



State of Ohio Environmental Protection Agency

Northwest District Office

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Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

Re: GMPT Landfill, Defiance County
Ground Water

February 4, 2009

Mr. Chuck Renn
Environmental Engineering
General Motors Powertrain
P. O. Box 70
Defiance, Ohio 43512-0070

Dear Mr. Renn:

On January 13, 2009, the Ohio Environmental Protection Agency (Ohio EPA), Division of Solid and Infectious Waste Management (DSIWM), Northwest District Office (NWDO) received the report (dated January 2009) documenting the statistical evaluation of ground water monitoring data for the October 27-31 and November 3, 2008 annual sampling event at the General Motors Powertrain Landfill (GMPT-Defiance) in Defiance County. The report was reviewed to determine compliance with Ohio Administrative Code (OAC) Rule 3745-30-08.

COMMENTS

Violations

1. **As previously stated in the September 26, and October 16, 2008 letters from Ohio EPA, GMPT-Defiance continues to be in violation of OAC Rule 3745-30-08(B)(3)(e) regarding the operation and maintenance of MW-11DR. To return to compliance with this rule, MW-11DR must be properly abandoned.**

OAC Rule 3745-30-08(B)(3)(e) requires that *"The monitoring wells...shall be operated and maintained to perform to design specifications throughout the life of the ground water monitoring program."*

Regarding MW-11DR, the August 19, 2008 letter from GMPT-Defiance stated *"GMPT-Defiance agrees that there is grout contamination that will correct itself in time when there is sufficient production to flush out the affected screened area."* Regardless of whether or not the grout contamination will correct itself in time (it may or may not), MW-11DR is not being operated and maintained to perform to design specifications. Therefore, the requirements of OAC Rule 3745-30-08(B)(3)(e) are not being met for MW-11DR.

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MW-11DR has now been purged and sampled on five occasions during April, June, July, September and November, 2008. During each of these sampling events, pH readings at MW-11DR have been very high, which are a strong indication of grout contamination. As an example, the pH readings at MW-11DR during the most recent sampling event (November 3, 2008) started at 11.00 S.U. at the beginning of purging and only fell to 10.26 S.U. at the termination of purging. These elevated pH readings continue to indicate grout contamination at MW-11DR.

GM-Defiance has agreed that MW-11DR has grout contamination (August 19, 2008 letter from GM-Defiance).

Additionally, for the November 3, 2008 sampling event, the concentration of zinc at MW-11DR was 1,700 µg/L. This concentration is far above the previous concentrations observed at MW-11DR (6 and 6.1 µg/L) and is by far the highest concentration ever observed on-site (previous high concentration was 55 µg/L at MW-11D in April 2007 – which was considered questionable). This extremely high zinc concentration at MW-11DR raises further concern as to the capability of MW-11DR to provide representative ground water samples.

Owner/Operator's Response to Previously Cited Violations

2. **As stated most recently in the September 26, 2008 letter from Ohio EPA, GM-Defiance had been in violation of OAC Rule 3745-30-08(C)(6)(f) and (C)(5) regarding procedures for statistically analyzing the ground water quality data for iron. However, as detailed below, GM-Defiance has regained compliance with these rules regarding the statistical analysis of iron data at the facility.**

OAC Rule 3745-30-08(C)(6)(f) requires that the statistical method, if necessary, include procedures to control or correct for spatial variability in the data. OAC Rule 3745-30-08(C)(5) requires that the statistical method ensure protection of human health and safety and the environment and comply with the performance standards in OAC Rule 3745-30-08(C)(6).

Beginning with the October 2008 sampling event, GM-Defiance switched to intra-well statistical analysis of the iron data at the facility. This change to intra-well statistics for iron data corrects for (by negating) spatial variability, as all data is compared to previous data within the same well. Therefore, this intra-well statistical analysis of iron data at the facility meets the requirements of OAC Rule 3745-30-08(C)(6)(f) for controlling or correcting for spatial variability in the data.

Hence, the requirements of OAC Rule 3745-30-08(C)(6) are also being met for this instance.

