- CCR Rule Monitoring System - Downgradient Well (Lebanon)
- ➔ Hydraulic Gradient
- TVA Gallatin Fossil Plant Property Boundary (Approximate)
- Ash Pond Complex
- Stilling Ponds

NOTE: Aerial image dated February 2017



**AECOM**

**Figure 3**

**GENERALIZED HYDRAULIC GRADIENTS  
LEBANON AQUIFER, OCTOBER 2017**

DRAWN BY: MARK.P.SMITH	REVIEWED BY: C.GARLINGTON	APPROVED BY:	REVISION NUMBER: REV. 0
---------------------------	------------------------------	--------------	----------------------------

**GALLATIN FOSSIL PLANT  
TENNESSEE VALLEY AUTHORITY**

DATE: 1/3/2018	DEPT: FOSSIL AND HYDRO ENGINEERING
-------------------	---------------------------------------



## Tables

**Table 1**  
**Well Construction Information - Ash Pond Complex (Multi-Unit)**  
**CCR Rule Groundwater Monitoring System**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Well ID	UNID #	Position Relative to CCR Unit	Top of Casing Elevation (ft)	Ground Elevation (ft)	Screened Interval (ft btoc)	Screened Formation	Total Well Depth (ft btoc)	Pump Intake Depth (ft btoc)	Well Diameter (in) / Material	Well Co-ordinates	
										TN State Plane NAD27 Northing (ft)	TN State Plane NAD27 Easting (ft)
24	GAF-00-GW-43-005	Downgradient	464.13	461.6	20.3 - 30.3	Carters Limestone	30.5	25	2-in PVC	707910.82	1878249.14
GAF-402C	GAF-00-GW-43-010	Downgradient	464.03	460.3	18.8 - 28.8	Carters Limestone	29.2	24	4-in PVC	707480.11	1880332.05
GAF-402L	GAF-00-GW-43-011	Downgradient	464.93	460.8	75.2 - 85.2	Lebanon Limestone	85.7	80	2-in PVC	707494.16	1880320.69
GAF-405C	GAF-00-GW-43-014	Downgradient	486.46	482.7	23.2 - 41.8	Carters Limestone	41.8	31	2-in PVC	702448.03	1880730.21
GAF-406L	GAF-00-GW-43-015	Downgradient	471.54	467.5	48.0 - 58.0	Lebanon Limestone	58.4	NA	2-in PVC	706683.23	1877107.46
GAF-410U	GAF-00-GW-43-017	Downgradient	458.51	455.2	22.0 - 32.0	Unconsolidated	32.2	27	2-in PVC	704888.96	1877749.25
GAF-412C	GAF-00-GW-43-018	Background	477.64	473.9	43.6 - 63.6	Carters Limestone	63.9	54	4-in PVC	710931.17	1880022.99
GAF-412L	GAF-00-GW-43-019	Background	477.58	473.7	109.5 - 129.5	Lebanon Limestone	129.5	123	4-in PVC	710929.65	1880028.63
GAF-414L	GAF-00-GW-43-021	Background	481.45	478.6	93.2 - 103.2	Lebanon Limestone	103.2	98	4-in PVC	710438.90	1880406.55
GAF-416C	GAF-00-GW-43-023	Downgradient	466.87	464.2	32.0 - 52.0	Carters Limestone	52.3	42	2-in PVC	709168.17	1881134.07
GAF-422C	GAF-00-GW-43-028	Downgradient	463.78	460.1	19.6 - 35.6	Carters Limestone	35.7	31	4-in PVC	707542.45	1879330.87
GAF-426C	GAF-00-GW-43-029	Background	505.58	501.7	40.3 - 60.3	Carters Limestone	60.4	57	4-in PVC	711267.94	1881639.45
GAF-426L	GAF-00-GW-43-030	Background	506.83	502.6	176.7 - 186.7	Lebanon Limestone	187.0	183	2-in PVC	711281.94	1881642.00
GAF-427C	GAF-00-GW-43-031	Background	489.76	485.7	60.5 - 70.5	Carters Limestone	71.0	68	4-in PVC	710614.65	1882083.09
GAF-427L	GAF-00-GW-43-032	Background	488.41	484.2	144.4 - 159.4	Lebanon Limestone	159.9	152	4-in PVC	710606.97	1882087.73
GAF-446C	GAF-00-GW-43-034	Downgradient	461.06	457.3	23.9 - 33.9	Carters Limestone	34.4	29	4-in PVC	704742.14	1877728.58
GAF-449L	GAF-00-GW-43-036	Downgradient	463.09	458.2	61.3 - 71.3	Lebanon Limestone	71.8	68	4-in PVC	703982.89	1877822.35
GAF-450C	GAF-00-GW-43-050	Downgradient	466.73	463.7	51.2 - 57.2	Carters Limestone	57.2	55	4-in PVC	702528.53	1878184.63
GAF-450L	GAF-00-GW-43-051	Downgradient	466.62	463.6	77.6 - 95.5	Lebanon Limestone	95.5	95	3-in PVC	702526.39	1878174.14
GAF-451C	GAF-00-GW-43-037	Downgradient	490.17	485.8	53.0 - 63.0	Carters Limestone	63.5	63	4-in PVC	702406.33	1879585.84
GAF-452C	GAF-00-GW-43-038	Downgradient	484.13	480.6	102.3 - 112.3	Carters Limestone	112.4	109	4-in PVC	708455.27	1883011.13
GAF-452L	GAF-00-GW-43-039	Downgradient	484.31	480.7	159.7 - 169.7	Lebanon Limestone	170.4	167	4-in PVC	708438.06	1883004.23
GAF-453C	GAF-00-GW-43-040	Downgradient	467.78	464.2	49.5 - 59.5	Carters Limestone	59.8	56	4-in PVC	709163.45	1882810.94

**Notes:**

Elevation information from DDS Survey; elevation in National Geodetic Vertical Datum 1929.  
Well co-ordinates based on North America Datum of 1927  
Well construction information based on data provided by TVA Well Inventory, January 29, 2018.  
CCR - coal combustion residual  
ft btoc - feet below top of casing  
in - inches (inside diameter)

**Table 2**  
**Groundwater Sampling Summary - Ash Pond Complex, 2016-2017**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Round Number	Sample Dates	Groundwater Gauging Date	Monitoring Program	Parameters Sampled	Number of Wells Sampled
1	November 14-18, 2016	November 14, 2016	Baseline Monitoring (257.94(b))	Appendix III, Appendix IV, major ions and field parameters	Background: 7 Downgradient: 14 (a)
2	December 13-19, 2016	December 12, 2016	Baseline Monitoring (257.94(b))	Appendix III, Appendix IV, major ions and field parameters	Background: 7 Downgradient: 14 (a)
3	January 10-18, 2017	January 9, 2017	Baseline Monitoring (257.94(b))	Appendix III, Appendix IV, major ions and field parameters	Background: 7 Downgradient: 14 (a)
4	February 15-23, 2017	February 13, 2017	Baseline Monitoring (257.94(b))	Appendix III, Appendix IV, major ions and field parameters	Background: 7 Downgradient: 16
5	March 15-23, 2017	March 13, 2017	Baseline Monitoring (257.94(b))	Appendix III, Appendix IV, major ions and field parameters	Background: 7 Downgradient: 16
6	April 19-26, 2017	April 18, 2017	Baseline Monitoring (257.94(b))	Appendix III, Appendix IV, major ions and field parameters	Background: 7 Downgradient: 16
7	May 16-25, 2017	May 15, 2017	Baseline Monitoring (257.94(b))	Appendix III, Appendix IV, major ions and field parameters	Background: 7 Downgradient: 16
8	June 16-22, 2017	June 12, 2017	Baseline Monitoring (257.94(b))	Appendix III, Appendix IV, major ions and field parameters	Background: 7 Downgradient: 16
9	July 18-20, 2017	July 17, 2017	Baseline Monitoring (257.94(b))	Appendix III, Appendix IV, major ions and field parameters	Background: 7 Downgradient: 13 (b)
10	August 22-24, 2017	August 21, 2017	Baseline Monitoring (257.94(b))	Appendix III, Appendix IV, major ions and field parameters	Background: 7 Downgradient: 13 (b)
11	October 03-05, 2017	October 2, 2017	Detection Monitoring (257.94(a))	Appendix III, major ions and field parameters	Background: 7 Downgradient: 16

**Notes:**

**Appendix III Constituents:** Boron, Calcium, Chloride, Fluoride, pH, Sulfate, Total Dissolved Solids (TDS)

**Appendix IV Constituents:** Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lead, Lithium, Mercury, Molybdenum, Radium 226 + 228, Selenium, Thallium

(a) - Wells GAF-450C and GAF-450L not yet installed

(b) - Wells GAF-406L, GAF-450C and GAF-450L not sampled

**Table 3**  
**Groundwater Elevation Summary - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Gauging Date	2016-11-14			2016-12-12			2017-01-09			2017-02-13		
	Well ID	Reference Elevation (ft AMSL)	Water Level Measurement (ft)	Hydraulic Head (ft AMSL)	Reference Elevation (ft AMSL)	Water Level Measurement (ft)	Hydraulic Head (ft AMSL)	Reference Elevation (ft AMSL)	Water Level Measurement (ft)	Hydraulic Head (ft AMSL)	Reference Elevation (ft AMSL)	Water Level Measurement (ft)
24	464.13	19.72	444.41	464.13	19.58	444.55	464.13	19.07	445.06	464.13	19.59	444.54
GAF-402C	464.03	16.09	447.94	464.03	15.90	448.13	464.03	15.53	448.50	464.03	16.00	448.03
GAF-402L	464.93	17.02	447.91	464.93	16.89	448.04	464.93	16.43	448.50	464.93	16.92	448.01
GAF-405C	486.46	9.82	476.64	486.46	5.80	480.66	486.46	6.97	479.49	486.46	9.57	476.89
GAF-406L	471.54	27.01	444.53	471.54	27.01	444.53	471.54	26.45	445.09	471.54	26.93	444.61
GAF-410U	458.51	8.00	450.51	458.51	5.73	452.78	458.51	4.64	453.87	458.51	5.05	453.46
GAF-412C	477.64	32.16	445.48	477.64	31.98	445.66	477.64	31.41	446.23	477.64	31.98	445.66
GAF-412L	477.58	28.58	449.00	477.58	27.80	449.78	477.58	27.34	450.24	477.58	27.71	449.87
GAF-414L	481.45	34.88	446.57	481.45	34.39	447.06	481.45	33.89	447.56	481.45	34.28	447.17
GAF-416C	466.87	21.82	445.05	466.87	21.68	445.19	466.87	20.99	445.88	466.87	21.52	445.35
GAF-422C	463.78	19.23	444.55	463.78	19.18	444.60	463.78	18.66	445.12	463.78	19.16	444.62
GAF-426C	505.58	48.05	457.53	505.58	47.92	457.66	505.58	42.70	462.88	505.58	46.49	459.09
GAF-426L	506.83	55.13	451.70	506.83	54.52	452.31	506.83	48.90	457.93	506.83	51.15	455.68
GAF-427C	489.76	44.90	444.86	489.76	44.40	445.36	489.76	42.25	447.51	489.76	43.70	446.06
GAF-427L	488.41	42.70	445.71	488.41	41.81	446.60	488.41	37.50	450.91	488.41	39.34	449.07
GAF-446C	461.06	10.22	450.84	461.06	7.76	453.30	461.06	6.95	454.11	461.06	7.55	453.51
GAF-449L	463.09	12.45	450.64	463.09	11.20	451.89	463.09	9.89	453.20	463.09	10.79	452.30
GAF-450C	NA	NA	NA	NA	NA	NA	NA	NA	NA	466.73	19.36	447.37
GAF-450L	NA	NA	NA	NA	NA	NA	NA	NA	NA	466.62	17.36	449.26
GAF-451C	493.05	19.18	473.87	493.06	16.60	476.46	NA	NA	NA	489.50	11.61	477.89
GAF-452C	484.13	32.40	451.73	484.13	31.45	452.68	484.13	28.26	455.87	484.13	29.62	454.51
GAF-452L	484.31	32.44	451.87	484.31	31.50	452.81	484.31	28.33	455.98	484.31	29.65	454.66
GAF-453C	467.78	17.98	449.80	467.78	17.20	450.58	467.78	13.01	454.77	467.78	14.66	453.12
<b>Surface Water ID</b>												
BOTTOM ASH CHANNEL	NA	NA	480.48(b,e)	NA	NA	480.14(b)	NA	NA	480.24(c)	NA 478.5	NA 1.8	480.26(b) 480.30
BOTTOM ASH POND	NA	NA	478.81(b,e)	NA	NA	478.92(b)	NA	NA	478.89(c)	NA 476.91	NA 1.94	478.83(b) 478.85
GLOVERS POND	NA	NA	NA	NA	NA	448.75(b)	NA	NA	NA	NA 447.52	NA 4.6	453.01(b) 452.12
ASH POND A	NA	NA	464.46(b,e)	NA	NA	464.48(b)	NA	NA	464.50(c)	NA 461.99	NA 2.74	464.70(b) 464.73
STILLING POND B	NA	NA	NA	NA	NA	NA	NA	NA	456.73(c)	NA 454.89	NA 1.96	456.83(b) 456.85
STILLING POND D	NA	NA	456.47(b,e)	NA	NA	456.53(b)	NA	NA	456.29(c)	NA	NA	456.45(b)
ASH POND E	NA	NA	453.31(b,e)	NA	NA	453.41(b)	NA	NA	455.59(c)	NA 451.2	NA 1.79	452.82(b) 452.99
CUMBERLAND RIVER	NA	NA	444.47(d,e)	NA	NA	444.47(d)	NA	NA	444.90(d)	NA	NA	444.46(d)

**Table 3**  
**Groundwater Elevation Summary - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Gauging Date	2017-03-13			2017-04-18			2017-05-15			2017-06-12		
Well ID	Reference Elevation (ft AMSL)	Water Level Measurement (ft)	Hydraulic Head (ft AMSL)	Reference Elevation (ft AMSL)	Water Level Measurement (ft)	Hydraulic Head (ft AMSL)	Reference Elevation (ft AMSL)	Water Level Measurement (ft)	Hydraulic Head (ft AMSL)	Reference Elevation (ft AMSL)	Water Level Measurement (ft)	Hydraulic Head (ft AMSL)
24	464.13	19.32	444.81	464.13	19.19	444.94	464.13	18.35	445.78	464.13	19.46	444.67
GAF-402C	464.03	16.06	447.97	464.03	15.54	448.49	464.03	15.04	448.99	464.03	16.02	448.01
GAF-402L	464.93	17.04	447.89	464.93	16.53	448.40	464.93	16.09	448.84	464.93	17.04	447.89
GAF-405C	486.46	5.49	480.97	486.46	6.68	479.78	486.46	4.58	481.88	486.46	6.85	479.61
GAF-406L	471.54	27.02	444.52	471.54	26.55	444.99	471.54	26.03	445.51	471.54	27.01	444.53
GAF-410U	458.51	4.52	453.99	458.51	4.53	453.98	458.51	3.98	454.53	458.51	4.66	453.85
GAF-412C	477.64	31.65	445.99	477.64	31.59	446.05	477.64	31.19	446.45	477.64	31.96	445.68
GAF-412L	477.58	27.06	450.52	477.58	27.44	450.14	477.58	26.76	450.82	477.58	27.33	450.25
GAF-414L	481.45	33.66	447.79	481.45	33.97	447.48	481.45	33.16	448.29	481.45	34.00	447.45
GAF-416C	466.87	20.53	446.34	466.87	21.06	445.81	466.87	19.30	447.57	466.87	19.67	447.20
GAF-422C	463.78	19.27	444.51	463.78	18.77	445.01	463.78	18.23	445.55	463.78	19.26	444.52
GAF-426C	505.58	38.90	466.68	505.58	44.78	460.80	505.58	38.56	467.02	505.58	41.35	464.23
GAF-426L	506.83	48.65	458.18	506.83	50.96	455.87	506.83	47.54	459.29	506.83	48.50	458.33
GAF-427C	489.76	39.98	449.78	NA	NA	NA	489.76	39.02	450.74	489.76	41.93	447.83
GAF-427L	488.41	37.12	451.29	488.41	39.41	449.00	488.41	36.17	452.24	488.41	37.81	450.60
GAF-446C	461.06	6.89	454.17	461.06	6.94	454.12	461.06	6.49	454.57	461.06	7.17	453.89
GAF-449L	463.09	10.00	453.09	463.09	10.23	452.86	463.09	9.33	453.76	463.09	10.21	452.88
GAF-450C	466.73	19.19	447.54	466.73	19.09	447.64	466.73	18.32	448.41	466.73	19.12	447.61
GAF-450L	466.62	16.94	449.68	466.62	17.29	449.33	466.62	16.46	450.16	466.62	17.14	449.48
GAF-451C	490.17	10.48	479.69	490.17	10.58	479.59	490.17	9.97	480.20	490.17	10.85	479.32
GAF-452C	484.13	28.49	455.64	484.13	29.82	454.31	484.13	27.52	456.61	484.13	27.15	456.98
GAF-452L	484.31	28.56	455.75	484.31	29.87	454.44	484.31	27.60	456.71	484.31	28.25	456.06
GAF-453C	467.78	13.40	454.38	467.78	15.15	452.63	467.78	12.56	455.22	467.78	13.04	454.74
<b>Surface Water ID</b>												
BOTTOM ASH CHANNEL	478.50	1.76	480.26	478.5	1.66	480.16	478.5	1.97	480.47	478.5	1.85	480.35
BOTTOM ASH POND	476.91	1.98	478.89	476.91	2	478.91	476.91	1.9	478.81	476.91	1.95	478.86
GLOVERS POND	447.52 NA	62.00(a) NA	509.52(a) 447.87(c)	447.52	3.38	450.9	447.52	7.1	454.62	447.52	7.9	455.42
ASH POND A	NA 461.99	NA 2.74	464.74(b) 464.73	461.99	2.68	464.67	461.99	2.65	464.64	461.99	2.7	464.69
STILLING POND B	454.89	1.98	456.87	454.89	1.94	456.83	454.89	1.9	456.79	454.89	1.95	456.84
STILLING POND D	NA 454.74	NA 1.94	456.58(b) 456.68	454.74	1.9	456.64	459.94	3.56	456.38	459.94	3.53	456.41
ASH POND E	451.2	DRY	DRY	451.2	DRY	DRY	451.2	1	452.2	451.2	DRY	DRY
CUMBERLAND RIVER	NA	NA	NA	NA	NA	444.95(d)	NA	NA	445.22(d)	NA	NA	444.34(d)



**Table 3**  
**Groundwater Elevation Summary - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Gauging Date	2017-07-17			2017-08-21			2017-10-02		
	Well ID	Reference Elevation (ft AMSL)	Water Level Measurement (ft)	Hydraulic Head (ft AMSL)	Reference Elevation (ft AMSL)	Water Level Measurement (ft)	Hydraulic Head (ft AMSL)	Reference Elevation (ft AMSL)	Water Level Measurement (ft)
24	464.13	19.07	445.06	464.13	19.68	444.45	464.13	19.65	444.48
GAF-402C	464.03	15.55	448.48	464.03	16.50	447.53	464.03	16.02	448.01
GAF-402L	464.93	16.52	448.41	464.93	17.00	447.93	464.93	16.97	447.96
GAF-405C	486.46	8.29	478.17	486.46	9.67	476.79	486.46	7.80	478.66
GAF-406L	471.54	26.38	445.16	471.54	26.97	444.57	471.54	26.94	444.60
GAF-410U	458.51	5.39	453.12	458.51	7.07	451.44	458.51	6.57	451.94
GAF-412C	477.64	32.51	445.13	477.64	32.54	445.10	477.64	32.35	445.29
GAF-412L	477.58	27.83	449.75	477.58	28.00	449.58	477.58	27.97	449.61
GAF-414L	481.45	34.22	447.23	481.45	34.81	446.64	481.45	34.85	446.60
GAF-416C	466.87	20.85	446.02	466.87	21.60	445.27	466.87	21.83	445.04
GAF-422C	463.78	18.69	445.09	463.78	19.25	444.53	463.78	19.22	444.56
GAF-426C	505.58	46.09	459.49	505.58	47.74	457.84	505.58	53.73	451.85
GAF-426L	506.83	51.85	454.98	506.83	53.88	452.95	506.83	47.50	459.33
GAF-427C	489.76	43.58	446.18	489.76	44.81	444.95	489.76	44.67	445.09
GAF-427L	488.41	40.25	448.16	488.41	42.44	445.97	488.41	42.13	446.28
GAF-446C	461.06	7.83	453.23	461.06	9.53	451.53	461.06	8.98	452.08
GAF-449L	463.09	10.74	452.35	463.09	12.11	450.98	463.09	11.79	451.30
GAF-450C	466.73	18.97	447.76	466.73	19.63	447.10	466.73	19.82	446.91
GAF-450L	466.62	17.08	449.54	466.62	17.70	448.92	466.62	17.74	448.88
GAF-451C	490.17	11.91	478.26	490.17	13.57	476.60	490.17	13.38	476.79
GAF-452C	484.13	30.31	453.82	484.13	31.95	452.18	484.13	32.13	452.00
GAF-452L	484.31	30.36	453.95	484.31	32.05	452.26	484.31	32.19	452.12
GAF-453C	467.78	15.78	452.00	467.78	17.46	450.32	467.78	17.14	450.64
<b>Surface Water ID</b>									
BOTTOM ASH CHANNEL	478.5	1.80(f)	480.30(f)	478.5	1.85	480.35	NA	NA	NA
BOTTOM ASH POND	476.91	NA	NA	476.91	2	478.91	NA	NA	NA
GLOVERS POND	447.52	2.3	449.82	447.52	2.5	450.02	NA	NA	NA
ASH POND A	461.99	1.78(a)	463.77(a)	461.99	2.5	464.49	NA	NA	NA
STILLING POND B	454.89	2	456.89	454.89	2.08	456.97	NA	NA	NA
STILLING POND D	459.94	1.98	457.96	459.94	2.52	457.42	NA	NA	NA
ASH POND E	451.2	DRY	DRY	451.2	DRY	DRY	NA	NA	NA
CUMBERLAND RIVER	NA	NA	445.08(d)	NA	NA	444.56(d)	NA	NA	444.59(d)

**Notes:**

Well measurements taken from top of casing

AMSL - above mean sea level

ft - feet

NA - Data not available or no measurement taken due to site conditions

(e.g., accessibility, well not installed, safety issues, gauge interference, etc.)

