



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
GRAND RAPIDS DISTRICT OFFICE



LIESL EICHLER CLARK
DIRECTOR

January 28, 2021

VIA EMAIL AND U.S. MAIL

Mr. Dave Walters
Grand Haven Board of Light and Power
1700 Eaton Drive
Grand Haven, MI 49417

Dear Mr. Walters:

Subject: JB SIMS Unit 3 Impoundments Alternate Source Demonstration Denial

The Michigan Department of Environment Great Lakes and Energy (EGLE) received the report, "Alternate Source Demonstration JB Sims Generating Station – Unit 3 Impoundments". EGLE reviewed the report and determined the Alternate Source Demonstration (ASD) is incomplete. EGLE denies the ASD request given the below deficiencies:

Grand Haven Board of Light and Power (GHBLP) submitted a Unit 3 impoundment ASD on December 28, 2020, stating that the groundwater impact immediately adjacent to Unit 3A/3B is from another source. Michigan Admin Code, R 299.4440(9) governs requests for ASD and states:

The owner and operator may demonstrate to the director that a source other than a landfill unit caused the contamination or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation or from natural variation in groundwater quality. A report that documents the demonstration shall be certified by a qualified groundwater scientist, be submitted to the director within 30 days of the determination specified in subrule (8) of this rule, and be placed in the operating record. If the director determines that the alternate source demonstration prepared pursuant to this subrule has not been successfully provided, the deficiencies shall be specified to the petitioner in writing and the petitioner granted 15 days to address those deficiencies identified by the director.

Rule 299.4440(8), referenced by Rule 299.4440(9), in turn relates to when an owner or operator determines "that there is a statistically significant increase over background for one or more of the constituents at any monitoring well at the solid waste boundary or at other monitoring locations required by the director." GHBLP indicated statistical exceedances above groundwater protection standards in its 2018 annual groundwater monitoring report submitted January 2019. A timely ASD would have been submitted no later than March of 2019, and thus this ASD submittal is well beyond the 30-day deadline as required by R 299.4440.

Although the ASD was submitted almost two years past its required submittal date, EGLE will comment on the information provided in the ASD.

Identified Deficiencies:

1. EGLE previously notified GHBLP that their groundwater monitoring network around Unit 3A/3B is inadequate to properly monitor groundwater downgradient of the unit. Since the addition of new groundwater monitoring points, a more consistent flow pattern appears to be emerging. Michigan coal ash rules require the number, spacing and depths of monitoring wells shall be based upon site specific information including seasonal and temporal fluctuations in groundwater flow (R 299.4906 (7)).

GHBLP does not meet this requirement as the ASD groundwater flow maps show there are no downgradient monitoring wells of Unit 3A/3B. GHBLP is therefore unable to assess if groundwater has been impacted from the units and has not properly assessed downgradient groundwater conditions to be able to submit an ASD.

2. GHBLP utilizes trend charts as a line of evidence to determine if the units have caused groundwater impact. EGLE recognizes that Units 3A/3B have been actively accepting wastes since the early 80s and provides the following comments:
 - a. GHBLP states that if Unit 3 was the source of groundwater impact, then closure of the units should produce decreasing trends in the groundwater. EGLE does not disagree with this statement, however GHBLP ceased accepting waste into Unit 3A/3B on July 30, 2020 and has had only one sampling event on September 25, 2020 after the units ceased waste acceptance. Furthermore, GHBLP photologs show coal ash wastes being removed well into October 2020. Using trend charts as an ASD is inappropriate in this circumstance because there has not been enough time, post waste removal, to monitor potential groundwater quality improvement.
 - b. Unit 3A/3B's National Pollutant Discharge Elimination System (NPDES) Discharge Monitoring Report (DMR) indicates a daily fluctuating discharge and likely fluctuating hydraulic loading within the impoundments. The inconsistent hydraulic loading of the ponds can produce inconsistent analytical trends in the groundwater, therefore rendering analytical trends unreliable when used to track groundwater quality.
3. GHBLP compared major cations and ions from the source area and the surrounding groundwater near the source. GHBLP states that Unit 3A/3B have not leaked because the concentrations of major cations and ions in the groundwater are not like the wastewater contained within the impoundments and that data does not plot on a mixing line. EGLE does not agree that this is an appropriate method for determining alternate sources at the site for the following reasons:
 - a. GHBLP uses groundwater, surface water and wastewater data spanning a 4-year period. Major cation and ion data should be compared from the same sample monitoring points collected during the same sampling events as source signatures can change over time.

- b. GHBLP has only collected one data point from Unit 3A/3B in 2017. The units were actively used since the early 80s disposing of coal ash wastes along with other waste streams including but not limited to Grand River chlorinated water, scrubber sump discharge, demineralizer water and coal pile runoff stormwater. It is likely that major cations and ions have changed over time, dependent on which and how much of a given waste stream is added into the impoundments during a given day/month. Using one single data point to characterize the Unit 3A/3B wastewater is not sufficient.
 - c. The Unit 3A/3B wastewater may geochemically change due to differing pH levels and reactions occurring during migration through substrate. Based on site conditions at Unit 3A/3B, it is not appropriate to compare geochemical signatures from the source as the signature could change as the wastewater migrates into and reacts with the groundwater.
4. GHBLP appears to be selectively choosing data to include in the ASD. Boron, Calcium, Chloride, Chromium, Cobalt, Fluoride, Lead, Lithium, Total Dissolved Solids all are statistically significant according to the report. GHBLP selectively chooses Chromium, Cobalt, Fluoride, Lead and Lithium as not from Unit 3, but does not address Boron, Calcium, Chloride and TDS which are also statistically significant.
5. GHBLP does not provide any information on the alternate source. GHBLP states the source is historic island fill yet does not characterize that potential source to support that determination.

EGLE also notes the following information that suggests the unit may have leaked during operation:

1. GHBLP observed that during closure, the unit appeared to be visually intact and therefore GHBLP has claimed the unit has not leaked during its lifetime. GHBLP appears to discount natural migration of liquid through an engineered clay barrier. EGLE used available information to calculate an estimated time of breakthrough. EGLE considered the site conditions and assumed the liner was a monolithic intact liner as a best-case scenario. Even with a best-case scenario, EGLE calculated that natural breakthrough of the clay liner could be as soon as 15-25 years. The units have been active since the early 80s. EGLE therefore believes it is not appropriate to assume that the unit has not leaked during its lifetime based on visual inspection alone.
2. Many photographs taken by GHBLP show cracking and discontinuity in the engineered clay liner indicating that it is not a monolithic engineered barrier. Cracking and discontinuities in the clay provides preferential pathways for liquid to penetrate through the liner allowing coal ash contaminants into groundwater.

This letter details the state law requirements under Part 115 with which GHBLP must comply for Unit 3A/3B. Compliance with state law does not obviate the obligation that GHBLP comply with federal law, including the United States Environmental Protection Agency's coal combustion residuals program and its closure requirements.

Mr. Dave Walters
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If GHBLP would like to discuss any of the above information, please contact Kent Walters by email at waltersk7@michigan.gov or by telephone at 616-278-4350

Sincerely,



Kent A. Walters, Geologist
Materials Management Division
Grand Rapids District Office
Department of Environment, Great Lakes
and Energy

cc: Mr. Erik Booth, GHBLP
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