More Information Needed to Determine Compliance

- 3. More information is needed to determine compliance with OAC Rules 3745-30-08(C)(6)(f) and (C)(5) regarding procedures for statistically analyzing the ground water quality data for sulfate and TDS. To allow for an evaluation of compliance with these rules, the owner/operator must perform spatial variability analysis on the sulfate and TDS data from the facility as detailed below and submit the results to Ohio EPA.**

OAC Rule 3745-30-08(C)(6)(f) requires that the statistical method, if necessary, include procedures to control or correct for spatial variability in the data. OAC Rule 3745-30-08(C)(5) requires that the statistical method ensure protection of human health and safety and the environment and comply with the performance standards in OAC Rule 3745-30-08(C)(6).

Ohio EPA and GM-Defiance have been discussing this issue for some time (most notably for iron, but also for sulfate and TDS – as noted in the February 14, 2008 letter from Ohio EPA). The March 19, 2008 letter from GM-Defiance stated *"Similar to iron, the upgradient wells have also exhibited a high degree of spatial variability with respect to sulfate and TDS concentrations."*

Considering the requirements for appropriate inter-well statistical analysis, Ohio EPA is not so much concerned with the spatial variability between upgradient wells, but rather with the spatial variability between the downgradient wells and the statistical background that is collected from upgradient wells.

Therefore, to allow for an evaluation of compliance with OAC Rules 3745-30-08(C)(6)(f) and (C)(5), GM-Defiance needs to perform spatial variability analysis of the sulfate and TDS data (comparing downgradient data to upgradient background) and submit the results to Ohio EPA.

†

Statements

- 4. The concentrations of ammonia and barium at MW-15D continue to be generally elevated. The owner/operator needs to closely monitor these constituent concentrations at MW-15D in future sampling events.**

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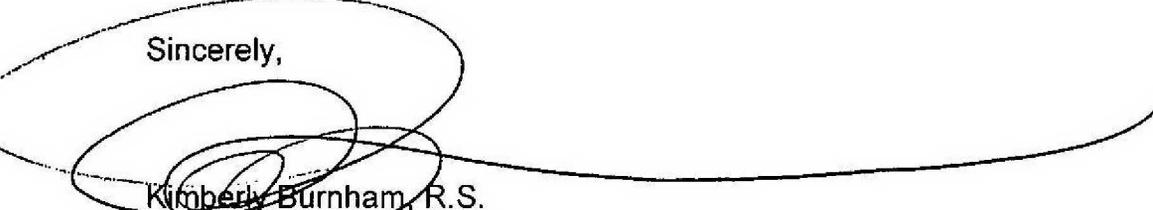
During the October 2008 annual sampling event, the concentration of ammonia at MW-15D was 7.4 mg/L. This concentration of ammonia is higher than observed at other on-site wells. Further, concentrations of this magnitude are not typically attributable to natural conditions, but are typically associated with ground water contamination. Such elevated ammonia concentrations have been noted at MW-15D since 2001.

Further, the concentration of barium was 960 µg/L. This concentration of barium is considerably higher than observed at other on-site wells.

Ammonia and barium are not statistical indicator parameters for the facility. However, ground water beneath a landfill facility can still become impacted without a statistically significant change in the indicator parameters. Considering this, the owner/operator should closely monitor the ammonia and barium concentrations at MW-15D in future sampling events.

If you have any questions, please feel free to contact Ken Brock at the Ohio EPA Northwest District Office at 419-373-3143. Any written correspondence should be sent to the attention of Kimberly Burnham, Division of Solid and Infectious Waste Management, Ohio EPA Northwest District Office, 347 N. Dunbridge Road, Bowling Green, Ohio 43402.

Sincerely,



Kimberly Burnham, R.S.
Environmental Specialist
Division of Solid and Infectious Waste Management

/csl

pc: Tamara Moorman, RMT, Inc.
(NWDO File: Defiance County, GMPT Landfill, Ground Water)

ec: Jack Leow, DDAGW, NWDO
Ken Brock, DDAGW, NWDO

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