(a) Field measurement suspect

(b) Data collected via survey

(c) Data collected via transducer

(d) Data collected via TVA Instrumentation Database

(e) Surface water elevations surveyed on 11/15/2016

(f) Reading approximate, most often mud on the pond gauge

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			24	24	24	24	24	24	24	24	24	24
Sample Date			11/17/2016	11/17/2016	12/16/2016	12/16/2016	1/10/2017	1/10/2017	2/22/2017	2/22/2017	3/21/2017	3/21/2017
Well Location			Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID			GAF-GW-24-11172016	GAF-GW-903-11172016	GAF-GW-24-12162016	GAF-GW-903-12162016	GAF-GW-24-01102017	GAF-GW-903A-01102017	GAF-GW-24-02222017	GAF-GW-903B-02222017	GAF-GW-24-03212017	GAF-GW-903B-03212017
Sample Type			N	FD	N	FD	N	FD	N	FD	N	FD
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	0.93	NA	0.75	NA	0.66	NA	0.46	NA	0.62	NA
ORP	ORP	MV	-102.3	NA	25.5	NA	105.4	NA	93.6	NA	166.3	NA
pH, Field	PHFLD	pH units	6.73	NA	6.5	NA	6.52	NA	6.54	NA	6.59	NA
Specific Conductance, Field	CONDSPECFLD	umhos/cm	1104	NA	1122	NA	1172	NA	1205	NA	1226	NA
Temperature	TEMP	deg C	17.68	NA	15.7	NA	15.39	NA	14.86	NA	14.6	NA
Turbidity, field	TURB-FIELD	NTU	1.82	NA	0.95	NA	0.62	NA	1.36	NA	1.89	NA
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	498	584	493	479	463	447	489	491	456	464
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	498	584	493	479	463	447	489	491	456	464
Chloride	16887-00-6	MG/L	1.87	1.85	2.29	2.27	1.71	2.09	1.70	1.01 J	1.71	1.63
Fluoride	16984-48-8	MG/L	0.0659 J	0.0614 J	0.0623 U*	0.0581 U*	0.0753 J	0.0679 J	0.0293 U	0.0374 J	0.107	0.0595 J
Sulfate	14808-79-8	MG/L	267 U*	277 U*	296	276	337	299	303 J	341	399	385
Total Dissolved Solids	TDS	MG/L	783	785	828	830	889	889	867	864	953	951
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000178 U*	0.000190 U*	0.000374 U*	0.000387 U*	0.000238 U*	0.000252 U*	0.000443 U	0.000773 U*	0.000443 U	0.000443 U
Arsenic	7440-38-2	MG/L	0.000147 U*	0.000178 U*	0.000213 J	0.000179 J	0.000176 U*	0.000196 U*	0.000220 U	0.000220 U	0.000220 U	0.000220 U
Barium	7440-39-3	MG/L	0.0165	0.0165	0.0213 J	0.0215 J	0.0128	0.0128	0.0105	0.0120	0.0123 U*	0.0120 U*
Beryllium	7440-41-7	MG/L	0.000102 U	0.000102 U	0.000102 U	0.000102 U	0.000102 U	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	0.0684 U*	0.0636 U*	0.0777	0.0743	0.0655 J	0.0671 J	0.0570 J	0.0644	0.0773 J	0.0748 J
Cadmium	7440-43-9	MG/L	0.000152 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	0.000179 U*	0.000127 U*	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	245	242	228	227	256	261	232	234	272	272
Chromium	7440-47-3	MG/L	0.000339 U	0.000339 U	0.000339 U	0.000339 U	0.000339 U	0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U
Cobalt	7440-48-4	MG/L	0.0000218 U	0.0000218 U	0.0000218 U	0.0000218 U	0.0000218 U	0.0000320 U*	0.0000947 U	0.000178 J	0.000122 U*	0.0000947 U
Lead	7439-92-1	MG/L	0.0000675 U	0.0000675 U	0.0000675 U	0.0000675 U	0.0000675 U	0.0000675 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U
Lithium	7439-93-2	MG/L	0.000786 U	0.000786 U	0.00130 U*	0.00127 U*	0.00500 U*	0.00559 U*	0.00212 U	0.00212 U	0.00212 U	0.00212 U
Magnesium	7439-95-4	MG/L	10.2	10.1	9.76	9.71	11.0	11.2	9.62 J	10.1	10.9	10.9
Mercury	7439-97-6	MG/L	0.0000521 U	0.0000521 U	0.0000521 U	0.0000521 U	0.0000521 U	0.0000521 U	0.000200 U	0.000200 U	0.0000653 U	0.0000653 U
Molybdenum	7439-98-7	MG/L	0.00191 J	0.00197 J	0.00209 J	0.00171 J	0.00341 J	0.00354 J	0.00281 U*	0.00387 J	0.00370 U*	0.00371 U*
Potassium	7440-09-7	MG/L	1.11	1.10	1.09	1.08	1.21	1.24	1.07	1.13	1.20	1.19
Selenium	7782-49-2	MG/L	0.000638 U*	0.000745 U*	0.000348 U	0.000348 U	0.000970 U*	0.000348 U*	0.00127 U	0.00127 U	0.00127 U	0.00127 U
Sodium	7440-23-5	MG/L	1.21 U*	1.20	1.19	1.18	1.29	1.33	1.10	1.13	1.26	1.21
Thallium	7440-28-0	MG/L	0.0000360 U	0.0000360 U	0.0000360 U	0.0000360 U	0.0000360 U	0.0000360 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.192 U	0.228 U	0.654 UJ	0.289 UJ	0.229 U	0.129 U	0.972 U	0.885 U	0.363 U	0.644 U*
Radium 228	15262-20-1	pCi/L	0.192 U	0.0584 U	0.627 UJ	0.289 UJ	0.229 U	0.129 U	0.586 U	0.435 U	0.363 U	0.580 U*
Radium-226	13982-63-3	pCi/L	-0.0512 U	0.170 U	0.0268 U	-0.0582 U	-0.0604 U	-0.0337 U	0.385 U	0.450 U	-0.0214 U	0.0638 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			24	24	24	24	24	24
Sample Date			4/24/2017	4/24/2017	5/24/2017	6/20/2017	7/19/2017	8/23/2017
Well Location			Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID			GAF-GW-24-04242017	GAF-GW-903A-04242017	GAF-GW-24-05242017	GAF-GW-24-06202017	GAF-GW-24-07192017	GAF-GW-24-08232017
Sample Type			N	FD	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>								
Dissolved Oxygen	DO	MG/L	1.75	NA	0.24	0.84	0.22	0.94
ORP	ORP	MV	165.2	NA	19.5	97.0	64.1	98.2
pH, Field	PHFLD	pH units	6.69	NA	6.68	6.61	6.63	6.66
Specific Conductance, Field	CONDSPECFLD	umhos/cm	1040	NA	930	908	1012	1061
Temperature	TEMP	deg C	14.4	NA	14.6	15.0	15.9	16.9
Turbidity, field	TURB-FIELD	NTU	2.91	NA	2.75	0.84	0.51	0.43
<b>General Chemistry</b>								
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	483	518	378	476	494	492
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	483	518	378	476	494	492
Chloride	16887-00-6	MG/L	1.71	1.57	1.79	1.78	2.13	2.54
Fluoride	16984-48-8	MG/L	0.0445 J	0.0350 J	0.0379 J	0.0491 J	0.0624 J	0.0453 J
Sulfate	14808-79-8	MG/L	274	271	292	303	271	273
Total Dissolved Solids	TDS	MG/L	779	771	842	804	765	784
<b>Metals, Total</b>								
Antimony	7440-36-0	MG/L	0.000513 J	0.000443 U	0.000443 U	0.000616 U*	0.000513 U*	0.000443 U
Arsenic	7440-38-2	MG/L	0.000220 U	0.000220 U	0.000502 J	0.000282 U*	0.000319 U*	0.000340 U*
Barium	7440-39-3	MG/L	0.0161	0.0169	0.0108	0.00985 J	0.00820 J	0.00889 U*
Beryllium	7440-41-7	MG/L	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	0.0607 J	0.0610 J	0.0643 J	0.0659 J	0.175	0.168
Cadmium	7440-43-9	MG/L	0.0000781 U	0.0000781 U	0.0000880 J	0.0000800 J	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	249	255	269	243	238	231
Chromium	7440-47-3	MG/L	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000382 J
Cobalt	7440-48-4	MG/L	0.0000947 U	0.0000947 U	0.000105 J	0.0000947 U	0.0000947 U	0.0000947 U
Lead	7439-92-1	MG/L	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U
Lithium	7439-93-2	MG/L	0.00245 U*	0.00212 U	0.00257 U*	0.00212 U	0.00212 U	0.00212 U
Magnesium	7439-95-4	MG/L	9.83	9.88	10.3	9.77	9.84	9.75
Mercury	7439-97-6	MG/L	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 UJ
Molybdenum	7439-98-7	MG/L	0.00300 J	0.00247 J	0.00395 U*	0.00335 J	0.00248 J	0.00203 J
Potassium	7440-09-7	MG/L	1.01	1.03	1.30	1.16	1.16	1.09
Selenium	7782-49-2	MG/L	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 UJ
Sodium	7440-23-5	MG/L	1.11	1.12	1.32	1.25	1.40	1.37
Thallium	7440-28-0	MG/L	0.0000531 U	0.0000531 U	0.000141 U*	0.0000531 U	0.0000531 U	0.0000531 U
<b>Radiological</b>								
Radium 226 + Radium 228	RA226/228	pCi/L	0.406 UJ	0.447 UJ	0.574 UR	0.552 U	0.706 U*	0.247 U
Radium 228	15262-20-1	pCi/L	0.256 UJ	0.258 UJ	0.574 UR	0.359 U	0.665 U*	0.0181 U
Radium-226	13982-63-3	pCi/L	0.150 U	0.189 U	-0.0840 UJ	0.193 U	0.0417 U	0.229 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-402C	GAF-402C	GAF-402C	GAF-402C	GAF-402C	GAF-402C	GAF-402C	GAF-402C	GAF-402C	GAF-402C
Sample Date			11/15/2016	11/15/2016	12/13/2016	1/12/2017	2/20/2017	3/20/2017	4/24/2017	5/24/2017	6/19/2017	7/18/2017
Well Location			Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID			GAF-GW-402C-11152016	GAF-GW-903-11152016	GAF-GW-402C-12132016	GAF-GW-402C-01122017	GAF-GW-402C-02202017	GAF-GW-402C-03202017	GAF-GW-402C-04242017	GAF-GW-402C-05242017	GAF-GW-402C-06192017	GAF-GW-402C-07182017
Sample Type			N	FD	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	0.32	NA	0.36	0.84	1	0.28	0.16	0.22	0.20	0.28
ORP	ORP	MV	-127.3	NA	-50	39.5	-173	-8.3	50.2	54.8	-27.5	-56.7
pH, Field	PHFLD	pH units	7.48	NA	7.46	7.41	7.47	7.08	7.01	7.00	7.05	7.02
Specific Conductance, Field	CONDSPECFLD	umhos/cm	344	NA	529	643	730	587	680	622	473.2	518.0
Temperature	TEMP	deg C	18.74	NA	17.59	17.23	16.74	16.2	15.7	16.0	16.4	17.3
Turbidity, field	TURB-FIELD	NTU	0.88	NA	0.43	2.83	0.65	1.09	0.64	0.78	0.56	0.77
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	214	202	189	268	283	278	331	280	288	259
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	214	202	189	268	283	278	331	280	288	259
Chloride	16887-00-6	MG/L	7.02	7.01	8.68	8.33	9.17	9.59	6.17	7.66	7.67	8.54
Fluoride	16984-48-8	MG/L	0.427	0.441	0.362 U*	0.239	0.183	0.341	0.235	0.260	0.340	0.307
Sulfate	14808-79-8	MG/L	14.6	14.3	24.7	81.0	82.3	59.0	41.6	41.6	53.1	63.4
Total Dissolved Solids	TDS	MG/L	206	205	220	360	322	345 J	321	319	294	327
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000275 U*	0.000282 U*	0.000311 U*	0.000443 U	0.000443 U	0.000443 UJ	0.000443 U	0.000689 U*	0.000605 U*	0.00486 U*
Arsenic	7440-38-2	MG/L	0.0276	0.0268	0.0281	0.00842	0.00810	0.00501	0.00265	0.00422	0.00882	0.0101
Barium	7440-39-3	MG/L	0.0797	0.0801	0.0802	0.116	0.0804	0.0806	0.0861	0.0702	0.0752	0.0786
Beryllium	7440-41-7	MG/L	0.000102 U	0.000102 U	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	0.327	0.329	0.349	0.331 J	0.323	0.251	0.229	0.219	0.251	0.268
Cadmium	7440-43-9	MG/L	0.000152 U	0.000152 U	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	54.8	55.2	55.4	105	88.5	92.7	102	92.2	79.4	85.4
Chromium	7440-47-3	MG/L	0.000339 U	0.000339 U	0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000596 U*	0.000378 U
Cobalt	7440-48-4	MG/L	0.00102	0.00100	0.00102	0.000895 U*	0.00104	0.000540	0.000330 J	0.000319 J	0.00113	0.00167
Lead	7439-92-1	MG/L	0.0000675 U	0.0000675 U	0.0000675 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U
Lithium	7439-93-2	MG/L	0.00332 U*	0.00308 U*	0.00327 U*	0.00460 U*	0.00638 U*	0.00283 J	0.00332 U*	0.00274 U*	0.00400 U*	0.00307 U*
Magnesium	7439-95-4	MG/L	5.40	5.42	5.33	8.25	6.66	6.80	6.94	6.12	5.94	6.31
Mercury	7439-97-6	MG/L	0.0000521 UJ	0.0000521 UJ	0.0000521 U	0.0000521 U	0.0000521 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U
Molybdenum	7439-98-7	MG/L	0.0379	0.0379	0.0360	0.0269	0.0180	0.0171	0.0156	0.0204	0.0220	0.0242
Potassium	7440-09-7	MG/L	2.00	2.01	2.01	2.33	1.83	2.08	1.88	2.56	1.95	1.93
Selenium	7782-49-2	MG/L	0.000627 J	0.000423 J	0.000507 J	0.00127 U	0.00129 U*	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U
Sodium	7440-23-5	MG/L	8.31	8.41	7.30	8.06	5.98	6.33 J	5.33	6.81	7.13	7.35
Thallium	7440-28-0	MG/L	0.0000360 U	0.0000360 U	0.0000360 U	0.0000650 U*	0.0000630 U*	0.0000531 U	0.0000531 U	0.0000700 U*	0.0000720 U*	0.0000531 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.950 J	0.203 UJ	0.232 U	0.745 U	0.358 UJ	0.399 U*	0.703 U*	0.0319 UR	0.597 U	0.600 U*
Radium 228	15262-20-1	pCi/L	0.703 J	0.100 UJ	0.0841 U	0.393 U	0.253 UJ	0.399 U*	0.703 U*	0.0319 UR	0.535 U	0.600 U*
Radium-226	13982-63-3	pCi/L	0.247 U	0.102 U	0.148 U	0.352 U	0.105 U	-0.0673 U	-0.0925 U	-0.0955 UJ	0.0615 U	-0.0927 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID		GAF-402C	
Sample Date		8/22/2017	
Well Location		Downgradient	
Sample ID		GAF-GW-402C-08222017	
Sample Type		N	
Analyte	CASNO	Units	Result
<b>Field Parameter</b>			
Dissolved Oxygen	DO	MG/L	0.32
ORP	ORP	MV	-64.3
pH, Field	PHFLD	pH units	7.18
Specific Conductance, Field	CONDSPECFLD	umhos/cm	401.0
Temperature	TEMP	deg C	18.3
Turbidity, field	TURB-FIELD	NTU	0.22
<b>General Chemistry</b>			
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	225
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	225
Chloride	16887-00-6	MG/L	9.33
Fluoride	16984-48-8	MG/L	0.261
Sulfate	14808-79-8	MG/L	46.3
Total Dissolved Solids	TDS	MG/L	263
<b>Metals, Total</b>			
Antimony	7440-36-0	MG/L	0.00154 U*
Arsenic	7440-38-2	MG/L	0.0157
Barium	7440-39-3	MG/L	0.0866
Beryllium	7440-41-7	MG/L	0.000131 U
Boron	7440-42-8	MG/L	0.300
Cadmium	7440-43-9	MG/L	0.0000781 U
Calcium	7440-70-2	MG/L	86.0
Chromium	7440-47-3	MG/L	0.000378 U
Cobalt	7440-48-4	MG/L	0.00179
Lead	7439-92-1	MG/L	0.000354 U*
Lithium	7439-93-2	MG/L	0.00413 U*
Magnesium	7439-95-4	MG/L	6.73
Mercury	7439-97-6	MG/L	0.0000653 U
Molybdenum	7439-98-7	MG/L	0.0327
Potassium	7440-09-7	MG/L	2.25
Selenium	7782-49-2	MG/L	0.00127 U
Sodium	7440-23-5	MG/L	9.32
Thallium	7440-28-0	MG/L	0.000101 J
<b>Radiological</b>			
Radium 226 + Radium 228	RA226/228	pCi/L	0.00000 U
Radium 228	15262-20-1	pCi/L	-0.0843 U
Radium-226	13982-63-3	pCi/L	-0.0253 U

