

Date: December 18, 2024

To: Tennessee Valley Authority

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Subject: Statistically Significant Levels (SSLs), September 2024 Assessment
Monitoring
CCR Rule Groundwater Monitoring
Gallatin Fossil Plant, Ash Pond Complex

In accordance with federal regulations for management of coal combustion residuals (the CCR Rule; 40 CFR 257), the Tennessee Valley Authority (TVA) is monitoring groundwater at the Ash Pond Complex at its Gallatin Fossil Plant (GAF) in Gallatin, Tennessee. The Ash Pond Complex consists of four surface impoundments subject to the CCR Rule: Ash Pond A, Ash Pond E, Middle Pond A, and the Bottom Ash Pond. All four impoundments are monitored together under a multi-unit monitoring system. The Ash Pond Complex is currently in the Assessment phase of monitoring.

The second semi-annual Assessment monitoring event of 2024 at the Ash Pond Complex took place in September 2024. Pursuant to 40 CFR 257.95(g), this memorandum serves as notification to identify the constituents in Appendix IV that have statistically significant levels (SSLs) above groundwater protection standards (GWPSs; see **Table 1**). SSLs were identified using the certified statistical methods.

The identified SSLs above GWPSs based on the certified statistical methods are presented on **Table 1**. Most of the SSLs have been previously reported; however, one new SSL was identified for arsenic at GAF-402M. GAF-402M is a well newly added to the certified monitoring network in 2024.

An Alternate Source Demonstration has been completed for the cobalt SSL at GAF-450L, as described in the 2019 Annual Report.

**Table 1: Statistically Significant Levels (SSLs) Above GWPSs, September 2024
GAF Ash Pond Complex**

Appendix IV Parameter	GWPS (a)	Downgradient wells with results above GWPSs (b)	Statistically significant trend (c)	Calculated LCL on the mean (d)	SSL (e)
Antimony (ug/l)	6	None	NA	NA	NA
Arsenic (ug/l)	10	GAF-402C	Yes (c)	NA	No
		GAF-402M	Yes (c)	NA	Yes
		GAF-410U	Yes (c)	NA	Yes
		GAF-422C	No	4.40 (d)	No
		GAF-450L	Yes (c)	NA	Yes
Barium (ug/l)	2,000	None	NA	NA	NA
Beryllium (ug/l)	4	None	NA	NA	NA
Cadmium (ug/l)	5	None	NA	NA	NA
Chromium (ug/l)	100	None	NA	NA	NA
Cobalt (ug/l)	6	GAF-422C	No	3.99 (d)	No
		GAF-433L	No	3.35 (d)	No
		GAF-450L	No	7.70 (d)	Yes (f)
Fluoride (mg/l)	4	None	NA	NA	NA
Lead (ug/l)	15	None	NA	NA	NA
Lithium (ug/l)	224	None	NA	NA	NA
Mercury (ug/l)	2	None	NA	NA	NA
Molybdenum (ug/l)	100	None	NA	NA	NA
Radium-226+228 (pCi/l)	5	None	NA	NA	NA
Selenium (ug/l)	50	None	NA	NA	NA
Thallium (ug/l)	2	None	NA	NA	NA

NA – Not applicable

(a) GWPSs documented in notice dated 12/20/2022.

(b) Assessment monitoring event in September 2024.

(c) As described in the statistical method certification, if a statistically significant trend is present, a confidence band approach is used to identify SSLs. Because the confidence band method is graphical, for datasets with statistically significant trends, the graphs showing the data and confidence bands are attached.

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(d) As described in the statistical method certification, if no statistically significant trend is identified, an SSL is identified when both the upper and lower confidence limits (UCL and LCL) on the mean of all sampling events (i.e., November 2016 through September 2024) are above the GWPS. UCL not shown as it is greater than LCL. UCLs and LCLs are determined through statistical calculations rather than using a graphical method.

(e) SSL is statistically significant level over GWPS.

(f) Alternate Source Demonstration completed, see 2019 Annual Report.



