

Memo

Date: Wednesday, May 01, 2024

Project: Former J.B. Sims Generating Station
Harbor Island

To: Derek Gajdos, City of Grand Haven

From: Lara Zawaideh, P.E., HDR Michigan, Inc.

Subject: Former J.B. Sims Generating Station
Determination of Statistically Significant Levels over Groundwater Protection Standards per 40 CFR §257.95(g) and Michigan Part 115 Rule R 299.4441.

The U.S. Environmental Protection Agency's (EPA's) final Coal Combustion Residuals (CCR) Rule and Michigan Part 115 establish a comprehensive set of requirements for the management and disposal of CCR (or coal ash) in landfills and surface impoundments by electric utilities. The objective of this memorandum is to document the identification of additional constituents of interest (COI) in groundwater from assessment monitoring that were present at statistically significant levels (SSLs) over the updated groundwater protection standards (GPS) for both the Federal and State compliance monitoring programs.

Facility Description

The former J.B. Sims Generating Station (facility or Site) was a coal-fired power generation facility operated by Grand Haven Board of Light & Power (GHBLP) that ceased operations in February 2020. The Site is located at 1231 North 3rd Street, on Harbor Island, in Grand Haven, Michigan. The CCR generated at the former generating station was stored in two CCR units that are subject to the CCR Rule and Part 115: (1) the inactive Units 1/2 Impoundment and (2) the Unit 3A/B Impoundments. The Units 1/2 Impoundment was a depression in the ground where sluiced ash was disposed which ceased receiving CCR material in 2012. The Unit 3A/B Impoundments were clay-lined, above-ground units that ceased receiving CCR material in July 2020. Excavation of CCR material from Unit 3A/B Impoundments for physical closure was conducted in December 2020.

Assessment monitoring is performed quarterly at both units in February, April, July, and October each year. Following the initial assessment monitoring event with the updated monitoring network in October 2023, SSLs were identified and documented in the *Former J.B. Sims Generating Station Determination of Statistically Significant Levels over Groundwater Protection Standards per §257.95(g) and Michigan Rule R 299.4441* (HDR, 2024b).

Assessment monitoring was performed in February 2024 and, following sampling and analysis, downgradient well concentrations were statistically evaluated to determine if constituents were detected at SSLs above the GPS. To determine if an exceedance of a GPS value was statistically significant, the 95% lower confidence limit (95LCL) was calculated for each of the downgradient wells for each CCR unit and compared to the GPS.

Units 1/2 Impoundment

The 95LCL values for the monitoring wells of the Units 1/2 Impoundment were compared to GPS and no new SSLs were detected for the State or Federal compliance programs. The monitoring wells and COIs that exceeded GPS at SSLs were consistent with the October 2023 results.

Unit 3A/B Impoundments

Following the February 2024 sample event, the 95LCL values for the monitoring wells of the Unit 3A/B Impoundments were compared to GPS. As a result, new SSLs were detected at monitoring wells MW-01R and MW-09 for sulfate over the State compliance program GPS. Prior monitoring events had SSLs for other COIs in these wells, and other wells had SSLs of sulfate over GPS. Only the newly identified SSLs for the Unit 3A/B Impoundments are provided in **Table 1**. There are no new SSLs for the Federal compliance program. The total list of monitoring wells and constituents at SSLs that exceeded Federal and State GPS values are provided in **Table 2**.

Table 1. February 2024 95LCLs for Constituents that Exceed State GPS for Unit 3A/B Impoundments		
Monitoring Well	Assessment Monitoring COI	Sulfate
	Unit	mg/L
	State GPS	250
MW-01R	95LCL	300
MW-09	95LCL	260

Table 2. Detected SSLs at the Former J.B. Sims Generating Station through February 2024		
Monitoring Wells	Constituents with concentrations at SSLs over Federal GPS	Constituents with concentrations at SSLs over State GPS
Units 1/2 Impoundment		
MW-06	Lithium	Boron, Lithium, TDS
MW-07	--	Boron
MW-08	Arsenic	Arsenic, Boron
MW-10	Fluoride, Lithium	Boron, Chloride, Fluoride, Lithium, Sulfate, TDS
MW-18	Arsenic	Arsenic, Calcium, Fluoride, Sulfate, TDS
MW-19	--	Calcium, Sulfate, TDS
MW-30	Lithium	Calcium, Lithium, Sulfate, TDS
MW-31	Fluoride	Boron, Fluoride
MW-32	Lithium	Lithium
Unit 3A/B Impoundments		
MW-01R	Fluoride, Lithium	Boron, Fluoride, Lithium, Sulfate, TDS
MW-02	Fluoride, Lithium	Boron, Chloride, Fluoride, Lithium, TDS
MW-03	--	Calcium, Chloride, Sulfate, TDS
MW-04	--	Calcium, Chloride, Sulfate, TDS
MW-09	Lithium	Boron, Calcium, Fluoride, Lithium, Sulfate, TDS
MW-10	Fluoride, Lithium	Boron, Chloride, Fluoride, Lithium, Sulfate, TDS

*"--" Indicates no COI was found to exceed the respective GPS values

References

HDR, 2024a. Background Water Quality Statistical Certification. December 11, 2023. Revised January 10, 2024.

HDR, 2024b. Former J.B. Sims Generating Station Determination of Statistically Significant Levels over Groundwater Protection Standards per §257.95(g) and Michigan Rule R 299.4441. February 5, 2024. Revised March 11, 2024.