BASELINE

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-402L	GAF-402L	GAF-402L	GAF-402L	GAF-402L	GAF-402L	GAF-402L	GAF-402L	GAF-402L	GAF-402L
Sample Date			11/15/2016	12/13/2016	1/12/2017	2/20/2017	3/20/2017	4/24/2017	5/22/2017	6/19/2017	7/18/2017	8/22/2017
Well Location			Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID			GAF-GW-402L-11152016	GAF-GW-402L-12132016	GAF-GW-402L-01122017	GAF-GW-402L-02202017	GAF-GW-402L-03202017	GAF-GW-402L-04242017	GAF-GW-402L-05222017	GAF-GW-402L-06192017	GAF-GW-402L-07182017	GAF-GW-402L-08222017
Sample Type			N	N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	GAF-402L	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	0.34	0.23	0.57	0.36	0.19	0.20	0.54	0.30	0.59	0.20
ORP	ORP	MV	-103.1	-73.9	-127.2	-350.1	-98.4	-79.8	-123.6	-115.7	-95.7	-75.0
pH, Field	PHFLD	pH units	7.35	7.61	7.47	7.76	7.26	7.22	7.34	7.13	7.11	7.23
Specific Conductance, Field	CONDSPECFLD	umhos/cm	621	968	785	892	748	870	546	637	658	592
Temperature	TEMP	deg C	17.57	16.79	17.13	16.76	16.4	16.4	16.9	17.2	17.4	18.0
Turbidity, field	TURB-FIELD	NTU	487	225	150	154	174	109	82.9	119	119	109
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	370	217	353	339	324	343	332	354	339	342
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	370	217	353	339	324	343	332	354	339	342
Chloride	16887-00-6	MG/L	15.2	16.2 J	16.8	22.7	22.2	18.3	15.6	19.8	21.7	22.9
Fluoride	16984-48-8	MG/L	0.279	0.299	0.262	0.223	0.461	0.275	0.295	0.345	0.369	0.308
Sulfate	14808-79-8	MG/L	63.1	68.7	56.3 J	61.3	56.6	50.1	46.5	49.4	54.4	54.9
Total Dissolved Solids	TDS	MG/L	390	456	429	355	386	356	382	357	430	401
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000488 U*	0.000374 U*	0.000443 U	0.000443 U	0.000443 UJ	0.000443 U	0.000443 U	0.000954 U*	0.00101 U*	0.000443 U
Arsenic	7440-38-2	MG/L	0.00935	0.00619	0.00611	0.00509	0.00485	0.00530	0.00320	0.00464 U*	0.00431	0.00307
Barium	7440-39-3	MG/L	0.256	0.224	0.265	0.219	0.259	0.254	0.232	0.237	0.237	0.242
Beryllium	7440-41-7	MG/L	0.000516 J	0.000304 J	0.000225 J	0.000131 U	0.000189 J	0.000246 J	0.000131 U	0.000163 J	0.000188 J	0.000131 U
Boron	7440-42-8	MG/L	0.394	0.379	0.317 J	0.292	0.282	0.277	0.243	0.253	0.246	0.279
Cadmium	7440-43-9	MG/L	0.000291 J	0.000162 J	0.0000990 J	0.0000781 U	0.0000781 U	0.000103 J	0.0000781 U	0.0000890 J	0.0000960 J	0.0000781 U
Calcium	7440-70-2	MG/L	107	94.0	105	85.4	92.6	89.9	81.2	80.9	86.5	90.3
Chromium	7440-47-3	MG/L	0.00924 U*	0.00561	0.00440	0.00322	0.00408	0.00312	0.00144 U*	0.00256 U*	0.00589	0.000390 U*
Cobalt	7440-48-4	MG/L	0.00520	0.00332	0.00252	0.00232	0.00224	0.00166	0.00100	0.00161	0.00244	0.000843
Lead	7439-92-1	MG/L	0.0117	0.00693 J	0.00516	0.00446 U*	0.00498	0.00393	0.00215	0.00298 U*	0.00477	0.00220
Lithium	7439-93-2	MG/L	0.0183 J	0.0139	0.0158 U*	0.0145 U*	0.0138	0.0138 U*	0.0115	0.0126 U*	0.0153	0.00901 U*
Magnesium	7439-95-4	MG/L	24.7	22.7	26.0	20.8	23.1	24.6	21.7	21.1	22.2	22.2
Mercury	7439-97-6	MG/L	0.0000632 U*	0.0000521 U	0.0000521 U	0.0000521 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U
Molybdenum	7439-98-7	MG/L	0.0117	0.00938	0.00923	0.00717	0.00697	0.00636	0.00417 J	0.00384 J	0.00483 J	0.000763 J
Potassium	7440-09-7	MG/L	3.99	3.30	3.19	2.51	3.31	2.99	2.52	3.16	3.70	2.31
Selenium	7782-49-2	MG/L	0.00138 J	0.000348 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U
Sodium	7440-23-5	MG/L	23.8	21.6	25.3	22.2	22.1	20.6	20.2 J	21.6	21.2	21.5
Thallium	7440-28-0	MG/L	0.000122 U*	0.0000940 U*	0.000157 J	0.0000531 U	0.000133 J	0.0000531 U	0.0000531 U	0.0000531 U	0.0000540 U*	0.0000531 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	1.62 J	1.01 J	0.303 U	0.640 J	0.649 U	0.211 U	1.17 U*	1.47 J	0.990 U*	1.30 J
Radium 228	15262-20-1	pCi/L	0.885	0.514	0.206 U	0.546 J	0.555 U	0.179 U	1.17 U*	1.40	0.866 U*	0.674 J
Radium-226	13982-63-3	pCi/L	0.732 UJ	0.499 U	0.0964 U	0.0944 U	0.0930 U	0.0323 U	-0.1150 U	0.0691 U	0.123 U	0.630 J

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-405C	GAF-405C	GAF-405C	GAF-405C	GAF-405C	GAF-405C	GAF-405C	GAF-405C	GAF-405C	GAF-405C
Sample Date			11/17/2016	12/13/2016	1/11/2017	2/21/2017	3/21/2017	4/25/2017	5/25/2017	6/21/2017	7/19/2017	8/24/2017
Well Location			Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID			GAF-GW-405C-11172016	GAF-GW-405C-12132016	GAF-GW-405C-01112017	GAF-GW-405C-02212017	GAF-GW-405C-03212017	GAF-GW-405C-04252017	GAF-GW-405C-05252017	GAF-GW-405C-06212017	GAF-GW-405C-07192017	GAF-GW-405C-08242017
Sample Type			N	N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	0.11	0.6	0.53	0.42	0.2	0.25	0.98	0.23	0.29	0.37
ORP	ORP	MV	13.2	-18.7	115.5	-429.3	24.1	-1.1	-57.2	-23.7	-14.5	-152.3
pH, Field	PHFLD	pH units	6.97	7.13	7	7.45	6.96	7.09	7.05	6.92	7.00	6.93
Specific Conductance, Field	CONDSPECFLD	umhos/cm	757	778	743	926	925	960	664	707	745	614
Temperature	TEMP	deg C	17.65	16.14	16.34	15.99	16.2	16.2	15.8	17.1	17.3	18.4
Turbidity, field	TURB-FIELD	NTU	3.82	3.54	4.14	3.89	2.82	2.93	21.3	21.3	20.2	12.7
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	460	365	335	372	370	362	376	372	386	330
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	460	365	335	372	370	362	376	372	386	330
Chloride	16887-00-6	MG/L	4.91	7.03 J	5.79	4.92	4.82	3.86	4.02	4.44	5.71	4.88
Fluoride	16984-48-8	MG/L	0.0773 J	0.0896 J	0.0913 U*	0.0614 J	0.119	0.126 U*	0.102	0.153	0.147	0.122
Sulfate	14808-79-8	MG/L	133 U*	130	107 J	148	154	142	130	104	102	101
Total Dissolved Solids	TDS	MG/L	528	509	479	493	530	491	525	480	473	452
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000733 U*	0.000525 U*	0.000747 U*	0.000443 U	0.000457 U*	0.000443 U	0.00259 U*	0.000523 U*	0.000643 U*	0.000447 U*
Arsenic	7440-38-2	MG/L	0.000628 U*	0.000478 U*	0.000453 J	0.000383 J	0.000229 U*	0.000262 J	0.00151 J	0.000822 J	0.000754 U*	0.000731 U*
Barium	7440-39-3	MG/L	0.0576	0.0506	0.0493	0.0503	0.0565	0.0440	0.0625	0.0498	0.0516	0.0483
Beryllium	7440-41-7	MG/L	0.000102 U	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000653 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	0.182	0.159	0.139	0.199	0.140	0.0845 J	0.151 J	0.103	0.111	0.103 U*
Cadmium	7440-43-9	MG/L	0.000152 U	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.000391 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	153	135	124	138	142	137	136	127	132	122 J
Chromium	7440-47-3	MG/L	0.000339 U	0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.00189 U	0.000378 U	0.000991 J	0.000517 U*
Cobalt	7440-48-4	MG/L	0.000282 J	0.000299 J	0.000210 J	0.000201 U*	0.000127 U*	0.0000947 U	0.00143 J	0.000426 J	0.000401 J	0.000548
Lead	7439-92-1	MG/L	0.000227 J	0.000291 U*	0.000337 J	0.000318 U	0.000318 U	0.000362 U*	0.00159 U	0.000406 J	0.000318 U	0.000333 U*
Lithium	7439-93-2	MG/L	0.00278 J	0.00424 U*	0.0192 U*	0.00553 U*	0.00438 U*	0.00284 U*	0.0106 U	0.00493 U*	0.00212 U	0.00427 U*
Magnesium	7439-95-4	MG/L	12.4	11.3	10.5	10.8	10.7	10.8	11.5	10.6	10.9	9.61
Mercury	7439-97-6	MG/L	0.0000521 U	0.0000521 U	0.0000521 U	0.0000521 UJ	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U
Molybdenum	7439-98-7	MG/L	0.00140 J	0.00134 J	0.00119 J	0.000593 U	0.000825 U*	0.000621 U*	0.00742 U*	0.000694 J	0.000712 J	0.000699 J
Potassium	7440-09-7	MG/L	6.81	6.08	6.42	3.52	5.57	4.31	3.95	3.48	3.35	3.58
Selenium	7782-49-2	MG/L	0.000492 U*	0.000348 U	0.00127 U	0.00127 U	0.00127 U	0.00127 UJ	0.00634 U	0.00127 U	0.00127 U	0.00127 U
Sodium	7440-23-5	MG/L	12.0	11.9	9.94	7.83	7.91	7.50	9.34	8.35	10.3	8.81
Thallium	7440-28-0	MG/L	0.0000360 U	0.0000650 U*	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.000750 U*	0.0000531 U	0.0000531 U	0.0000531 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.614 U	0.422 U	0.728 U	0.784 U	0.728 U*	0.242 U	1.29 J	1.15 U	0.475 U	0.912 U*
Radium 228	15262-20-1	pCi/L	0.396 U	0.261 U	0.532 U	0.325 U	0.505 U*	-0.0649 U	0.400 U	0.557 U	0.410 U	0.773 U*
Radium-226	13982-63-3	pCi/L	0.218 U	0.161 U	0.196 U	0.458 U	0.223 U	0.242 U	0.892	0.590 U	0.0651 U	0.139 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID		GAF-406L	GAF-406L	GAF-406L	GAF-406L	GAF-406L	GAF-406L	GAF-406L	GAF-406L	GAF-406L
Sample Date		11/18/2016	12/19/2016	1/18/2017	2/15/2017	3/15/2017	4/20/2017	5/16/2017	6/16/2017	
Well Location		Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID		GAF-GW-406L-11182016	GAF-GW-406L-12192016	GAF-GW-406L-01182017	GAF-GW-406L-02152017	GAF-GW-406L-03152017	GAF-GW-406L-04202017	GAF-GW-406L-05162017	GAF-GW-406L-06162017	
Sample Type		N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>										
Dissolved Oxygen	DO	MG/L	0.20	0.13	0.46	0.1	0.21	0.21	0.19	0.35
ORP	ORP	MV	-38.6	-21	1.6	90.9	-47.9	-98.8	-251.3	53.3
pH, Field	PHFLD	pH units	7.14	6.8	6.89	6.83	7.11	7.00	6.93	6.86
Specific Conductance, Field	CONDSPECFLD	umhos/cm	1219	946	756	850	1291	661	731	792
Temperature	TEMP	deg C	17.37	14.03	16.43	16.18	15.2	16.8	17.5	16.8
Turbidity, field	TURB-FIELD	NTU	137	2.9	3.47	4.38	5.67	4.80	4.85	3.84
<b>General Chemistry</b>										
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	330	235	343 J	232	316	347	292	348
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	330	235	343 J	232	316	347	292	348
Chloride	16887-00-6	MG/L	24.8 J	18.8	7.15	7.76	8.91	7.43	5.80	7.72
Fluoride	16984-48-8	MG/L	0.124	0.165	0.114	0.103	0.113	0.129	0.103	0.159
Sulfate	14808-79-8	MG/L	196 U*	281 J	224 J	269	194	168	165	186
Total Dissolved Solids	TDS	MG/L	659	587	563	550	561	515	531	553
<b>Metals, Total</b>										
Antimony	7440-36-0	MG/L	0.000900 U*	0.00140 U*	0.000788 J	0.000768 U*	0.000766 U*	0.000733 U*	0.000651 U*	0.000443 U
Arsenic	7440-38-2	MG/L	0.00389	0.00136	0.00606	0.000521 J	0.000536 J	0.000654 J	0.000639 J	0.00328 U*
Barium	7440-39-3	MG/L	0.0563	0.0378	0.0813	0.0312	0.0377	0.0334	0.0326	0.0320
Beryllium	7440-41-7	MG/L	0.000548 J	0.000140 J	0.000600 J	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000172 U*
Boron	7440-42-8	MG/L	0.378	0.325	0.410	0.420	0.436	0.354	0.379	0.326
Cadmium	7440-43-9	MG/L	0.000152 U	0.000152 U	0.000350 U*	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	146	139	184	155	154	159	161	165
Chromium	7440-47-3	MG/L	0.00195 U*	0.000543 J	0.00286	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.00226 U*
Cobalt	7440-48-4	MG/L	0.00125	0.000787 U*	0.00111	0.000342 J	0.000343 U*	0.000375 J	0.000286 J	0.000419 J
Lead	7439-92-1	MG/L	0.0119	0.00229	0.0357	0.000445 J	0.000349 J	0.000329 J	0.000401 J	0.000319 J
Lithium	7439-93-2	MG/L	0.00637	0.00315 U*	0.00470 U*	0.00665 U*	0.00314 U*	0.00216 J	0.00212 U	0.00221 U*
Magnesium	7439-95-4	MG/L	12.0	9.43	11.7	9.51	8.98	10.3	9.35	10.6
Mercury	7439-97-6	MG/L	0.0000521 U	0.0000521 U	0.0000521 U	0.0000521 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U
Molybdenum	7439-98-7	MG/L	0.0107	0.00570	0.00275 U*	0.00232 J	0.00281 J	0.00260 J	0.00208 J	0.00239 J
Potassium	7440-09-7	MG/L	32.5	13.3	6.19	5.72	5.92	5.05	4.27	4.21 J
Selenium	7782-49-2	MG/L	0.00210 J	0.000445 J	0.00127 U	0.00127 U	0.00131 U*	0.00127 U	0.00127 U	0.00127 U
Sodium	7440-23-5	MG/L	49.1	21.8	12.7	12.4	12.7	11.7	10.5	11.0
Thallium	7440-28-0	MG/L	0.000144 J	0.000127 U*	0.000233 U*	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U
<b>Radiological</b>										
Radium 226 + Radium 228	RA226/228	pCi/L	7.04 J	2.29 U	0.698 J	0.511 U	0.630 U	0.645 U	1.62 U*	1.86 U*
Radium 228	15262-20-1	pCi/L	3.42	1.50 U	0.132 U	0.511 U	0.394 U	0.410 U	1.23 U*	1.61 U*
Radium-226	13982-63-3	pCi/L	3.61 J	0.786 U	0.566	-0.2740 U	0.237 U	0.235 U	0.390 U	0.251 U



**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID		GAF-410U	GAF-410U	GAF-410U	GAF-410U	GAF-410U	GAF-410U	GAF-410U	GAF-410U	GAF-410U	GAF-410U	GAF-410U
Sample Date		11/14/2016	12/16/2016	1/11/2017	2/21/2017	3/21/2017	4/25/2017	5/22/2017	6/20/2017	7/19/2017	8/23/2017	
Well Location		Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	
Sample ID		GAF-GW-410U-11142016	GAF-GW-410U-12162016	GAF-GW-410U-01112017	GAF-GW-410U-02212017	GAF-GW-410U-03212017	GAF-GW-410U-04252017	GAF-GW-410U-05222017	GAF-GW-410U-06202017	GAF-GW-410U-07192017	GAF-GW-410U-08232017	
Sample Type		N	N	N	N	N	N	N	N	N	N	
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	1.59	0.17	0.69	0.54	0.09	0.32	0.33	0.19	0.53	0.31
ORP	ORP	MV	-113.8	-55.1	-86.1	-71.6	-60.2	-45.8	-76.0	-88.3	-62.4	-59.8
pH, Field	PHFLD	pH units	6.96	7.03	6.95	6.86	6.82	6.81	7.20	6.74	6.77	6.83
Specific Conductance, Field	CONDSPECFLD	umhos/cm	710	1014	913	709	668	820	565	694	677	673
Temperature	TEMP	deg C	18.68	14.52	15.31	16.61	17.2	17.0	18.3	18.6	23.5	20.2
Turbidity, field	TURB-FIELD	NTU	2.06	0.22	3.42	3.66	3.92	0.77	0.85	1.06	0.27	1.17
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	360	337	388	360	406	366	348	356	368	338
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	360	337	388	360	406	366	348	356	368	338
Chloride	16887-00-6	MG/L	4.26	5.66	6.56	6.45	7.13	6.79	4.72	6.90	6.41	6.72
Fluoride	16984-48-8	MG/L	0.356	0.155	0.119 U*	0.0920 J	0.145	0.127 U*	0.107	0.159	0.101	0.105
Sulfate	14808-79-8	MG/L	46.7	98.4	102 J	107	101	96.9	100	97.0	97.8	101
Total Dissolved Solids	TDS	MG/L	459	462	453	427	449	438	445	436	422	428
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000231 U*	0.000919 U*	0.000443 U	0.000443 U	0.000443 U	0.000443 U	0.000872 U*	0.00255 U*	0.000443 U	0.000443 U
Arsenic	7440-38-2	MG/L	0.0247	0.0214	0.0294	0.0224	0.0215	0.0237	0.0204	0.0224	0.0220	0.0241
Barium	7440-39-3	MG/L	0.0674	0.0636 J	0.0658	0.0602	0.0640	0.0587	0.0637	0.0618	0.0657	0.0584
Beryllium	7440-41-7	MG/L	0.000102 U	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000192 J	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	7.12	7.59	7.79	8.18	6.78	6.84	7.04	7.67	7.02	7.43
Cadmium	7440-43-9	MG/L	0.000152 U	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	110	106	105	97.4	106	105	98.4	107	110	105
Chromium	7440-47-3	MG/L	0.000339 U	0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000408 J
Cobalt	7440-48-4	MG/L	0.00191	0.00179 J	0.00176	0.00181	0.00185 U*	0.00182	0.00152	0.00186	0.00178	0.00191
Lead	7439-92-1	MG/L	0.000124 J	0.0000675 U	0.000318 U	0.000318 U	0.000318 U	0.000377 U*	0.000318 U	0.000318 U	0.000318 U	0.000318 U
Lithium	7439-93-2	MG/L	0.00188 U*	0.00180 U*	0.0145 U*	0.00212 U	0.00212 U	0.00212 U	0.00212 U	0.00212 U	0.00212 U	0.00220 J
Magnesium	7439-95-4	MG/L	6.15	5.99	6.04	5.35	5.70	6.11	5.59 J	5.95	6.19	5.73
Mercury	7439-97-6	MG/L	0.0000521 U	0.0000521 U	0.0000521 U	0.0000521 UJ	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 UJ
Molybdenum	7439-98-7	MG/L	0.0421	0.0375	0.0387	0.0329	0.0323	0.0347	0.0357	0.0370	0.0373	0.0345
Potassium	7440-09-7	MG/L	2.01	1.97	1.99	1.85	1.97	1.98	1.91	2.04	2.16	1.92
Selenium	7782-49-2	MG/L	0.000429 J	0.000348 U	0.00127 U	0.00127 U	0.00127 U	0.00127 UJ	0.00127 UJ	0.00127 U	0.00127 U	0.00127 UJ
Sodium	7440-23-5	MG/L	30.8	29.0	28.7	27.5	29.1	29.6	28.4 J	33.1	34.1	30.7
Thallium	7440-28-0	MG/L	0.0000360 U	0.0000360 U	0.0000531 U	0.0000531 U	0.0000531 UJ	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000610 J
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.137 U	1.18 J	0.404 U	0.745 U*	0.725 U	0.263 U	0.736 U*	0.230 U	0.805 U*	0.125 U
Radium 228	15262-20-1	pCi/L	-0.00763 U	0.798 J	-0.0258 U	0.0765 U	0.567 U	0.222 U	0.736 U*	0.129 U	0.805 U*	0.125 U
Radium-226	13982-63-3	pCi/L	0.145 U	0.382 U	0.404 U	0.669	0.158 U	0.0413 U	-0.0092 U	0.100 U	-0.1200 U	-0.1130 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-412C	GAF-412C	GAF-412C	GAF-412C	GAF-412C	GAF-412C	GAF-412C	GAF-412C	GAF-412C	GAF-412C
Sample Date			11/15/2016	12/13/2016	1/10/2017	2/22/2017	3/20/2017	4/26/2017	5/23/2017	6/21/2017	7/18/2017	8/23/2017
Well Location			Background	Background	Background	Background	Background	Background	Background	Background	Background	Background
Sample ID			GAF-GW-412C-11152016	GAF-GW-412C-12132016	GAF-GW-412C-01102017	GAF-GW-412C-02222017	GAF-GW-412C-03202017	GAF-GW-412C-04262017	GAF-GW-412C-05232017	GAF-GW-412C-06212017	GAF-GW-412C-07182017	GAF-GW-412C-08232017
Sample Type			N	N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	0.83	0.44	0.63	1.52	0.39	0.61	0.34	0.59	0.38	0.45
ORP	ORP	MV	-175.6	-45.3	-148.4	-87.4	-81.9	-147.9	-214.9	-121.3	-70.5	-67.0
pH, Field	PHFLD	pH units	7.47	6.93	7.03	6.97	7.02	7.02	7.15	7.01	6.93	7.02
Specific Conductance, Field	CONDSPECFLD	umhos/cm	857	835	804	835	816	910	599	771	700	755
Temperature	TEMP	deg C	15.56	14.11	13.82	15.05	16.4	16.0	15.8	17.9	17.0	16.9
Turbidity, field	TURB-FIELD	NTU	0.36	0.18	0.4	0.34	0.13	0.52	0.82	2.43	0.36	0.56
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	504	483	479	481	466	524	506	446	506	442
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	504	483	479	481	466	524	506	446	506	442
Chloride	16887-00-6	MG/L	30.6	23.8 J	28.5	20.5	22.4	28.9	18.1	17.4	15.5	18.1
Fluoride	16984-48-8	MG/L	0.468	0.314	0.306	0.259 J	0.352	0.347	0.286	0.321	0.307	0.296
Sulfate	14808-79-8	MG/L	28.1	32.5	36.4	36.7 J	34.5	33.4	30.2	30.9	31.4	28.4
Total Dissolved Solids	TDS	MG/L	477	476	475	475	456 J	466	450	439	457	450
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000264 U*	0.000286 U*	0.000203 U*	0.000443 U	0.000443 UJ	0.000760 U*	0.000443 U	0.000577 U*	0.00258 U*	0.000443 U
Arsenic	7440-38-2	MG/L	0.000440 U*	0.000497 U*	0.000413 U*	0.000614 U*	0.000238 J	0.000327 J	0.000303 U*	0.000462 J	0.000493 U*	0.000546 U*
Barium	7440-39-3	MG/L	0.207	0.175	0.188	0.164	0.184	0.179	0.175	0.150	0.155	0.141
Beryllium	7440-41-7	MG/L	0.000102 U	0.000102 U	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	0.0958	0.102	0.0869	0.0861	0.0754 J	0.119 U*	0.0566 J	0.0623 J	0.0595 U*	0.0547 J
Cadmium	7440-43-9	MG/L	0.000152 U	0.000152 U	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	106	107	116	118	113	112	112	125	121	125
Chromium	7440-47-3	MG/L	0.000339 U	0.000339 U	0.000339 U	0.000378 U	0.000475 J	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U
Cobalt	7440-48-4	MG/L	0.0000370 U*	0.0000590 U*	0.0000218 U	0.0000947 U	0.0000947 U	0.0000947 U	0.0000947 U	0.0000947 U	0.0000947 U	0.000104 U*
Lead	7439-92-1	MG/L	0.0000675 U	0.0000675 U	0.0000675 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U
Lithium	7439-93-2	MG/L	0.0324 J	0.0275	0.0272	0.0274	0.0203	0.0248	0.0170	0.0144 U*	0.0112 U*	0.0134
Magnesium	7439-95-4	MG/L	25.7	24.0	25.3	23.2	23.1	24.1	20.3	20.9	21.0	20.8
Mercury	7439-97-6	MG/L	0.0000521 UJ	0.0000521 U	0.0000521 U	0.000200 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 UJ
Molybdenum	7439-98-7	MG/L	0.000873 U	0.000873 U	0.000873 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U
Potassium	7440-09-7	MG/L	5.84	4.49	4.82	2.79	4.69	4.24	3.00	2.20	2.39	1.79
Selenium	7782-49-2	MG/L	0.000423 J	0.000348 U	0.000348 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 UJ
Sodium	7440-23-5	MG/L	34.9	29.5	31.1	26.4	21.9	25.7	16.3	17.0	13.1	16.5
Thallium	7440-28-0	MG/L	0.0000360 U	0.0000360 U	0.0000360 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	1.11 J	0.225 U	0.375 U	0.223 U	0.802 U	0.632 U	0.585 U	0.309 U	1.00 U*	0.437 U
Radium 228	15262-20-1	pCi/L	0.745	0.225 U	0.0699 U	0.124 U	0.656 U	0.444 U	0.497 U	0.0849 U	0.962 U*	0.248 U
Radium-226	13982-63-3	pCi/L	0.364 U	-0.8660 U	0.305 U	0.0985 U	0.146 U	0.187 U	0.0875 U	0.224 U	0.0426 U	0.190 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-412L	GAF-412L	GAF-412L	GAF-412L	GAF-412L	GAF-412L	GAF-412L	GAF-412L	GAF-412L	GAF-412L
Sample Date			11/15/2016	12/13/2016	1/10/2017	2/22/2017	3/20/2017	4/26/2017	5/23/2017	6/20/2017	7/20/2017	8/23/2017
Well Location			Background	Background	Background	Background	Background	Background	Background	Background	Background	Background
Sample ID			GAF-GW-412L-11152016	GAF-GW-412L-12132016	GAF-GW-412L-01102017	GAF-GW-412L-02222017	GAF-GW-412L-03202017	GAF-GW-412L-04262017	GAF-GW-412L-05232017	GAF-GW-412L-06202017	GAF-GW-412L-07202017	GAF-GW-412L-08232017
Sample Type			N	N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	1.08	0.19	0.6	0.43	0.31	0.20	0.19	0.35	0.51	0.46
ORP	ORP	MV	-271.4	-322.4	-335	-324.2	-288.4	-320.0	-342.2	-327.9	-308.8	-245.0
pH, Field	PHFLD	pH units	8.05	7.29	7.58	7.41	7.29	7.66	7.73	7.39	7.32	7.36
Specific Conductance, Field	CONDSPECFLD	umhos/cm	1505	1380	990	1109	1109	913	794	1072	1210	1527
Temperature	TEMP	deg C	15.81	14.69	13.79	15.78	19.3	16.3	15.7	18.5	17	16.1
Turbidity, field	TURB-FIELD	NTU	0.68	0.19	0.69	0.85	0.58	0.28	0.36	0.38	0.66	0.82
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	8.00	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	430	388	432	354	444	464	426	440	353	364
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	430	388	432	354	444	464	418	440	353	364
Chloride	16887-00-6	MG/L	273	211 J	93.2	135	142	109	128	153	216	330
Fluoride	16984-48-8	MG/L	0.865	0.996	1.67	1.14 J	2.30	2.07	2.13	2.13	0.941	0.833
Sulfate	14808-79-8	MG/L	24.9	38.9	4.49	25.7 J	11.1	6.04	5.20	12.4	18.6	40.3
Total Dissolved Solids	TDS	MG/L	803	718	547	583	599 J		598	625 J	667	864
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000365 U*	0.000267 U*	0.000189 U*	0.000443 U	0.000443 UJ	0.000562 U*	0.000443 U	0.000654 U*	0.000443 U	0.000443 U
Arsenic	7440-38-2	MG/L	0.000208 U*	0.000147 U*	0.000118 U	0.000220 U	0.000220 U	0.000220 U	0.000220 U	0.000251 U*	0.000359 U*	0.000263 U*
Barium	7440-39-3	MG/L	0.491	0.433	0.241	0.433	0.246	0.217	0.227	0.269	0.409	0.515
Beryllium	7440-41-7	MG/L	0.000102 U	0.000102 U	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	0.282	0.340	0.382	0.316	0.425	0.413	0.415	0.455	0.294	0.313
Cadmium	7440-43-9	MG/L	0.000152 U	0.000152 U	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	72.0	61.7	33.5	46.4	25.1 J	30.7	24.2	35.3	59.0	74.5
Chromium	7440-47-3	MG/L	0.000339 U	0.000339 U	0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U
Cobalt	7440-48-4	MG/L	0.0000218 U	0.0000218 U	0.0000218 U	0.0000947 U	0.0000947 U	0.0000947 U	0.0000947 U	0.0000947 U	0.0000947 U	0.0000947 U
Lead	7439-92-1	MG/L	0.0000675 U	0.0000675 U	0.0000675 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U
Lithium	7439-93-2	MG/L	0.164 J	0.151	0.162	0.158 J	0.187	0.169	0.189	0.186	0.159	0.162
Magnesium	7439-95-4	MG/L	40.2	35.2	19.9	27.0	17.6	17.7	16.1	21.6	35.5	43.0
Mercury	7439-97-6	MG/L	0.000521 UJ	0.000521 U	0.000521 U	0.000200 U	0.000653 U	0.000653 U	0.000653 U	0.000653 U	0.000653 U	0.000653 UJ
Molybdenum	7439-98-7	MG/L	0.000873 U	0.000873 U	0.000873 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U
Potassium	7440-09-7	MG/L	7.12	6.92	7.42	10.5	7.25	6.51	6.65	8.79	9.57	7.19
Selenium	7782-49-2	MG/L	0.000443 J	0.000348 U	0.000348 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 UJ
Sodium	7440-23-5	MG/L	164	146	160	146	164	158	176	187	162	174
Thallium	7440-28-0	MG/L	0.0000360 U	0.0000360 U	0.0000360 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	1.74	1.43	0.861 U	1.27 U*	1.38 U*	0.949 J	1.43 J	1.28 U	2.07 J	1.43
Radium 228	15262-20-1	pCi/L	0.939	0.754	0.355 U	0.724 U*	0.824 U*	0.235 U	1.01 J	0.890 U	1.33	0.669
Radium-226	13982-63-3	pCi/L	0.803	0.679	0.507 U	0.545 U	0.554 U	0.714	0.429 U	0.392 U	0.731	0.766

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-414L	GAF-414L	GAF-414L	GAF-414L	GAF-414L	GAF-414L	GAF-414L	GAF-414L	GAF-414L	GAF-414L
Sample Date			11/15/2016	12/14/2016	1/13/2017	2/22/2017	3/20/2017	4/26/2017	5/23/2017	6/20/2017	7/18/2017	8/23/2017
Well Location			Background	Background	Background	Background	Background	Background	Background	Background	Background	Background
Sample ID			GAF-GW-414L-11152016	GAF-GW-414L-12142016	GAF-GW-414L-01132017	GAF-GW-414L-02222017	GAF-GW-414L-03202017	GAF-GW-414L-04262017	GAF-GW-414L-05232017	GAF-GW-414L-06202017	GAF-GW-414L-07182017	GAF-GW-414L-08232017
Sample Type			N	N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	1.11	0.71	0.76	1.53	0.42	0.39	0.30	0.37	0.40	0.42
ORP	ORP	MV	-182.8	-105.2	-149.8	-114.4	-115.4	-94.6	-140.9	-159.6	-115.3	-140.0
pH, Field	PHFLD	pH units	7.51	7.21	7.29	7.26	7.44	7.30	7.79	7.36	7.38	7.44
Specific Conductance, Field	CONDSPECFLD	umhos/cm	139	1377	1376	1346	1399	1226	1038	1354	1247	1367
Temperature	TEMP	deg C	14.60	13.75	13.26	15.59	15.4	15.6	16.2	15.8	16.6	17.0
Turbidity, field	TURB-FIELD	NTU	0.16	0.28	0.1	0.28	0.52	0.59	2.42	0.32	0.42	2.75
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	374	313	374	339	354	391	350	360	374	362
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	374	313	374	339	354	391	350	360	374	362
Chloride	16887-00-6	MG/L	250	217	260	199	261	253	248	253	281	284
Fluoride	16984-48-8	MG/L	0.493	0.479	0.492	0.400 J	0.647	0.541	0.522	0.591	0.712	0.582
Sulfate	14808-79-8	MG/L	27.0	31.1	26.5	26.1 J	35.3	26.3	27.5	28.5	31.5	30.6
Total Dissolved Solids	TDS	MG/L	747	729	740	682	705 J	761	717	687	791	787
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000564 U*	0.000251 U*	0.000443 U	0.000443 U	0.000443 UJ	0.000644 U*	0.00154 U*	0.000663 U*	0.00314 U*	0.000443 U
Arsenic	7440-38-2	MG/L	0.00123	0.00124	0.000975 J	0.000623 U*	0.000464 J	0.000427 J	0.000445 U*	0.000510 U*	0.000864 U*	0.000966 U*
Barium	7440-39-3	MG/L	0.463	0.461	0.518	0.461	0.482	0.414	0.425	0.419	0.444	0.450
Beryllium	7440-41-7	MG/L	0.000102 U	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	0.178	0.211	0.208 J	0.200	0.208	0.196	0.182	0.196	0.210	0.204
Cadmium	7440-43-9	MG/L	0.000152 U	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	93.5	92.6	105	96.9	90.7	97.3	86.6	96.4	92.5	94.1
Chromium	7440-47-3	MG/L	0.000339 U	0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 UJ	0.000378 U	0.000378 U	0.00774
Cobalt	7440-48-4	MG/L	0.0000218 U	0.0000290 U*	0.0000947 U	0.0000947 U	0.0000947 U	0.0000947 U	0.0000947 U	0.0000947 U	0.0000947 U	0.000115 U*
Lead	7439-92-1	MG/L	0.0000675 U	0.0000675 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000913 U*
Lithium	7439-93-2	MG/L	0.0986 J	0.0979	0.107	0.103	0.102	0.0936	0.0974	0.0936	0.0911	0.0972
Magnesium	7439-95-4	MG/L	40.1	40.9	44.6	41.0	40.4	37.9	38.4	41.0	40.4	40.6
Mercury	7439-97-6	MG/L	0.0000521 UJ	0.0000521 U	0.0000521 U	0.000200 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 UJ
Molybdenum	7439-98-7	MG/L	0.000873 U	0.000873 U	0.000593 U	0.000593 U	0.00121 J	0.000593 U	0.000627 J	0.000593 U	0.000593 U	0.000609 J
Potassium	7440-09-7	MG/L	3.02	3.13	3.45	3.06	3.39	2.98	2.99	2.92	3.03	3.07
Selenium	7782-49-2	MG/L	0.000348 U	0.000422 U*	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 UJ
Sodium	7440-23-5	MG/L	115	114	121	117	115	108	111	120	121	126
Thallium	7440-28-0	MG/L	0.0000360 U	0.0000360 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	2.05	2.35	1.04 U	1.23 U*	2.08 J	1.18 J	1.82	1.05 U	2.08 U*	1.62
Radium 228	15262-20-1	pCi/L	0.596	0.616	0.184 U	0.555 U*	0.979 U*	0.307 U	1.17	0.621 U	1.20 U*	0.543
Radium-226	13982-63-3	pCi/L	1.45	1.73	0.861 U	0.671 U	1.10	0.876	0.651	0.427 U	0.876	1.08

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-416C	GAF-416C	GAF-416C	GAF-416C	GAF-416C	GAF-416C	GAF-416C	GAF-416C	GAF-416C	GAF-416C
Sample Date			11/16/2016	12/15/2016	1/13/2017	2/22/2017	3/22/2017	4/26/2017	5/24/2017	6/20/2017	7/20/2017	8/24/2017
Well Location			Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID			GAF-GW-416C-11162016	GAF-GW-416C-12152016	GAF-GW-416C-01132017	GAF-GW-416C-02222017	GAF-GW-416C-03222017	GAF-GW-416C-04262017	GAF-GW-416C-05242017	GAF-GW-416C-06202017	GAF-GW-416C-07202017	GAF-GW-416C-08242017
Sample Type			N	N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	0.19	1.57	0.73	0.15	0.7	0.09	0.10	0.19	0.23	0.26
ORP	ORP	MV	-108.7	-108.1	-177.4	-100	-112.9	-105.8	-119.7	-72.0	-118.8	-98.3
pH, Field	PHFLD	pH units	7.63	7.61	7.62	7.36	7.58	7.48	7.43	7.55	7.46	7.55
Specific Conductance, Field	CONDSPECFLD	umhos/cm	388	581	442	378	369.8	413	453.7	331.2	332.8	349.1
Temperature	TEMP	deg C	18.93	15.83	17.59	18.34	17.4	18.5	18.0	19.0	19.3	19.9
Turbidity, field	TURB-FIELD	NTU	4.07	7.52	3.57	9.2	4.2	33.7	5.91	4.36	15.0	5.82
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	16.0	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	226	302	225	202	229	237	190	236	202	225
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	226	302	225	202	229	237	174	236	202	225
Chloride	16887-00-6	MG/L	10.3	14.1	11.9	9.75	11.6	11.4	11.9	9.72	7.70	10.2
Fluoride	16984-48-8	MG/L	0.218	0.264	0.206	0.195 J	0.246	0.238	0.227	0.225	0.202	0.207
Sulfate	14808-79-8	MG/L	16.9	20.1	16.8	18.5 J	20.6	22.6	22.7	21.8	16.4	17.6
Total Dissolved Solids	TDS	MG/L	189	210	200	219	211	213	230	607	194	202
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000186 U*	0.000654 U*	0.000443 U	0.000443 U	0.000443 U	0.000553 U*	0.000443 U	0.000476 U*	0.000443 U	0.000443 U
Arsenic	7440-38-2	MG/L	0.00415	0.00376	0.00303	0.00309	0.00317	0.00269	0.00270	0.00271	0.00298	0.00243
Barium	7440-39-3	MG/L	0.0393	0.0411	0.0417	0.0396	0.0433	0.0440	0.0433	0.0419	0.0415	0.0374
Beryllium	7440-41-7	MG/L	0.000102 U	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	0.416	0.542	0.508 J	0.478 J	0.429 J	0.463	0.443	0.460	0.394	0.437
Cadmium	7440-43-9	MG/L	0.000152 U	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	60.1	53.6	58.0	54.0 J	51.1	62.7	61.3	65.0	62.5	60.5 J
Chromium	7440-47-3	MG/L	0.000339 U	0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.000604 J	0.000378 U	0.000378 U	0.000604 J	0.000442 U*
Cobalt	7440-48-4	MG/L	0.000233 J	0.000585 U*	0.000218 J	0.000244 J	0.000212 J	0.000496 J	0.000269 J	0.000314 J	0.000429 J	0.000346 J
Lead	7439-92-1	MG/L	0.0000675 U	0.000162 U*	0.000318 U	0.000318 U	0.000318 U	0.000515 U*	0.000318 U	0.000318 U	0.000339 J	0.000318 U
Lithium	7439-93-2	MG/L	0.000786 U	0.00118 U*	0.00212 UJ	0.00212 U	0.00373 U*	0.00212 U	0.00293 U*	0.00212 U	0.00263 U*	0.00302 U*
Magnesium	7439-95-4	MG/L	5.59	5.15	5.28	4.91 J	4.39	5.19	4.96	5.42	5.31	4.99
Mercury	7439-97-6	MG/L	0.0000722 U*	0.0000521 U	0.0000521 U	0.000200 U	0.0000653 U	0.000107 J	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U
Molybdenum	7439-98-7	MG/L	0.0699	0.0649	0.0670	0.0600 J	0.0615	0.0586	0.0656	0.0574	0.0650	0.0611 J
Potassium	7440-09-7	MG/L	4.05	3.58	3.77	3.50 J	3.49	3.32	3.69	3.05	3.42	3.21
Selenium	7782-49-2	MG/L	0.000541 J	0.000632 U*	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U
Sodium	7440-23-5	MG/L	12.9	11.0	11.5	10.7	10.4	8.77	10.4	8.81	9.00	9.08
Thallium	7440-28-0	MG/L	0.0000360 U	0.0000500 U*	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.294 U	0.386 UJ	0.814 U	1.15 U*	0.502 U	0.232 U	0.0800 UR	0.00780 U	0.551 U*	1.23 U*
Radium 228	15262-20-1	pCi/L	0.165 U	0.386 U	0.202 U	0.675 U*	0.286 U	0.232 U	0.0800 UR	0.00780 U	0.499 U*	1.23 U*
Radium-226	13982-63-3	pCi/L	0.129 U	-0.00501 UJ	0.612 U	0.472 U	0.216 U	-0.1190 U	-0.1180 UJ	-0.0108 U	0.0515 U	-0.2020 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID		GAF-422C	GAF-422C	GAF-422C	GAF-422C	GAF-422C	GAF-422C	GAF-422C	GAF-422C	GAF-422C	GAF-422C	GAF-422C
Sample Date		11/16/2016	11/16/2016	12/14/2016	1/12/2017	2/21/2017	3/21/2017	4/24/2017	5/22/2017	6/19/2017	7/20/2017	
Well Location		Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID		GAF-GW-422C-11162016	GAF-GW-903-11162016	GAF-GW-422C-12142016	GAF-GW-422C-01122017	GAF-GW-422C-02212017	GAF-GW-422C-03212017	GAF-GW-422C-04242017	GAF-GW-422C-05222017	GAF-GW-422C-06192017	GAF-GW-422C-07202017	
Sample Type		N	FD	N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	0.63	NA	1.9	0.56	0.31	0.03	0.20	0.17	0.91	0.21
ORP	ORP	MV	-68.4	NA	-117.7	-82.6	-271.3	-79.5	-86.4	-44.9	-83.3	-69.7
pH, Field	PHFLD	pH units	7.13	NA	7.12	7.09	6.55	6.83	6.84	7.00	6.84	6.88
Specific Conductance, Field	CONDSPECFLD	umhos/cm	526	NA	537	1149	1127	1065	1550	904	959	725
Temperature	TEMP	deg C	17.28	NA	17.13	17.75	17.13	17.1	16.6	16.7	16.7	17.2
Turbidity, field	TURB-FIELD	NTU	1.08	NA	1.91	4.21	10.2	19.9	21.9	23.6	4.46	2.74
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	218	230	187	292	279	265	300	284	284	227
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	218	230	187	292	279	265	300	284	284	227
Chloride	16887-00-6	MG/L	6.17	6.24	7.87	8.39	8.82	8.92	7.44	7.17	8.95	5.78
Fluoride	16984-48-8	MG/L	0.305	0.306	0.321	0.246	0.168	0.310	0.300	0.217	0.304	0.206
Sulfate	14808-79-8	MG/L	99.9	99.6	101	334	356	441	439	352	367	185
Total Dissolved Solids	TDS	MG/L	332	332	374	771	709	840	877	795	756	517
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000162 U*	0.000645 U*	0.000273 U*	0.000443 U	0.000443 U	0.000443 U	0.000443 U	0.000500 U*	0.000443 U	0.000443 U
Arsenic	7440-38-2	MG/L	0.00613	0.00624	0.00461	0.00391	0.00195	0.00450	0.00977	0.00117	0.00632 J	0.00270
Barium	7440-39-3	MG/L	0.0327	0.0386	0.0308	0.0474	0.0382	0.0431	0.0556	0.0501	0.0426	0.0331
Beryllium	7440-41-7	MG/L	0.000102 U	0.000102 U	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000156 J	0.000131 U
Boron	7440-42-8	MG/L	0.368	0.371	0.443	0.513 J	0.549	0.500	0.602	0.464 J	0.426	0.360
Cadmium	7440-43-9	MG/L	0.000152 U	0.000152 U	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	102	101	89.4	207	177	212	251	201	216	143
Chromium	7440-47-3	MG/L	0.00146 U*		0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.00229 U*	0.000378 U
Cobalt	7440-48-4	MG/L	0.00163	0.00168	0.00150	0.00905	0.00597	0.0100	0.0104	0.00222	0.00457 J	0.00245
Lead	7439-92-1	MG/L	0.0000675 U	0.000163 J	0.0000675 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U
Lithium	7439-93-2	MG/L	0.00119 U*	0.000885 U*	0.00119 U*	0.00272 U*	0.00456 U*	0.00293 U*	0.00212 U	0.00235 U*	0.00442 U*	0.00311 U*
Magnesium	7439-95-4	MG/L	6.73	6.84	6.14	13.5	10.3	12.6	15.0	11.0 J	11.1	8.78
Mercury	7439-97-6	MG/L	0.0000521 U	0.0000688 U*	0.0000521 U	0.0000521 U	0.0000521 UJ	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U
Molybdenum	7439-98-7	MG/L	0.0574	0.0575	0.0532	0.0438	0.0333	0.0340	0.0420	0.0270	0.0295	0.0374
Potassium	7440-09-7	MG/L	2.20	2.23	2.10	3.08	2.47	2.76	3.39	2.72 J	2.55	2.22
Selenium	7782-49-2	MG/L	0.000389 U*	0.000348 U	0.000348 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 UJ	0.00127 U	0.00127 U
Sodium	7440-23-5	MG/L	7.24	7.32	7.70	8.60	7.70	7.72	8.07	8.06 J	8.02	8.31
Thallium	7440-28-0	MG/L	0.0000360 U	0.0000360 U	0.0000360 U	0.0000531 U	0.0000531 U	0.0000531 UJ	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.620 U	0.353 U	0.190 U	0.795 U	0.946 U*	0.558 U	0.469 U*	0.745 U*	0.382 U	1.24 U*
Radium 228	15262-20-1	pCi/L	0.442 U	0.353 U	0.190 U	0.795 U	-0.1040 UJ	0.515 U	0.469 U*	0.733 U*	0.355 U	1.13 U*
Radium-226	13982-63-3	pCi/L	0.177 U	-0.0122 U	-0.0820 U	-0.1060 U	0.946	0.0431 U	-0.0552 U	0.0124 U	0.0271 U	0.117 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID		GAF-422C		GAF-422C		GAF-422C	
Sample Date		7/20/2017		8/22/2017		8/22/2017	
Well Location		Downgradient		Downgradient		Downgradient	
Sample ID		GAF-GW-903A-07202017		GAF-GW-422C-08222017		GAF-GW-903B-08222017	
Sample Type		FD		N		FD	
Analyte	CASNO	Units	Result	Result	Result	Result	Result
<b>Field Parameter</b>							
Dissolved Oxygen	DO	MG/L	NA	0.23	NA	NA	NA
ORP	ORP	MV	NA	-76.2	NA	NA	NA
pH, Field	PHFLD	pH units	NA	7.12	NA	NA	NA
Specific Conductance, Field	CONDSPFCFLD	umhos/cm	NA	568.2	NA	NA	NA
Temperature	TEMP	deg C	NA	18.7	NA	NA	NA
Turbidity, field	TURB-FIELD	NTU	NA	2.81	NA	NA	NA
<b>General Chemistry</b>							
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	231	225	219	219	219
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	231	225	219	219	219
Chloride	16887-00-6	MG/L	5.88	8.51	8.57	8.57	8.57
Fluoride	16984-48-8	MG/L	0.239	0.273	0.269	0.269	0.269
Sulfate	14808-79-8	MG/L	188	152	153	153	153
Total Dissolved Solids	TDS	MG/L	504	389	386	386	386
<b>Metals, Total</b>							
Antimony	7440-36-0	MG/L	0.000443 U	0.000589 U*	0.000893 U*	0.000893 U*	0.000893 U*
Arsenic	7440-38-2	MG/L	0.00277	0.00423	0.00429	0.00429	0.00429
Barium	7440-39-3	MG/L	0.0338	0.0343	0.0346	0.0346	0.0346
Beryllium	7440-41-7	MG/L	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	0.414	0.385	0.371	0.371	0.371
Cadmium	7440-43-9	MG/L	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	144	116	116	116	116
Chromium	7440-47-3	MG/L	0.000378 U	0.000386 U*	0.000455 U*	0.000455 U*	0.000455 U*
Cobalt	7440-48-4	MG/L	0.00251	0.00183	0.00188	0.00188	0.00188
Lead	7439-92-1	MG/L	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U
Lithium	7439-93-2	MG/L	0.00408 U*	0.00256 U*	0.00316 U*	0.00316 U*	0.00316 U*
Magnesium	7439-95-4	MG/L	8.98	7.35	7.40	7.40	7.40
Mercury	7439-97-6	MG/L	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U
Molybdenum	7439-98-7	MG/L	0.0377	0.0449	0.0452	0.0452	0.0452
Potassium	7440-09-7	MG/L	2.28	2.21	2.23	2.23	2.23
Selenium	7782-49-2	MG/L	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U
Sodium	7440-23-5	MG/L	8.47	8.57	8.67	8.67	8.67
Thallium	7440-28-0	MG/L	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U
<b>Radiological</b>							
Radium 226 + Radium 228	RA226/228	pCi/L	0.718 U*	0.639 U	0.224 U	0.224 U	0.224 U
Radium 228	15262-20-1	pCi/L	0.718 U*	0.510 U	0.0686 U	0.0686 U	0.0686 U
Radium-226	13982-63-3	pCi/L	-0.00838 U	0.129 U	0.155 U	0.155 U	0.155 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-426C	GAF-426C	GAF-426C	GAF-426C	GAF-426C	GAF-426C	GAF-426C	GAF-426C	GAF-426C	GAF-426C
Sample Date			11/15/2016	12/15/2016	1/11/2017	2/21/2017	3/21/2017	4/25/2017	5/24/2017	6/21/2017	7/20/2017	8/24/2017
Well Location			Background	Background	Background	Background	Background	Background	Background	Background	Background	Background
Sample ID			GAF-GW-426C-11152016	GAF-GW-426C-12152016	GAF-GW-426C-01112017	GAF-GW-426C-02212017	GAF-GW-426C-03212017	GAF-GW-426C-04252017	GAF-GW-426C-05242017	GAF-GW-426C-06212017	GAF-GW-426C-07202017	GAF-GW-426C-08242017
Sample Type			N	N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	1.97	0.53	0.8	0.42	0.76	0.39	1.95	1.42	1.59	0.43
ORP	ORP	MV	-107.2	-113.2	-89.2	8.9	27.4	12.0	-16.7	14.6	-3.7	22.5
pH, Field	PHFLD	pH units	7.07	7.09	6.94	6.99	6.92	7.02	6.97	7.00	6.92	6.92
Specific Conductance, Field	CONDSPECFLD	umhos/cm	1026	1021	1128	1200	1243	1193	904	1114	1027	1152
Temperature	TEMP	deg C	16.45	12.28	15.04	16.49	15.4	17.1	16.1	18.3	19.1	17.8
Turbidity, field	TURB-FIELD	NTU	0.72	0.32	2.43	1.5	1.21	1.28	2.02	2.09	0.34	0.63
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	430	489	475	356	436	458	432	520	484	470
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	430	489	475	356	436	458	432	520	484	470
Chloride	16887-00-6	MG/L	35.3	23.9	49.0	47.0	63.7	65.3	38.3	22.6	12.5	25.7
Fluoride	16984-48-8	MG/L	0.298	0.400	0.296 U*	0.195	0.334	0.336	0.296	0.365	0.272	0.276
Sulfate	14808-79-8	MG/L	181	187	197 J	322	234	195	268	252	205	226
Total Dissolved Solids	TDS	MG/L	645	689	788	766	791	771	843	760	740	747
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.00104 U*	0.000338 U*	0.000495 U*	0.000443 U	0.000443 U	0.000443 U	0.00241 U*	0.000799 U*	0.000488 U*	0.000585 U*
Arsenic	7440-38-2	MG/L	0.000890 J	0.00119	0.000609 J	0.000282 J	0.000269 U*	0.000314 J	0.000479 J	0.000338 J	0.000503 U*	0.000448 U*
Barium	7440-39-3	MG/L	0.0483	0.0519	0.0450	0.0410	0.0414	0.0429	0.0392	0.0339	0.0327	0.0346
Beryllium	7440-41-7	MG/L	0.000102 U	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	0.0494	0.0571	0.0621 U*	0.0761 J	0.0604 J	0.0632 J	0.0669 J	0.0638 J	0.0482 J	0.0560 U*
Cadmium	7440-43-9	MG/L	0.000152 U	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	132	132	131	139	138	136	143	147	144	136 J
Chromium	7440-47-3	MG/L	0.000339 U	0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000389 U*
Cobalt	7440-48-4	MG/L	0.00186	0.000744 U*	0.000539	0.000572 U*	0.000256 U*	0.000216 J	0.000923	0.000121 J	0.0000947 U	0.000377 J
Lead	7439-92-1	MG/L	0.0000675 U	0.0000675 U	0.000318 U	0.000588 J	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U
Lithium	7439-93-2	MG/L	0.0141 J	0.0102	0.0224 U*	0.0179 U*	0.0152 U*	0.0133	0.0156	0.0164 U*	0.0166	0.0140 U*
Magnesium	7439-95-4	MG/L	43.5	45.6	52.4	56.9	51.9	52.4	55.2	63.4	67.4	60.5
Mercury	7439-97-6	MG/L	0.0000521 UJ	0.0000521 U	0.0000521 U	0.0000521 UJ	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U
Molybdenum	7439-98-7	MG/L	0.00931	0.00562	0.00564	0.00441 J	0.00465 U*	0.00481 J	0.00475 J	0.00246 J	0.00146 J	0.00277 J
Potassium	7440-09-7	MG/L	4.00	2.83	3.10	3.55	4.31	4.78	3.71	3.12	2.81	3.13
Selenium	7782-49-2	MG/L	0.000860 J	0.000348 U	0.00127 U	0.00127 U	0.00127 U	0.00127 UJ	0.00127 U	0.00127 U	0.00127 U	0.00127 U
Sodium	7440-23-5	MG/L	29.8	13.9	27.9	37.0	48.9	45.6	35.3	21.3	12.8	19.9
Thallium	7440-28-0	MG/L	0.0000360 U	0.0000360 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.000117 U*	0.0000531 U	0.0000531 U	0.0000650 J
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.509 U	0.480 J	0.537 U	0.538 U	0.374 U	0.127 U	0.611 UR	0.417 U	0.254 U	1.03 U*
Radium 228	15262-20-1	pCi/L	0.212 U	0.451	0.289 U	0.186 U	0.374 U	0.122 U	0.269 UR	0.386 U	0.218 U	0.789 U*
Radium-226	13982-63-3	pCi/L	0.296 U	0.0295 UJ	0.248 U	0.352 U	-0.1290 U	0.00504 U	0.342 UJ	0.0313 U	0.0356 U	0.242 U



**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-426L	GAF-426L	GAF-426L	GAF-426L	GAF-426L	GAF-426L	GAF-426L	GAF-426L	GAF-426L	GAF-426L
Sample Date			11/16/2016	12/16/2016	1/12/2017	2/21/2017	3/21/2017	4/26/2017	5/24/2017	6/21/2017	7/20/2017	8/24/2017
Well Location			Background	Background	Background	Background	Background	Background	Background	Background	Background	Background
Sample ID			GAF-GW-426L-11162016	GAF-GW-426L-12162016	GAF-GW-426L-01122017	GAF-GW-426L-02212017	GAF-GW-426L-03212017	GAF-GW-426L-04262017	GAF-GW-426L-05242017	GAF-GW-426L-06212017	GAF-GW-426L-07202017	GAF-GW-426L-08242017
Sample Type			N	N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	1.62	1.05	2.55	0.33	0.43	0.60	0.71	0.67	0.42	0.42
ORP	ORP	MV	-106.5	29.9	27.2	40.8	4	-80.8	-27.1	-72.6	-49.7	-67.1
pH, Field	PHFLD	pH units	7.28	6.9	6.63	6.81	6.83	6.92	6.89	6.91	6.82	6.82
Specific Conductance, Field	CONDSPECFLD	umhos/cm	742	804	820	882	925	782	717	994	960	1009
Temperature	TEMP	deg C	14.27	12.02	14.59	15.69	16.3	16.9	15.5	19.6	18.3	16.5
Turbidity, field	TURB-FIELD	NTU	1.5	0.85	0.21	2.95	0.45	4.7	3.5	2.84	0.92	0.52
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	470	459	501	259	474	526	454	436	502	456
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	470	459	501	259	474	526	454	436	502	456
Chloride	16887-00-6	MG/L	5.89	18.6	7.20	12.2	18.6	14.4	26.5	30.1	23.2	26.2
Fluoride	16984-48-8	MG/L	0.338	0.382	0.242	0.203	0.372	0.350	0.339	0.359	0.309	0.338
Sulfate	14808-79-8	MG/L	45.4	61.1	71.5	275	103	65.5	88.0	115	84.9	78.9
Total Dissolved Solids	TDS	MG/L	410	477	504	513	555	499	581	558	537	523
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000458 U*	0.000957 U*	0.000443 U	0.000443 U	0.000443 U	0.00107 U*	0.000443 U	0.000644 U*	0.000537 U*	0.000443 U
Arsenic	7440-38-2	MG/L	0.000518 U*	0.000332 J	0.000220 U	0.000320 J	0.000287 U*	0.000975 J	0.00137	0.00113	0.00125 U*	0.00122 U*
Barium	7440-39-3	MG/L	0.164	0.156 J	0.0308	0.0393	0.0508	0.0409	0.0579	0.0631	0.0716	0.0717
Beryllium	7440-41-7	MG/L	0.000102 U	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	0.0349	0.0504	0.0326 J	0.0502 J	0.0507 J	0.0592 U*	0.0540 J	0.0524 J	0.0463 J	0.0479 U*
Cadmium	7440-43-9	MG/L	0.000152 U	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	111	98.9	154	124	135	125	139	129	137	121 J
Chromium	7440-47-3	MG/L	0.000339 U	0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000484 U*
Cobalt	7440-48-4	MG/L	0.000661	0.000433 J	0.0000947 U	0.000168 U*	0.000165 U*	0.00142	0.00148	0.00172	0.00212	0.00171
Lead	7439-92-1	MG/L	0.0000675 U	0.0000675 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U
Lithium	7439-93-2	MG/L	0.00805 U*	0.00948	0.00660 U*	0.0123 U*	0.00886 U*	0.00953 U*	0.0132	0.0122 U*	0.0123 U*	0.0111 U*
Magnesium	7439-95-4	MG/L	31.8	30.0	24.4	20.6	22.8	26.4	27.7	26.4	28.0	25.3
Mercury	7439-97-6	MG/L	0.0000691 U*	0.0000521 U	0.0000521 U	0.0000521 UJ	0.0000653 U	0.00281	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U
Molybdenum	7439-98-7	MG/L	0.00203 J	0.00441 J	0.000593 U	0.00117 J	0.00258 U*	0.00406 J	0.00624	0.00618	0.00749	0.00516
Potassium	7440-09-7	MG/L	3.57	6.30	1.30	3.40	5.61	6.46	12.4	13.4	15.2	11.3
Selenium	7782-49-2	MG/L	0.000353 U*	0.000348 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U
Sodium	7440-23-5	MG/L	11.4	20.5	5.02	14.8	22.0	20.0	39.5	43.4	50.0	37.1
Thallium	7440-28-0	MG/L	0.0000360 U	0.0000360 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000590 J
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.410 U	0.486 UJ	0.334 U	0.745 U	0.646 UJ	0.518 U	0.204 UR	0.0795 U	0.827 U*	0.609 U
Radium 228	15262-20-1	pCi/L	0.306 U	0.203 UJ	0.290 U	0.128 U	0.574 UJ	0.240 U	0.172 UR	0.00275 U	0.547 U*	0.537 U
Radium-226	13982-63-3	pCi/L	0.105 U	0.284 U	0.0433 U	0.617 U	0.0722 U	0.278 U	0.0329 UJ	0.0768 U	0.280 U	0.0723 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID		GAF-427C	GAF-427C	GAF-427C	GAF-427C	GAF-427C	GAF-427C	GAF-427C	GAF-427C	GAF-427C	GAF-427C	GAF-427C
Sample Date		11/15/2016	12/15/2016	1/13/2017	2/21/2017	3/21/2017	4/25/2017	5/24/2017	6/21/2017	7/18/2017	8/24/2017	
Well Location		Background	Background	Background	Background	Background	Background	Background	Background	Background	Background	
Sample ID		GAF-GW-427C-11152016	GAF-GW-427C-12152016	GAF-GW-427C-01132017	GAF-GW-427C-02212017	GAF-GW-427C-03212017	GAF-GW-427C-04252017	GAF-GW-427C-05242017	GAF-GW-427C-06212017	GAF-GW-427C-07182017	GAF-GW-427C-08242017	
Sample Type		N	N	N	N	N	N	N	N	N	N	
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	3.24	0.52	NR	0.42	0.43	0.52	0.44	0.45	0.41	0.84
ORP	ORP	MV	-173.5	-88.6	NR	3.7	-55.1	-89.0	-117.8	-69.9	-62.8	-78.8
pH, Field	PHFLD	pH units	7.13	7.15	NR	7.1	7.08	7.15	7.13	7.22	7.17	7.11
Specific Conductance, Field	CONDSPECFLD	umhos/cm	711	683	NR	675	707	643	513	589	602	695
Temperature	TEMP	deg C	14.85	10.91	NR	15.55	16.4	15.1	15.7	18.0	17.3	18.1
Turbidity, field	TURB-FIELD	NTU	0.65	0.31	NR	0.5	2.01	0.40	0.60	0.46	1.17	0.50
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	482	410	371	368	460	443	408	432	419	438
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	482	410	371	368	460	443	408	432	419	438
Chloride	16887-00-6	MG/L	5.21	6.14	5.30	4.74	5.12	4.13	5.51	4.80	4.44	5.86
Fluoride	16984-48-8	MG/L	0.395	0.445	0.377	0.322	0.464	0.453	0.471	0.516	0.502	0.477
Sulfate	14808-79-8	MG/L	46.3	47.7	40.1	84.1	44.5	39.2	39.3	41.3	40.4	39.8
Total Dissolved Solids	TDS	MG/L	374	389	319	356	403	396	419	381	403	379
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000849 U*	0.000444 U*	0.000903 J	0.000443 U	0.000450 U*	0.000443 U	0.00179 U*	0.00390	0.00466 U*	0.00203 U*
Arsenic	7440-38-2	MG/L	0.000830 J	0.00122	0.00106	0.00142	0.00142 U*	0.00114	0.00124	0.00128	0.00120 U*	0.00173
Barium	7440-39-3	MG/L	0.116	0.128	0.128	0.128	0.151	0.127	0.154	0.141	0.133	0.179
Beryllium	7440-41-7	MG/L	0.000102 U	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	0.0358	0.0383	0.0325 J	0.0476 J	0.121	0.0894 J	0.0903	0.0714 J	0.0714 U*	0.138
Cadmium	7440-43-9	MG/L	0.000152 U	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	99.2	93.1	103	84.5	100	97.6	95.4	93.6	94.5	99.0 J
Chromium	7440-47-3	MG/L	0.000339 U	0.000339 U	0.000378 U	0.000378 U	0.000379 U*	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000399 U*
Cobalt	7440-48-4	MG/L	0.000472 J	0.000412 U*	0.000357 J	0.000378 U*	0.000256 U*	0.0000947 U	0.000309 J	0.000235 J	0.000162 J	0.000193 J
Lead	7439-92-1	MG/L	0.0000675 U	0.0000675 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U
Lithium	7439-93-2	MG/L	0.0146 J	0.00670	0.00839 U*	0.00626 U*	0.00828 U*	0.00654 U*	0.00923 U*	0.0128 U*	0.0124 U*	0.0133 U*
Magnesium	7439-95-4	MG/L	26.1	25.5	27.0	22.5	27.8	28.4	26.5	26.4	26.1	28.6
Mercury	7439-97-6	MG/L	0.0000530 U*	0.0000521 U	0.0000521 U	0.0000521 UJ	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U
Molybdenum	7439-98-7	MG/L	0.00120 J	0.00121 J	0.000962 U*	0.00112 J	0.000983 U*	0.000858 U*	0.00118 U*	0.000981 J	0.00101 J	0.00123 J
Potassium	7440-09-7	MG/L	8.52	5.61	5.41	4.43	3.66	2.99	6.35	8.68	8.51	8.82
Selenium	7782-49-2	MG/L	0.000348 U	0.000376 U*	0.00127 U	0.00127 U	0.00127 U	0.00127 UJ	0.00127 U	0.00127 U	0.00127 U	0.00127 U
Sodium	7440-23-5	MG/L	7.66	6.04	5.32	5.02	7.12	5.12	6.11	6.65	6.59	8.29
Thallium	7440-28-0	MG/L	0.0000360 U	0.0000360 U	0.0000531 U	0.000197 U*	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.774 J	1.13 J	0.660 U	1.21 U*	0.747 U	0.772 U	0.693 J	0.141 UJ	0.621 U	1.71 U*
Radium 228	15262-20-1	pCi/L	0.466	0.624	0.374 U	0.852 U*	0.520 U	0.489 U	0.693 J	0.141 UJ	0.350 U	1.08 U*
Radium-226	13982-63-3	pCi/L	0.308 U	0.505 J	0.286 U	0.355 U	0.227 U	0.283 U	-0.1890 UJ	-0.2080 U	0.271 U	0.622 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-427L	GAF-427L	GAF-427L	GAF-427L	GAF-427L	GAF-427L	GAF-427L	GAF-427L	GAF-427L	GAF-427L
Sample Date			11/15/2016	12/15/2016	1/13/2017	2/20/2017	3/22/2017	4/25/2017	5/23/2017	6/21/2017	7/19/2017	8/23/2017
Well Location			Background	Background	Background	Background	Background	Background	Background	Background	Background	Background
Sample ID			GAF-GW-427L-11152016	GAF-GW-427L-12152016	GAF-GW-427L-01132017	GAF-GW-427L-02202017	GAF-GW-427L-03222017	GAF-GW-427L-04252017	GAF-GW-427L-05232017	GAF-GW-427L-06212017	GAF-GW-427L-07192017	GAF-GW-427L-08232017
Sample Type			N	N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	2.59	0.42	0.6	0.94	0.46	0.43	0.40	0.40	0.39	0.40
ORP	ORP	MV	-91.8	11.3	72	-76.9	62.9	4.2	11.4	5.4	7.3	-170.4
pH, Field	PHFLD	pH units	7.12	7.12	7.03	7.11	7.1	7.15	7.03	7.10	7.07	6.91
Specific Conductance, Field	CONDSPECFLD	umhos/cm	659	664	678	669	553.3	617	595	664	612	568
Temperature	TEMP	deg C	15.51	12.44	14.09	16.18	14.4	15.9	16.7	16.9	17.3	17.1
Turbidity, field	TURB-FIELD	NTU	0.49	0.11	0.18	0.89	0.73	0.66	0.24	0.53	0.33	0.33
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	404	380	374	388	406	395	380	368	419	380
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	404	380	374	388	406	395	380	368	419	380
Chloride	16887-00-6	MG/L	12.2	16.2	14.8	15.5	14.1	13.8	14.8	15.4	15.3	15.5
Fluoride	16984-48-8	MG/L	0.285	0.328	0.290	0.238	0.325	0.335	0.312	0.368	0.357	0.306
Sulfate	14808-79-8	MG/L	41.4	46.6	42.6	46.8	45.2	40.8	44.5	45.4	45.4	45.3
Total Dissolved Solids	TDS	MG/L	377	394	374	354	373	386	403	385	367	380
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000272 U*	0.000273 U*	0.000929 J	0.000730 U*	0.000443 U	0.000443 U	0.000443 UJ	0.00100 U*	0.000468 U*	0.000443 U
Arsenic	7440-38-2	MG/L	0.000256 U*	0.000235 U*	0.000220 U	0.000220 U	0.000291 J	0.000220 U	0.000220 U	0.000300 J	0.000340 U*	0.000348 U*
Barium	7440-39-3	MG/L	0.0779	0.0777	0.0868	0.0746	0.0763	0.0738	0.0827	0.0733	0.0833	0.0766
Beryllium	7440-41-7	MG/L	0.000102 U	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	0.0627	0.0761	0.0733 J	0.0708 J	0.0616 J	0.0711 J	0.0782 J	0.0849	0.0754 J	0.103
Cadmium	7440-43-9	MG/L	0.000152 U	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	91.4	84.5	94.8	84.0	84.9	84.8	83.8 J	82.0	95.5	90.7
Chromium	7440-47-3	MG/L	0.000339 U	0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U
Cobalt	7440-48-4	MG/L	0.000301 J	0.000335 U*	0.000532	0.000659 U*	0.000473 J	0.000374 J	0.000490 J	0.000506	0.000482 J	0.000549
Lead	7439-92-1	MG/L	0.000900 J	0.000675 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U
Lithium	7439-93-2	MG/L	0.00875 J	0.00770	0.0100 U*	0.0128 U*	0.00955 U*	0.00894 U*	0.0100	0.0116 U*	0.00895	0.00867
Magnesium	7439-95-4	MG/L	27.2	25.5	28.8	24.6	24.6	26.9	25.6	25.1	29.0	26.9
Mercury	7439-97-6	MG/L	0.000537 U*	0.000521 U	0.000521 U	0.000521 U	0.000653 U	0.000653 U	0.000653 U	0.000653 U	0.000653 U	0.000653 UJ
Molybdenum	7439-98-7	MG/L	0.000873 U	0.000873 U	0.000966 U*	0.00130 U*	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U
Potassium	7440-09-7	MG/L	1.55	1.45	1.71	1.46	1.48	1.49	1.53	1.45	1.69	1.55
Selenium	7782-49-2	MG/L	0.000348 U	0.000517 U*	0.00127 U	0.00127 U	0.00127 U	0.00127 UJ	0.00127 U	0.00127 U	0.00127 U	0.00127 UJ
Sodium	7440-23-5	MG/L	11.9	11.4	11.7	11.3	11.2	10.8	11.2 J	11.3	13.3	12.2
Thallium	7440-28-0	MG/L	0.000360 U	0.000360 U	0.000531 U	0.000610 U*	0.000531 U	0.000531 U	0.000531 U	0.000531 U	0.000531 U	0.000531 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.577 U	0.144 UJ	0.434 U	0.132 UJ	0.560 J	0.260 U	1.56 J	0.511 U	0.573 U	0.0520 U
Radium 228	15262-20-1	pCi/L	0.362 U	0.144 U	0.295 U	-0.0633 UJ	-0.0398 U	0.254 U	1.56	0.351 U	0.427 U	-0.8040 U
Radium-226	13982-63-3	pCi/L	0.216 U	-0.1680 UJ	0.139 U	0.132 U	0.560	0.00553 U	-0.1660 U	0.161 U	0.146 U	0.0520 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-446C	GAF-446C	GAF-446C	GAF-446C	GAF-446C	GAF-446C	GAF-446C	GAF-446C	GAF-446C	GAF-446C
Sample Date			11/16/2016	12/15/2016	12/15/2016	1/11/2017	1/11/2017	2/22/2017	2/22/2017	3/22/2017	3/22/2017	4/25/2017
Well Location			Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID			GAF-GW-446C-11162016	GAF-GW-446C-12152016	GAF-GW-903-12152016	GAF-GW-446C-01112017	GAF-GW-903B-01112017	GAF-GW-446C-02222017	GAF-GW-903D-02222017	GAF-GW-446C-03222017	GAF-GW-903C-03222017	GAF-GW-446C-04252017
Sample Type			N	N	FD	N	FD	N	FD	N	FD	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	0.90	1.67	NA	0.46	NA	0.37	NA	0.35	NA	0.81
ORP	ORP	MV	-225.3	-43.9	NA	-23.3	NA	-412.4	NA	-125.1	NA	-3.6
pH, Field	PHFLD	pH units	6.74	6.71	NA	6.94	NA	7.39	NA	6.79	NA	6.76
Specific Conductance, Field	CONDSPECFLD	umhos/cm	841	1222	NA	1062	NA	978	NA	850	NA	990
Temperature	TEMP	deg C	17.31	16.34	NA	16.78	NA	17.09	NA	15.7	NA	16.8
Turbidity, field	TURB-FIELD	NTU	0.62	0.91	NA	4.73	NA	10.2	NA	9.94	NA	1.24
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	348	396	416	371	349	356	398	386	366	395
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	348	396	416	371	349	356	398	386	366	395
Chloride	16887-00-6	MG/L	4.93	7.81	7.91	8.97	8.61	5.44	5.67	7.10	7.02	8.41
Fluoride	16984-48-8	MG/L	0.0544 J	0.0960 U*	0.103 U*	0.0861 U*	0.0867 U*	0.0479 J	0.0487 J	0.0767 J	0.0790 J	0.0855 U*
Sulfate	14808-79-8	MG/L	130	144	146	131 J	146 J	138 J	140 J	158	156	161
Total Dissolved Solids	TDS	MG/L	525	544	544	558	549	550	539	546	555	543
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000243 U*	0.000232 U*	0.000212 U*	0.000443 U	0.000443 U	0.000475 U*	0.000443 U	0.000443 U	0.000443 U	0.000443 U
Arsenic	7440-38-2	MG/L	0.00481	0.00427	0.00394	0.00353	0.00356	0.00397	0.00397	0.00424	0.00421	0.00415
Barium	7440-39-3	MG/L	0.0749	0.0707	0.0674	0.0661	0.0674	0.0654	0.0688	0.0685	0.0659	0.0632 J
Beryllium	7440-41-7	MG/L	0.000102 U	0.000102 U	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	5.30	6.33	6.33	6.29	6.43	5.51	5.98	5.66 J	5.94 J	5.57
Cadmium	7440-43-9	MG/L	0.000152 U	0.000152 U	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000960 U*	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	143	129	122	122	124	118	128	126	122	127
Chromium	7440-47-3	MG/L	0.000339 U	0.000339 U	0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U
Cobalt	7440-48-4	MG/L	0.00306	0.00278	0.00261	0.00256	0.00265	0.00273	0.00288	0.00287	0.00299	0.00282
Lead	7439-92-1	MG/L	0.0000880 J	0.0000675 U	0.0000675 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U
Lithium	7439-93-2	MG/L	0.00106 U*	0.00128 U*	0.00107 U*	0.0130 U*	0.0125 U*	0.00241 U*	0.00227 U*	0.00858 U*	0.00602 U*	0.00212 U
Magnesium	7439-95-4	MG/L	8.29	7.65	7.22	7.24	7.39	7.06	7.70	7.18	6.86	7.65
Mercury	7439-97-6	MG/L	0.0000521 U	0.0000521 U	0.0000521 U	0.0000521 U	0.0000521 U	0.000200 U	0.000200 U	0.0000653 U	0.0000653 U	0.0000653 U
Molybdenum	7439-98-7	MG/L	0.0477	0.0445	0.0421	0.0400	0.0400	0.0423	0.0451	0.0451	0.0426	0.0456
Potassium	7440-09-7	MG/L	3.05	2.82	2.65	2.78	2.84	2.66	2.90	2.88	2.78	2.82
Selenium	7782-49-2	MG/L	0.000622 U*	0.000348 U	0.000348 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 UJ
Sodium	7440-23-5	MG/L	34.0	32.2	30.9	32.8	33.6	36.8	39.8	38.4	37.2	39.4
Thallium	7440-28-0	MG/L	0.0000930 J	0.0000690 U*	0.0000580 U*	0.0000760 J	0.0000720 J	0.0000900 U*	0.000186 U*	0.0000910 U*	0.0000531 U	0.0000531 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.883 U	0.350 UJ	0.303 UJ	0.355 U	0.332 U	0.538 U	0.461 U	0.968 U*	0.203 UJ	0.565 U
Radium 228	15262-20-1	pCi/L	0.538 U	0.325 U	0.136 UJ	0.228 U	0.332 U	0.122 U	0.0119 UJ	0.705 U*	0.129 UJ	0.191 U
Radium-226	13982-63-3	pCi/L	0.346 U	0.0243 UJ	0.168 UJ	0.127 U	-0.0597 U	0.416 U	0.449 U	0.263 U	0.0734 U	0.374 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-446C	GAF-446C	GAF-446C	GAF-446C	GAF-446C	GAF-446C	GAF-446C	GAF-446C	GAF-446C	GAF-449L
Sample Date			4/25/2017	5/23/2017	5/23/2017	6/20/2017	6/20/2017	7/19/2017	7/19/2017	8/22/2017	8/22/2017	11/14/2016
Well Location			Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID			GAF-GW-903A-04252017	GAF-GW-446C-05232017	GAF-GW-903D-05232017	GAF-GW-446C-06202017	GAF-GW-903B-06202017	GAF-GW-446C-07192017	GAF-GW-903A-07192017	GAF-GW-446C-08222017	GAF-GW-903A-08222017	GAF-GW-449L-11142016
Sample Type			FD	N	FD	N	FD	N	FD	N	FD	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	NA	0.34	NA	0.16	NA	0.34	NA	0.56	NA	1.33
ORP	ORP	MV	NA	-48.4	NA	-63.1	NA	-52.0	NA	-42.4	NA	-183.8
pH, Field	PHFLD	pH units	NA	6.76	NA	6.69	NA	6.72	NA	6.79	NA	6.87
Specific Conductance, Field	CONDSPECFLD	umhos/cm	NA	923	NA	842	NA	817	NA	784	NA	729
Temperature	TEMP	deg C	NA	17.5	NA	17.4	NA	18.9	NA	19.7	NA	18.45
Turbidity, field	TURB-FIELD	NTU	NA	0.53	NA	0.39	NA	0.17	NA	2.07	NA	0.13
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	391	352	382	398	392	406	392	362	378	228
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	391	352	382	398	392	406	392	362	378	228
Chloride	16887-00-6	MG/L	8.39	7.99	7.96	8.20	7.99	7.91	7.75	8.17	8.12	5.86
Fluoride	16984-48-8	MG/L	0.0860 U*	0.0767 J	0.0749 J	0.0873 J	0.0931 J	0.117	0.0936 J	0.0693 J	0.0703 J	0.0531 J
Sulfate	14808-79-8	MG/L	163	160	157	160	159	159	157	157	154	98.4
Total Dissolved Solids	TDS	MG/L	552	562	570	547	547	552	555	538	541	502
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000443 U	0.000443 U	0.000625 U*	0.000675 U*	0.000884 U*	0.000482 U*	0.000443 U	0.000443 U	0.000443 U	0.000211 U*
Arsenic	7440-38-2	MG/L	0.00500	0.00444	0.00465	0.00502	0.00521	0.00538	0.00530	0.00613	0.00594	0.000779 J
Barium	7440-39-3	MG/L	0.0634	0.0694	0.0698	0.0649	0.0674	0.0682	0.0709	0.0698	0.0687	0.0409
Beryllium	7440-41-7	MG/L	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000102 U
Boron	7440-42-8	MG/L	5.60	5.61	5.85	5.98	6.05	5.57	5.56	5.65	5.86	9.79
Cadmium	7440-43-9	MG/L	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.000152 U
Calcium	7440-70-2	MG/L	127	121	129	126	129	128	131	128	134	105
Chromium	7440-47-3	MG/L	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000339 U
Cobalt	7440-48-4	MG/L	0.00306	0.00250	0.00282	0.00301	0.00310	0.00293	0.00300	0.00296	0.00254	0.00463
Lead	7439-92-1	MG/L	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000157 J
Lithium	7439-93-2	MG/L	0.00212 U	0.00212 U	0.00217 J	0.00287 U*	0.00270 U*	0.00302 J	0.00357 J	0.00212 U	0.00225 U*	0.00231 U*
Magnesium	7439-95-4	MG/L	7.64	7.37	7.66	7.61	7.62	7.67	7.94	7.51	7.84	4.23
Mercury	7439-97-6	MG/L	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000521 U
Molybdenum	7439-98-7	MG/L	0.0454	0.0480	0.0487	0.0467	0.0483	0.0463	0.0479	0.0484	0.0519	0.0232
Potassium	7440-09-7	MG/L	2.84	2.87	3.03	2.77	2.81	2.91	2.99	2.79	2.93	3.24
Selenium	7782-49-2	MG/L	0.00127 UJ	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.000348 U
Sodium	7440-23-5	MG/L	39.7	42.0	44.1	45.8	46.3	47.1	48.5	39.9	41.9	37.9
Thallium	7440-28-0	MG/L	0.0000531 U	0.0000840 J	0.0000950 J	0.0000760 J	0.0000860 J	0.0000700 J	0.0000800 J	0.0000531 U	0.0000531 U	0.0000800 U*
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.320 U	1.27 J	0.463 UJ	0.476 UJ	1.66 J	1.22 U*	0.197 UJ	0.858 J	0.612 U	0.478 U
Radium 228	15262-20-1	pCi/L	0.266 U	1.27	0.292 UJ	0.211 UJ	1.66 J	0.949 U*	0.197 UJ	0.294 U	0.220 U	0.363 U
Radium-226	13982-63-3	pCi/L	0.0548 U	-0.0175 U	0.170 U	0.265 U	-0.0983 U	0.270 U	-0.1150 U	0.564	0.392 U	0.115 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID		GAF-449L	GAF-449L	GAF-449L	GAF-449L	GAF-449L	GAF-449L	GAF-449L	GAF-449L	GAF-449L	GAF-449L	GAF-450C
Sample Date		12/15/2016	1/12/2017	2/21/2017	3/21/2017	4/25/2017	5/22/2017	6/20/2017	7/19/2017	8/22/2017	2/23/2017	
Well Location		Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID		GAF-GW-449L-12152016	GAF-GW-449L-01122017	GAF-GW-449L-02212017	GAF-GW-449L-03212017	GAF-GW-449L-04252017	GAF-GW-449L-05222017	GAF-GW-449L-06202017	GAF-GW-449L-07192017	GAF-GW-449L-08222017	GAF-GW-450C-02232017	
Sample Type		N	N	N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	1.31	0.41	0.37	0.17	0.28	0.30	0.15	0.28	0.84	4.12
ORP	ORP	MV	-40	-5.3	-368.9	-17.2	4.7	-9.9	-24.9	2.1	-24.8	-106.9
pH, Field	PHFLD	pH units	6.8	6.78	6.83	6.78	6.82	7.20	6.76	6.91	6.81	6.84
Specific Conductance, Field	CONDSPECFLD	umhos/cm	1081	724	839	824	830	573	705	717	659	1083
Temperature	TEMP	deg C	15.51	17.44	17.69	17.2	17.9	18.5	18.3	19.8	19.6	16.98
Turbidity, field	TURB-FIELD	NTU	0.28	1.72	0.16	0.35	0.26	0.41	0.38	0.41	0.80	51.6
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	235	213	246	235	237	240	238	245	175	341
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	235	213	246	235	237	240	238	245	175	341
Chloride	16887-00-6	MG/L	8.87	8.93	8.62	9.26	8.88	6.39	9.06	8.29	9.04	10.7 J
Fluoride	16984-48-8	MG/L	0.101 U*	0.0735 J	0.0640 J	0.121	0.0896 U*	0.0730 J	0.108	0.0699 J	0.0779 J	0.104
Sulfate	14808-79-8	MG/L	195	171	195	185	183	162	184	167	182	374
Total Dissolved Solids	TDS	MG/L	506	492	477	486	486	481	480	459	472	791
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000267 U*	0.000443 U	0.000443 U	0.000443 U	0.000443 U	0.000603 U*	0.000559 U*	0.000443 U	0.000599 U*	0.000443 U
Arsenic	7440-38-2	MG/L	0.00104	0.000977 J	0.000872 J	0.00114 U*	0.00116	0.000961 J	0.00127	0.00121 U*	0.00131 U*	0.00366
Barium	7440-39-3	MG/L	0.0404	0.0444	0.0372	0.0371	0.0333	0.0376	0.0356	0.0380	0.0377	0.0546
Beryllium	7440-41-7	MG/L	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000220 J	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	11.9	11.3 J	12.5	10.5	11.0	11.0	11.6	10.6	10.7	4.64
Cadmium	7440-43-9	MG/L	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	101	113	90.9	96.9	96.7	92.4	100	102	94.1	156 J
Chromium	7440-47-3	MG/L	0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000427 U*	0.000654 J
Cobalt	7440-48-4	MG/L	0.00459	0.00516	0.00437	0.00499	0.00419	0.00398	0.00438	0.00442	0.00429	0.00581
Lead	7439-92-1	MG/L	0.0000675 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000609 J
Lithium	7439-93-2	MG/L	0.00113 U*	0.00257 U*	0.00626 U*	0.00212 U	0.00212 U	0.00268 U*	0.00212 U	0.00212 U	0.00212 U	0.00639 U*
Magnesium	7439-95-4	MG/L	3.99	4.45	3.42	3.69	3.82	3.64 J	3.87	3.94	3.65	7.14 J
Mercury	7439-97-6	MG/L	0.0000521 U	0.0000521 U	0.0000521 UJ	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000521 U
Molybdenum	7439-98-7	MG/L	0.0242	0.0284	0.0252	0.0269	0.0285	0.0295	0.0302	0.0315	0.0303	0.00958
Potassium	7440-09-7	MG/L	3.16	3.69	2.92	3.17	3.05	3.07 J	3.17	3.32	3.03	3.05
Selenium	7782-49-2	MG/L	0.000607 U*	0.00127 U	0.00127 U	0.00127 U	0.00127 UJ	0.00127 UJ	0.00127 U	0.00127 U	0.00127 U	0.00127 U
Sodium	7440-23-5	MG/L	37.3	42.6	35.2	38.6	39.0	38.4 J	43.8	43.7	40.2	17.9 J
Thallium	7440-28-0	MG/L	0.0000850 U*	0.0000960 J	0.0000590 U*	0.0000531 U	0.0000531 U	0.0000830 U*	0.0000700 J	0.0000740 J	0.0000870 J	0.0000531 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.208 UJ	0.158 U	0.791 U	0.188 U	0.0909 U	0.167 U	0.0446 U	0.838 U	0.406 U	0.613 U
Radium 228	15262-20-1	pCi/L	0.195 U	0.158 U	0.244 U	0.188 U	0.00537 U	-0.3050 U	0.0446 U	0.534 U	0.0823 U	0.316 U
Radium-226	13982-63-3	pCi/L	0.0126 UJ	-0.0495 U	0.547 U	-0.0876 U	0.0855 U	0.167 U	-0.0895 U	0.304 U	0.324 U	0.297 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-450C	GAF-450C	GAF-450C	GAF-450C	GAF-450L	GAF-450L	GAF-450L	GAF-450L	GAF-450L	GAF-451C
Sample Date			3/23/2017	4/19/2017	5/18/2017	6/19/2017	2/23/2017	3/17/2017	4/19/2017	5/18/2017	6/22/2017	11/17/2016
Well Location			Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID			GAF-GW-450C-03232017	GAF-GW-450C-04192017	GAF-GW-450C-05182017	GAF-GW-450C-06192017	GAF-GW-450L-02232017	GAF-GW-450L-03172017	GAF-GW-450L-04192017	GAF-GW-450L-05182017	GAF-GW-450L-06222017	GAF-GW-451C-11172016
Sample Type			N	N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	0.96	0.21	0.17	0.26	0.75	0.27	0.32	0.25	0.28	0.28
ORP	ORP	MV	-78.1	-25.8	-166.3	-94.1	-63.8	-68.9	-24.9	-161.3	-38.0	-122.2
pH, Field	PHFLD	pH units	6.95	6.86	6.83	6.90	6.88	6.88	6.95	6.93	6.93	6.88
Specific Conductance, Field	CONDSPECFLD	umhos/cm	1259	1100	1066	1102	1065	1528	1090	1089	978	1418
Temperature	TEMP	deg C	16.4	17.7	17.4	18.3	16.07	14.7	17.4	18.0	18.0	16.81
Turbidity, field	TURB-FIELD	NTU	22.3	12.0	3.90	7.59	83.9	5.19	5.98	3.36	14.4	0.04
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	332	345	342	314	384	328	349	340	322	530
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	332	345	342	314	384	328	349	340	322	530
Chloride	16887-00-6	MG/L	9.11	10.7	8.63	11.7	10.4 J	10.8	10.2	8.86	11.1	32.5
Fluoride	16984-48-8	MG/L	0.114	0.133	0.136	0.139	0.112	0.126	0.168	0.130	0.208	0.423
Sulfate	14808-79-8	MG/L	319	365	305	319	359	343	355	266	334	377
Total Dissolved Solids	TDS	MG/L	779	839	770	755	750	734	813	736	785	905
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000717 U*	0.000536 U*	0.000443 U	0.000443 U	0.000443 U	0.000670 U*	0.00116 U*	0.000443 U	0.000628 U*	0.000413 U*
Arsenic	7440-38-2	MG/L	0.00389	0.00475	0.00448	0.00843 J	0.00394	0.00637	0.00341	0.00234	0.000987 U*	0.00249
Barium	7440-39-3	MG/L	0.0465	0.0417	0.0409	0.0371	0.146	0.0918	0.0752	0.0751	0.0630	0.0745
Beryllium	7440-41-7	MG/L	0.000131 U	0.000131 UJ	0.000131 U	0.00114	0.000131 U	0.000131 UJ	0.000131 UJ	0.000131 U	0.000131 U	0.000102 U
Boron	7440-42-8	MG/L	4.49	3.66	5.87	5.78	5.06	7.70 J	3.31	5.58 J	2.67 J	0.109
Cadmium	7440-43-9	MG/L	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.000317 U*	0.000152 U
Calcium	7440-70-2	MG/L	191	195	182	202	143 J	169	176	168	195	200
Chromium	7440-47-3	MG/L	0.000403 J	0.000378 U	0.000378 U	0.00231	0.00144 J	0.000378 U	0.000428 J	0.000378 U	0.000436 J	0.000339 U
Cobalt	7440-48-4	MG/L	0.00477	0.00790	0.00478	0.00590	0.00891	0.0124	0.0108	0.00926 J	0.00356 J	0.00283
Lead	7439-92-1	MG/L	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.00160	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.0000675 U
Lithium	7439-93-2	MG/L	0.00420 U*	0.00212 UJ	0.00212 U	0.00332 U*	0.00685 U*	0.00212 U	0.00212 UJ	0.00281 J	0.0128 U*	0.00887
Magnesium	7439-95-4	MG/L	11.4	11.2	12.0 J	9.61	11.8 J	9.70	19.6	23.0 J	35.5	63.8
Mercury	7439-97-6	MG/L	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000521 U	0.0000653 UJ	0.0000653 U	0.0000653 U	0.0000653 U	0.0000521 U
Molybdenum	7439-98-7	MG/L	0.00893	0.0124	0.0144	0.0156	0.0103	0.0193	0.0108	0.00801	0.000817 J	0.00227 J
Potassium	7440-09-7	MG/L	3.08	3.99	5.34	5.53	3.90	5.41	4.16	4.04 J	2.54	2.87
Selenium	7782-49-2	MG/L	0.00127 UJ	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.000348 U
Sodium	7440-23-5	MG/L	31.0	37.3	44.5 J	43.6	19.2 J	49.3	34.9	39.6 J	20.3 J	60.8
Thallium	7440-28-0	MG/L	0.000202 U*	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.000172 U*	0.0000360 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.351 U	0.470 U	0.204 U	0.368 UJ	0.206 J	0.244 U	0.454 U	0.372 U	0.426 U	1.54 J
Radium 228	15262-20-1	pCi/L	0.351 U	0.258 U	0.0813 U	0.0631 UJ	0.0944	0.0106 U	0.234 U	0.0674 U	0.426 U	1.07 U*
Radium-226	13982-63-3	pCi/L	-0.0950 U	0.212 U	0.123 U	0.305 U	0.111 U	0.233 U	0.220 U	0.304 U	0.00000 U	0.471 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-451C	GAF-451C	GAF-451C	GAF-451C	GAF-451C	GAF-451C	GAF-451C	GAF-451C	GAF-451C	GAF-452C
Sample Date			12/15/2016	1/13/2017	2/21/2017	3/21/2017	4/25/2017	5/23/2017	6/21/2017	7/19/2017	8/24/2017	11/16/2016
Well Location			Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID			GAF-GW-451C-12152016	GAF-GW-451C-01132017	GAF-GW-451C-02212017	GAF-GW-451C-03212017	GAF-GW-451C-04252017	GAF-GW-451C-05232017	GAF-GW-451C-06212017	GAF-GW-451C-07192017	GAF-GW-451C-08242017	GAF-GW-452C-11162016
Sample Type			N	N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	1.46	0.24	0.56	0.26	0.47	0.32	0.43	0.32	0.33	1.18
ORP	ORP	MV	-145.4	-249.3	-339.2	-96.9	-134.5	-92.2	-154.7	-59.4	-111.0	-217.5
pH, Field	PHFLD	pH units	6.99	6.97	6.77	6.75	6.83	6.8	6.73	6.85	6.72	7.25
Specific Conductance, Field	CONDSPECFLD	umhos/cm	1325	1557	1518	1519	1512	1528	1366	1447	1304	810
Temperature	TEMP	deg C	13.81	15.24	16.36	17.5	17.4	18.5	19.0	22.9	19.9	17.78
Turbidity, field	TURB-FIELD	NTU	0.96	0.55	1.48	0.5	0.28	0.65	0.30	1.63	0.21	3.32
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	542	540	543	545	574	564	580	498	569	504
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	542	540	543	545	574	564	580	498	569	504
Chloride	16887-00-6	MG/L	40.5	32.5	33.2	30.6	28.7	28.2	29.9	28.6	27.8	3.46
Fluoride	16984-48-8	MG/L	0.486	0.389	0.299	0.457	0.438	0.376	0.487	0.490	0.390	0.535
Sulfate	14808-79-8	MG/L	302	270	300	298	331	351	364	366	341	56.3
Total Dissolved Solids	TDS	MG/L	952	919	860	937	961	1040	1050	1030	999	433
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000417 U*	0.000443 U	0.00146 J	0.000443 U	0.000443 U	0.00137 U*	0.00173 U*	0.000556 U*	0.000561 U*	0.000307 U*
Arsenic	7440-38-2	MG/L	0.00166	0.000851 J	0.000775 J	0.000864 U*	0.000871 J	0.00168	0.00124	0.00109 U*	0.00188	0.00202
Barium	7440-39-3	MG/L	0.0484	0.0421	0.0365	0.0341	0.0343	0.0378	0.0366	0.0376	0.0371	0.224
Beryllium	7440-41-7	MG/L	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000102 U
Boron	7440-42-8	MG/L	0.0868	0.0639 J	0.0802	0.0630 J	0.0704 J	0.0593 J	0.0704 J	0.156	0.0700 U*	0.170
Cadmium	7440-43-9	MG/L	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.000152 U
Calcium	7440-70-2	MG/L	167	195	172	181	196	200	202	201	195 J	101
Chromium	7440-47-3	MG/L	0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000383 U*	0.000339 UJ
Cobalt	7440-48-4	MG/L	0.00113	0.000611 U*	0.000561 U*	0.000128 U*	0.0000947 U	0.000182 J	0.000121 J	0.000138 J	0.000178 J	0.0000780 U*
Lead	7439-92-1	MG/L	0.0000675 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.0000675 U
Lithium	7439-93-2	MG/L	0.00714	0.00868 U*	0.0107 U*	0.00756 U*	0.00748 U*	0.00736	0.00891 U*	0.00762	0.00792 U*	0.0724
Magnesium	7439-95-4	MG/L	55.9	65.3	58.8	61.3	71.9	67.8	68.9	71.6	70.4	34.7
Mercury	7439-97-6	MG/L	0.0000521 U	0.0000521 U	0.0000521 UJ	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000521 U
Molybdenum	7439-98-7	MG/L	0.000873 U	0.000593 U	0.000842 J	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000873 U
Potassium	7440-09-7	MG/L	2.35	2.58	2.27	2.34	2.91	3.62	3.26	2.87	2.87	5.38
Selenium	7782-49-2	MG/L	0.000348 U	0.00127 U	0.00127 U	0.00127 U	0.00127 UJ	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.000348 U
Sodium	7440-23-5	MG/L	30.7	24.7	22.4	21.9	24.0	26.4	26.5	26.1	25.7	48.0
Thallium	7440-28-0	MG/L	0.0000360 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000360 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.718 J	0.331 U	0.770 U	0.811 U	0.636 U	1.19 J	1.43 U	1.09 U*	1.20 U*	1.22 J
Radium 228	15262-20-1	pCi/L	0.486	-0.1190 U	0.249 U	0.386 U	0.449 U	1.08	1.01 U	0.825 U*	0.714 U*	0.566
Radium-226	13982-63-3	pCi/L	0.232 UJ	0.331 U	0.521 U	0.426 U	0.187 U	0.107 U	0.420 U	0.269 U	0.483 U	0.650 U



**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-452C	GAF-452C	GAF-452C	GAF-452C	GAF-452C	GAF-452C	GAF-452C	GAF-452C	GAF-452C	GAF-452L
Sample Date			12/14/2016	1/11/2017	2/20/2017	3/22/2017	4/26/2017	5/23/2017	6/19/2017	7/19/2017	8/23/2017	11/17/2016
Well Location			Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID			GAF-GW-452C-12142016	GAF-GW-452C-01112017	GAF-GW-452C-02202017	GAF-GW-452C-03222017	GAF-GW-452C-04262017	GAF-GW-452C-05232017	GAF-GW-452C-06192017	GAF-GW-452C-07192017	GAF-GW-452C-08232017	GAF-GW-452L-11172016
Sample Type			N	N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	0.39	0.59	0.95	0.58	0.32	0.45	0.38	0.38	0.43	4.95
ORP	ORP	MV	-144	-218.2	-148.1	-208.3	-195.6	-199.1	-176.7	-157.3	-188.9	-224.9
pH, Field	PHFLD	pH units	7.05	7.08	7.21	7.16	7.06	7.22	7.18	6.91	6.77	7.03
Specific Conductance, Field	CONDSPECFLD	umhos/cm	791	798	808	673	769	738	807	768	789	616
Temperature	TEMP	deg C	14.26	14.88	15.66	16.1	17.5	17.0	19.0	20.6	20.0	16.42
Turbidity, field	TURB-FIELD	NTU	0.32	0.2	0.25	0.34	0.80	0.36	1.14	0.51	0.43	0.92
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	461	514	487	509	514	484	530	508	482	368
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	461	514	487	509	514	484	530	508	482	368
Chloride	16887-00-6	MG/L	3.18	5.53	6.83	4.98	7.45	7.62	8.57	9.24	10.1	3.95
Fluoride	16984-48-8	MG/L	0.515	0.617 U*	0.567	0.630	0.744	0.681	0.827	0.810	0.691	0.426
Sulfate	14808-79-8	MG/L	51.4	47.1 J	52.2	56.2	51.1	50.4	53.0	53.3	49.0	33.0 U*
Total Dissolved Solids	TDS	MG/L	460	473	428	460	476	490	475	489	490	349
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000257 U*	0.000443 U	0.000443 U	0.000443 U	0.000638 U*	0.000443 U	0.000443 U	0.000546 U*	0.000443 U	0.000497 U*
Arsenic	7440-38-2	MG/L	0.00245	0.00296	0.00404	0.00317	0.00350	0.00348	0.00329 U*	0.00326	0.00325	0.000554 U*
Barium	7440-39-3	MG/L	0.203	0.207	0.201	0.205	0.215	0.215	0.210	0.224	0.206	0.0645
Beryllium	7440-41-7	MG/L	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000102 U
Boron	7440-42-8	MG/L	0.218	0.224	0.204	0.179 J	0.234	0.197	0.206	0.234	0.232	0.107
Cadmium	7440-43-9	MG/L	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.000152 U
Calcium	7440-70-2	MG/L	84.1	79.7	77.8	76.3	87.8	69.8	73.0	80.4	76.4	82.3
Chromium	7440-47-3	MG/L	0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	0.000354 U*
Cobalt	7440-48-4	MG/L	0.0000730 U*	0.0000947 U	0.0000947 U	0.0000947 U	0.0000947 U	0.0000947 U	0.0000947 U	0.0000947 U	0.0000947 U	0.000157 U*
Lead	7439-92-1	MG/L	0.0000675 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.00199 U*	0.0000675 U
Lithium	7439-93-2	MG/L	0.0689	0.0883	0.0684	0.0772	0.0770	0.0752	0.0749	0.0740	0.0699	0.0188
Magnesium	7439-95-4	MG/L	31.2	30.0	27.9	27.8	29.5	29.2	28.1	31.5	29.3	28.3
Mercury	7439-97-6	MG/L	0.0000521 U	0.0000521 U	0.0000521 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000521 U
Molybdenum	7439-98-7	MG/L	0.000873 U	0.000593 U	0.000601 U*	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000873 U
Potassium	7440-09-7	MG/L	5.01	4.83	4.75	4.84	5.13	5.07	5.33	5.84	5.40	3.67
Selenium	7782-49-2	MG/L	0.000369 U*	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.000348 U
Sodium	7440-23-5	MG/L	47.3	49.0	54.4	54.5	61.9	62.9	67.7	73.4	72.5	11.7
Thallium	7440-28-0	MG/L	0.0000360 U	0.0000531 U	0.000139 U*	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000360 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.519 U	1.79	1.32 J	0.848 U*	0.952 J	2.05	2.09	1.58 U*	1.35	0.371 U
Radium 228	15262-20-1	pCi/L	0.126 U	0.971	0.689 J	0.615 U*	0.230 U	1.24	1.08	1.31 U*	0.630	0.229 U
Radium-226	13982-63-3	pCi/L	0.393 U	0.815	0.629 U	0.233 U	0.723	0.810	1.01	0.270 U	0.722	0.142 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-452L	GAF-452L	GAF-452L	GAF-452L	GAF-452L	GAF-452L	GAF-452L	GAF-452L	GAF-452L	GAF-452L
Sample Date			12/14/2016	1/11/2017	2/20/2017	3/22/2017	4/25/2017	4/26/2017	5/23/2017	6/19/2017	7/19/2017	8/23/2017
Well Location			Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID			GAF-GW-452L-12142016	GAF-GW-452L-01112017	GAF-GW-452L-02202017	GAF-GW-452L-03222017	GAF-GW-452L-04252017	GAF-GW-452L-04262017	GAF-GW-452L-05232017	GAF-GW-452L-06192017	GAF-GW-452L-07192017	GAF-GW-452L-08232017
Sample Type			N	N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	0.45	0.63	0.74	0.26	0.43	NS	0.37	0.26	0.25	0.38
ORP	ORP	MV	-46.9	-72.2	-74.1	-43.7	-76.2	NS	-130.5	-128.6	-131.2	-175.8
pH, Field	PHFLD	pH units	7.07	7.11	7.18	7.2	7.09	NS	7.17	7.06	7.07	6.94
Specific Conductance, Field	CONDSPECFLD	umhos/cm	600	594	612	503.7	677	NS	570	608	568	554
Temperature	TEMP	deg C	14.8	14.63	16.87	15.8	17.5	NS	17.8	17.6	19.1	18.9
Turbidity, field	TURB-FIELD	NTU	0.48	0.4	0.39	0.36	0.44	NS	0.72	1.97	0.85	0.37
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	NS	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	374	369	398	416	NS	399	382	402	404	350
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	374	369	398	416	NS	399	382	402	404	350
Chloride	16887-00-6	MG/L	2.85	5.15	5.21	4.18	NS	5.38	5.60	5.99	6.06	5.83
Fluoride	16984-48-8	MG/L	0.359	0.346 U*	0.335	0.385	NS	0.418	0.397	0.477	0.471	0.397
Sulfate	14808-79-8	MG/L	28.2	27.4 J	35.4	32.5	NS	33.2	34.8	36.1	36.5	32.8
Total Dissolved Solids	TDS	MG/L	330	341	304	323	NS	340	357	351	347	372
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000326 U*	0.000457 U*	0.000502 U*	0.000443 U	0.00113 U*	NS	0.000443 U	0.000630 U*	0.000612 U*	0.000443 U
Arsenic	7440-38-2	MG/L	0.000648 U*	0.000874 J	0.000633 J	0.00106	0.00112	NS	0.00135 U*	0.00152 U*	0.00147	0.00153
Barium	7440-39-3	MG/L	0.0641	0.0647	0.0592	0.0686	0.0676	NS	0.0727	0.0677	0.0722	0.0681
Beryllium	7440-41-7	MG/L	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	NS	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	0.0990 J	0.105 U*	0.0874	0.0796 J	0.130 U*	NS	0.0916	0.0952	0.100	0.0977
Cadmium	7440-43-9	MG/L	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	NS	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	78.8	74.5	71.1	78.6	84.9	NS	72.8	70.8	81.2	81.5
Chromium	7440-47-3	MG/L	0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.000378 U	NS	0.000378 U	0.000378 U	0.000378 U	0.000378 U
Cobalt	7440-48-4	MG/L	0.000122 U*	0.000122 J	0.000232 U*	0.000177 J	0.000243 J	NS	0.000176 J	0.000205 J	0.000216 J	0.000259 U*
Lead	7439-92-1	MG/L	0.0000675 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	NS	0.000318 U	0.000318 U	0.000318 U	0.000318 U
Lithium	7439-93-2	MG/L	0.0185	0.0287 U*	0.0207 U*	0.0180 U*	0.0192	NS	0.0194	0.0173	0.0174	0.0168
Magnesium	7439-95-4	MG/L	27.6	26.8	24.4	26.3	29.0	NS	27.0	24.9	29.1	28.3
Mercury	7439-97-6	MG/L	0.0000521 U	0.0000521 U	0.0000521 U	0.0000653 U	0.0000653 U	NS	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 UJ
Molybdenum	7439-98-7	MG/L	0.000873 U	0.000593 U	0.000682 U*	0.000593 U	0.000790 J	NS	0.000946 J	0.000762 J	0.000658 J	0.000646 J
Potassium	7440-09-7	MG/L	3.44	3.25	3.18	3.41	3.88	NS	3.68	3.42	4.09	3.92
Selenium	7782-49-2	MG/L	0.000348 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	NS	0.00127 U	0.00127 U	0.00127 U	0.00127 UJ
Sodium	7440-23-5	MG/L	9.47	8.48	9.89	9.43	11.2	NS	11.9	11.2 J	13.6	13.1
Thallium	7440-28-0	MG/L	0.0000360 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	NS	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.342 U	0.201 U	0.538 UJ	0.549 U	0.160 U	NS	0.823 J	0.611 U	0.961 U*	0.850 U
Radium 228	15262-20-1	pCi/L	0.124 U	-0.0565 U	0.283 UJ	0.316 U	-0.0755 U	NS	0.823	0.558 U	0.892 U*	0.422 U
Radium-226	13982-63-3	pCi/L	0.218 U	0.201 U	0.255 U	0.233 U	0.160 U	NS	-0.1340 U	0.0537 U	0.0689 U	0.428 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-453C	GAF-453C	GAF-453C	GAF-453C	GAF-453C	GAF-453C	GAF-453C	GAF-453C	GAF-453C	GAF-453C
Sample Date			11/17/2016	12/13/2016	1/11/2017	2/21/2017	3/22/2017	4/26/2017	5/25/2017	6/21/2017	7/20/2017	8/24/2017
Well Location			Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID			GAF-GW-453C-11172016	GAF-GW-453C-12132016	GAF-GW-453C-01112017	GAF-GW-453C-02212017	GAF-GW-453C-03222017	GAF-GW-453C-04262017	GAF-GW-453C-05252017	GAF-GW-453C-06212017	GAF-GW-453C-07202017	GAF-GW-453C-08242017
Sample Type			N	N	N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L	1.26	1.05	0.43	0.53	0.24	0.54	0.51	1.25	1.26	1.00
ORP	ORP	MV	-186.0	-202.7	-150.1	-200.6	-143	-186.6	-184.3	-182.6	-79.1	-174.6
pH, Field	PHFLD	pH units	7.43	7.56	7.25	7.31	7.32	7.26	7.28	7.17	7.22	7.27
Specific Conductance, Field	CONDSPECFLD	umhos/cm	905	927	948	934	925	1020	1156	867	853	907
Temperature	TEMP	deg C	16.53	16.43	17.67	18.04	16.8	18.9	17.3	18.4	21.3	18.2
Turbidity, field	TURB-FIELD	NTU	3.23	1.22	1.19	0.93	0.6	0.60	1.12	0.96	1.73	0.62
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	378	386	371	392	398	445	378	366	365	398
Alkalinity, Bicarbonate (CaCO3)	ALKB	MG/L	378	386	371	392	398	445	378	366	365	398
Chloride	16887-00-6	MG/L	14.0	11.0 J	12.7	10.6	9.46	9.22	9.13	8.80	6.47	10.7
Fluoride	16984-48-8	MG/L	0.262	0.281	0.311 U*	0.203	0.299	0.309	0.283	0.344	0.242	0.308
Sulfate	14808-79-8	MG/L	160 U*	182	170 J	191	189	170	183	187	170	198
Total Dissolved Solids	TDS	MG/L	588	608	630	578	621	616	621	603	592	603
<b>Metals, Total</b>												
Antimony	7440-36-0	MG/L	0.000388 U*	0.000464 U*	0.000443 U	0.000443 U	0.000443 U	0.000759 U*	0.00113 U*	0.000670 U*	0.000758 U*	0.000689 U*
Arsenic	7440-38-2	MG/L	0.00429	0.00456	0.00643	0.00621	0.00771	0.00625	0.00570	0.00517	0.00565	0.00526
Barium	7440-39-3	MG/L	0.135	0.124	0.117	0.114	0.106	0.0985	0.100	0.0935	0.0971	0.0929
Beryllium	7440-41-7	MG/L	0.000102 U	0.000102 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U
Boron	7440-42-8	MG/L	0.0526 U*	0.0713	0.0903 U*	0.0754 J	0.0768 J	0.0893 U*	0.0704 J	0.0684 J	0.0579 J	0.0907 U*
Cadmium	7440-43-9	MG/L	0.000152 U	0.000152 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U	0.0000781 U
Calcium	7440-70-2	MG/L	111	103	108	106	111	114	118	120	125	111 J
Chromium	7440-47-3	MG/L	0.000339 U	0.000339 U	0.000378 U	0.000378 U	0.000378 U	0.00128 J	0.000378 U	0.000378 U	0.000378 U	0.000378 U
Cobalt	7440-48-4	MG/L	0.000187 U*	0.000163 U*	0.0000947 U	0.000106 U*	0.000111 J	0.0000947 U	0.000118 J	0.000107 J	0.0000947 U	0.000113 J
Lead	7439-92-1	MG/L	0.000103 J	0.0000675 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U	0.000318 U
Lithium	7439-93-2	MG/L	0.00540	0.00702 U*	0.0188 U*	0.00996 U*	0.0118 U*	0.00892 U*	0.00775	0.00746 U*	0.00765 U*	0.00897 U*
Magnesium	7439-95-4	MG/L	16.9	16.2	16.4	15.1	15.7	17.3	16.7	17.2	17.8	16.4
Mercury	7439-97-6	MG/L	0.0000521 U	0.0000521 U	0.0000521 U	0.0000521 UJ	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U	0.0000653 U
Molybdenum	7439-98-7	MG/L	0.00238 J	0.00113 J	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U	0.000593 U
Potassium	7440-09-7	MG/L	1.88	1.76	1.69	1.70	1.77	3.24	3.72	2.84	3.44	2.53
Selenium	7782-49-2	MG/L	0.000770 U*	0.000348 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U
Sodium	7440-23-5	MG/L	67.5	68.3	63.5	61.6	65.1	64.8	66.7	59.3	59.5	67.5
Thallium	7440-28-0	MG/L	0.0000360 U	0.0000360 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U	0.0000531 U
<b>Radiological</b>												
Radium 226 + Radium 228	RA226/228	pCi/L	0.870 J	0.760 J	0.246 U	0.250 U	0.516 U*	0.354 U	0.200 U	0.346 U	0.828 U*	1.07 U*
Radium 228	15262-20-1	pCi/L	0.134 U	0.226 U	0.246 U	-0.2090 U	0.509 U*	0.240 U	0.200 U	-0.9420 UR	0.828 U*	0.731 U*
Radium-226	13982-63-3	pCi/L	0.736	0.534	-0.0586 U	0.250 U	0.00672 U	0.114 U	-0.3470 U	0.346 U	-0.0576 U	0.339 U

**Table 4**  
**Baseline Sampling Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

**Notes and Acronyms**

deg C	- degrees Centigrade
FD	- field duplicate sample
MG/L	- milligrams per liter
MV	- millivolts
N	- primary sample
NA	- not applicable
NR	- not recorded
NS	- not sampled for the specified analysis or insufficient sample volume for analysis
NTU	- nephelometric turbidity units
pCi/L	- picoCuries per liter
umhos/cm	- microMhos per centimeter
UPL	- upper prediction limit

**Qualifier Definitions**

U*	This result should be considered "not detected" because it was detected in a rinsate blank or laboratory blank at a similar level.
R	Unreliable positive result; analyte may or may not be present in sample.
UR	Unreliable reporting or detection limit; analyte may or may not be present in sample.
J	Quantitation is approximate due to limitations identified during data validation.
UJ	This analyte was not detected, but the reporting or detection limit may or may not be higher due to a bias identified during data validation.

BASSELINNE

**Table 5**  
**Detection Monitoring Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			Background UPL - Carters Limestone	Background UPL - Lebanon Limestone	24	GAF-402C	GAF-402L	GAF-405C	GAF-406L	GAF-410U	GAF-412C	GAF-412L
Sample Date					10/3/2017	10/3/2017	10/3/2017	10/5/2017	10/5/2017	10/5/2017	10/3/2017	10/3/2017
Well Location Designation					Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Background	Background
Sample ID					GAF-GW-24-10032017	GAF-GW-402C-10032017	GAF-GW-402L-10032017	GAF-GW-405C-10052017	GAF-GW-406L-10052017	GAF-GW-410U-10052017	GAF-GW-412C-10032017	GAF-GW-412L-10032017
Sample Type					N	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	
<b>Field Parameter</b>												
Dissolved Oxygen	DO	MG/L			0.19	0.23	0.19	0.25	0.13	0.23	0.33	0.10
ORP	ORP	MV			79.3	-11.4	-64.1	31.0	40.8	-23.2	-89.2	-349.3
pH, Field	PHFLD	pH units	7.71	8.09	6.61	7.12	7.19	7.00	6.94	6.73	7.46	7.94
Specific Conductance, Field	CONDSPECFLD	umhos/cm			965	401.8	577	568	692	635	557	1315
Temperature	TEMP	deg C			16.9	18.2	17.6	18.8	17.0	18.5	16.7	16.6
Turbidity, field	TURB-FIELD	NTU			0.92	0.26	98.1	9.52	4.47	0.36	0.33	1.30
<b>General Chemistry</b>												
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L			5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L			496	231	344	354	309	346	523	356
Alkalinity,Bicarbonate (CaCO3)	ALKB	MG/L			496	231	344	354	309	346	523	356
Chloride	16887-00-6	MG/L	65.3	330	3.06 J	8.54	25.0	4.36	8.60	7.44	16.6	330 J
Fluoride	16984-48-8	MG/L	0.635	2.3	0.0298 U*	0.264 U*	0.250 U*	0.123	0.127	0.0917 J	0.178 U*	0.682 J
Sulfate	14808-79-8	MG/L	322	275	271 J	50.5	53.5	87.7	143	80.8	28.6	23.7 J
Total Dissolved Solids	TDS	MG/L	843	864	811	276	398	411	510	437	433	754
<b>Metals, Total</b>												
Boron	7440-42-8	MG/L	0.173	0.455	0.0728 J	<b>0.365</b>	0.290	0.118	0.366	<b>7.09</b>	0.0549 J	0.365
Calcium	7440-70-2	MG/L	147	154	<b>246</b>	76.6	90.7	118	138	105	132	76.3
Magnesium	7439-95-4	MG/L			10.3	6.08	23.3	9.90	9.71	5.93	21.7	43.9
Potassium	7440-09-7	MG/L			1.20	1.99	2.55	2.88	4.45	2.05	1.76	7.59
Sodium	7440-23-5	MG/L			1.22 U*	6.82	19.5	6.27	9.72	28.1	12.6	160

**Table 5**  
**Detection Monitoring Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-414L	GAF-416C	GAF-422C	GAF-422C	GAF-426C	GAF-426L	GAF-427C	GAF-427L	GAF-446C
Sample Date			10/3/2017	10/4/2017	10/3/2017	10/3/2017	10/4/2017	10/4/2017	10/5/2017	10/5/2017	10/5/2017
Well Location Designation			Background	Downgradient	Downgradient	Downgradient	Background	Background	Background	Background	Downgradient
Sample ID			GAF-GW-414L-10032017	GAF-GW-416C-10042017	GAF-GW-422C-10032017	GAF-GW-903A-10032017	GAF-GW-426C-10042017	GAF-GW-426L-10042017	GAF-GW-427C-10052017	GAF-GW-427L-10052017	GAF-GW-446C-10052017
Sample Type			N	N	N	FD	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>											
Dissolved Oxygen	DO	MG/L	0.43	0.37	0.20	NA	1.30	0.39	0.70	0.38	0.25
ORP	ORP	MV	-137.6	-110.4	-74.0	NA	58.7	-113.0	-76.8	-35.3	14.3
pH, Field	PHFLD	pH units	8.09	<b>8.08</b>	7.05	NA	7.53	7.67	7.71	7.40	6.68
Specific Conductance, Field	CONDSPECFLD	umhos/cm	1218	319.6	566	NA	1008	902	592	568	766
Temperature	TEMP	deg C	17.0	19.7	18.1	NA	17.5	17.8	17.0	16.1	18.0
Turbidity, field	TURB-FIELD	NTU	0.33	7.91	2.61	NA	1.30	1.45	1.58	1.08	0.40
<b>General Chemistry</b>											
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	377	237	241	214	499	447	414	391	371
Alkalinity,Bicarbonate (CaCO3)	ALKB	MG/L	377	237	241	214	499	447	414	391	371
Chloride	16887-00-6	MG/L	311 J	10.6	8.69 J	7.92 J	32.9	48.8	7.73	17.9	9.14
Fluoride	16984-48-8	MG/L	0.408 J	0.186 U*	0.266 U*	0.259 U*	0.224 U*	0.256 U*	0.442	0.253	0.0566 J
Sulfate	14808-79-8	MG/L	28.5 J	16.2	143 J	144 J	225	93.4	34.5	41.3	138
Total Dissolved Solids	TDS	MG/L	793	206	421	407	747	574	385	378	549
<b>Metals, Total</b>											
Boron	7440-42-8	MG/L	0.221	<b>0.523</b>	<b>0.473</b>	<b>0.449</b>	0.0590 J	0.0566 J	0.140	0.0740 J	<b>6.01</b>
Calcium	7440-70-2	MG/L	104	54.9	121	120	144	125	93.8	91.6	126
Magnesium	7439-95-4	MG/L	44.9	4.86	7.89	7.77	59.0	27.1	27.3	27.7	7.62
Potassium	7440-09-7	MG/L	3.35	3.70	2.35	2.32	3.18	13.0	10.1	1.60	2.76
Sodium	7440-23-5	MG/L	112	9.28	7.17	7.23	17.8	39.3	7.36	11.1	40.2

**Table 5**  
**Detection Monitoring Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Monitoring Well ID			GAF-446C	GAF-449L	GAF-450C	GAF-450L	GAF-451C	GAF-452C	GAF-452L	GAF-453C
Sample Date			10/5/2017	10/4/2017	10/4/2017	10/4/2017	10/5/2017	10/4/2017	10/5/2017	10/5/2017
Well Location Designation			Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient	Downgradient
Sample ID			GAF-GW-903A-10052017	GAF-GW-449L-10042017	GAF-GW-450C-10042017	GAF-GW-450L-10042017	GAF-GW-451C-10052017	GAF-GW-452C-10042017	GAF-GW-452L-10052017	GAF-GW-453C-10052017
Sample Type			FD	N	N	N	N	N	N	N
Analyte	CASNO	Units	Result	Result	Result	Result	Result	Result	Result	Result
<b>Field Parameter</b>										
Dissolved Oxygen	DO	MG/L	NA	0.23	0.25	0.20	0.40	0.37	0.42	0.90
ORP	ORP	MV	NA	37.5	-35.6	-49.8	-97.3	-187.2	-126.4	-182.91
pH, Field	PHFLD	pH units	NA	6.78	6.76	6.83	6.82	6.98	6.97	7.32
Specific Conductance, Field	CONDSPECFLD	umhos/cm	NA	607	946	947	1166	743	531.4	812
Temperature	TEMP	deg C	NA	19.2	18.0	18.9	22.1	18.4	18.9	18.2
Turbidity, field	TURB-FIELD	NTU	NA	0.30	4.71	1.83	0.23	0.57	0.26	1.70
<b>General Chemistry</b>										
Alkalinity, Carbonate (CaCO3)	ALKC	MG/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Alkalinity, Total as CaCO3	ALK	MG/L	393	239	325	338	564	525	373	387
Alkalinity,Bicarbonate (CaCO3)	ALKB	MG/L	393	239	325	338	564	525	373	387
Chloride	16887-00-6	MG/L	9.08	9.29	13.3	13.6	34.6	12.0	6.66	10.3
Fluoride	16984-48-8	MG/L	0.0561 J	0.0614 U*	0.0846 U*	0.123 U*	0.300	0.564	0.325	0.253
Sulfate	14808-79-8	MG/L	133	170	<b>361</b>	<b>332</b>	248	56.0	30.3	144
Total Dissolved Solids	TDS	MG/L	553	482	797	783	<b>949</b>	506	341	586
<b>Metals, Total</b>										
Boron	7440-42-8	MG/L	<b>6.11</b>	<b>12.1</b>	<b>6.50</b>	<b>7.95</b>	0.0605 J	<b>0.247</b>	0.0983	0.0913
Calcium	7440-70-2	MG/L	129	98.8	<b>185</b>	<b>170</b>	<b>183</b>	77.8	79.0	111
Magnesium	7439-95-4	MG/L	7.75	3.79	10.5	10.9	65.9	30.3	28.4	17.1
Potassium	7440-09-7	MG/L	2.84	3.18	4.14	5.32	2.46	6.07	3.97	2.27
Sodium	7440-23-5	MG/L	41.7	37.4	37.8	45.8	20.4	82.6	10.6	62.5

**Table 5**  
**Detection Monitoring Groundwater Analytical Results - Ash Pond Complex**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

**Notes and Acronyms**

**Bold** and **Underlined** concentrations indicate a Statistically Significant Increase (SSI) over the Background Upper Prediction Limit (UPL)

Gray-shaded wells are background wells

FD	- field duplicate sample
MG/L	- milligrams per liter
MV	- millivolts
N	- primary sample
NA	- not applicable
NS	- not sampled for the specified analysis or insufficient sample volume for analysis
NTU	- nephelometric turbidity units
pCi/L	- picoCuries per liter
umhos/cm	- microMhos per centimeter
UPL	- upper prediction limit

**Qualifier Definitions**

U*	This result should be considered "not detected" because it was detected in a rinsate blank or laboratory blank at a similar level.
J	Quantitation is approximate due to limitations identified during data validation.



## Appendix A Dye Trace Velocity Table

**Table 3**  
**Phase 1 Dye Trace Summary**  
**TVA Gallatin Fossil Plant**

Injection Point	Injection Date	Dye	Dye Recovery Location	Dye Recovery Confidence Level	Detection Date	Number Of Detections	Previous Non-detect Sample Date	Straight-line Distance (ft)	Travel Time - Low (days)	Travel Time - High (days)	Apparent Velocity Low (ft/day)	Apparent Velocity High (ft/day)
A0-SH-3	4/11/2017 17:55	Rhodamine WT (3 gallons)	DS-31-1	HIGH	4/12/17 7:30	1	NA	1,311	NA	0.6	2,316	NA
			DS-32-1	HIGH	4/12/2017 7:30	2	NA	1,540	NA	0.6	2,721	NA
			DS-26-3	HIGH	4/14/2017 13:50	1	NA	9,134	NA	2.8	3,228	NA
			DS-26-6	HIGH	4/14/2017 13:50	1	NA	9,134	NA	2.8	3,228	NA
C1-SH-15	4/12/17 7:50	Fluorescein (2 gallons)	DS-1	HIGH	4/20/17 8:40	2	4/14/17 9:40	11,657	8.03	2.1	1,451	5,614
			DS-2	HIGH	4/20/17 8:50	1	4/14/17 9:55	8,147	8.04	2.1	1,013	3,904
			DS-7	HIGH	4/20/17 9:00	1	4/14/17 10:05	6,747	8.05	2.1	838	3,222
			DS-3	HIGH	4/20/17 9:10	2	4/14/17 10:30	6,217	8.06	2.1	772	2,945
			DS-4	HIGH	4/20/17 9:15	2	4/14/17 10:25	6,077	8.06	2.1	754	2,883
			DS-6	HIGH	4/20/17 9:25	2	4/14/17 10:20	6,247	8.07	2.1	774	2,969
			DS-8	HIGH	4/20/17 9:30	2	4/14/17 10:05	5,547	8.07	2.1	687	2,649
			DS-9	HIGH	5/17/17 11:45	1	5/9/17 13:30	5,552	35.16	27.2	158	204
			GAF-414C	HIGH	4/24/2017 13:15	8	4/14/2017 13:18	420	12.23	2.2	34	189
			GAF-415C	HIGH	4/24/2017 12:35	1	4/14/2017 15:45	1,320	12.20	2.3	108	567
			GAF-421L	HIGH	4/24/2017 13:15	11	4/14/2017 16:15	3,020	12.23	2.4	247	1,285
			GAF-419L	HIGH	5/22/2017 9:45	2	5/15/2017 10:05	3,520	40.08	33.1	88	106
			GAF-428L	LOW	5/22/17 11:15	1	5/15/17 11:55	5,150	40.14	33.2	128	155
			D2-CV-1	HIGH	5/31/17 8:15	5	5/22/17 9:45	3,690	49.02	40.1	75	92
GAF-416C	LOW	6/28/17 9:10	1	6/14/17 10:25	1,625	77.06	63.1	21	26			
GAF-407L	LOW	6/28/17 16:10	1	6/15/17 10:30	2,173	77.35	64.1	28	34			
D2-SH-22	4/19/17 10:00	Eosine (2 gallons)	D2-CV-1	HIGH	4/24/17 11:20	7	4/19/17 13:55	230	5.06	0.2	45	1,409
			GAF-23	LOW	5/31/17 16:15	1	5/22/17 11:55	1,960	42.26	33.1	46	59
			DS-16-6	LOW	6/28/17 10:15	1	6/21/17 10:10	6,640	70.01	63.0	95	105
GAF-405C	5/12/17 8:55	Sulphorhodamine B (2 gallons)	Dye Not Recovered as of 7/6/17	NA	NA	NA	NA	NA	NA	NA	NA	
GAF-459C	5/10/17 9:40	Pyranine (2 gallons)	GAF-410U	HIGH	5/15/2017 12:20	7	5/8/2017 13:50	1,120	5.11	NA	219	NA
			GAF-446C	HIGH	5/22/2017 12:05	6	5/15/2017 12:30	1,160	12.10	5.1	96	227
			GAF-458C	HIGH	6/21/2017 12:00	2	6/14/2017 11:50	1,100	42.10	35.1	26	31
GAF-456C	5/23/17 8:55	Phloxine B (8 pounds)	Dye Not Recovered as of 7/6/17	NA	NA	NA	NA	NA	NA	NA	NA	

**Table Source:**  
Hydrogeology Inc, September 2017. *TVA Gallatin Phase Zero/Phase 1 Dye Trace Study*,  
Table 3, Prepared for AECOM

AECOM is built to deliver a better world. We design, build, finance, and operate infrastructure assets for governments, businesses, and organizations in more than 150 countries. As a fully integrated firm, we connect knowledge and experience across our global network of experts to help clients solve their most complex challenges. From high-performance buildings and infrastructure, to resilient communities and environments, to stable and secure nations, our work is transformative, differentiated and vital. A Fortune 500 firm, AECOM had revenue of approximately \$17.4 billion during fiscal year 2016. See how we deliver what others can only imagine at [aecom.com](http://aecom.com) and [@AECOM](https://twitter.com/AECOM).

AECOM  
1600 Perimeter Park  
Morrisville, NC 27560  
T: 919.461.1100  
[aecom.com](http://aecom.com)