



State of Ohio Environmental Protection Agency

Northwest District Office

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

Re: Defiance County Landfill
Ground Water

February 25, 2009

Defiance County Commissioners
500 Court Street
Defiance, OH 43512

Dear Commissioners:

On November 24, 2008, the Ohio Environmental Protection Agency (Ohio EPA), Division of Solid and Infectious Waste Management (DSIWM), Northwest District Office (NWDO) received the "Ground Water Quality Report for the September 2008 Semi-annual Sampling Event and Semi-annual Determination of Rate, Extent and Concentration" (Report), for the Defiance County Landfill (facility) in Defiance County. The Report, submitted by Eagon & Associates, Inc. on behalf of the commissioners, was dated November 21, 2008. The Report was reviewed to determine compliance with Ohio Administrative Code (OAC) Rule 3745-27-10. Ohio EPA's comments are below.

COMMENTS

Violations

1. **The owner/operator is in violation of OAC Rule 3745-27-10(C)(10), which requires the ground water quality data to be submitted to Ohio EPA within seventy-five days of sampling, as the timeline for submitting ground water quality data was not met for alkalinity for the September 2008 sampling event. To meet the requirements of this rule in the future, all ground water quality data needs to be submitted to Ohio EPA within 75 days of sampling the well(s). Further, the alkalinity data from the November 2008 sampling event (see below) needs to be submitted to Ohio EPA as soon as possible.**

OAC Rule 3745-27-10(C)(10) requires that all sample analysis results from ground water sampling events be submitted to Ohio EPA within 75 days of sampling the well(s).

The submittal notes that due to laboratory error, alkalinity was not analyzed for seven wells during the September 2008 sampling event (for MW-8A, MW-15A, MW-26A and MW-32A screened in the basal sand and for wells MW-1A, MW-8

and MW-26 screened in the dolomite bedrock). The submittal indicates that these wells were resampled to allow for the alkalinity analysis and Eagon & Associates, Inc. has indicated that this resampling event was performed in November 2008.

However, to date, the results of this alkalinity resampling have not been submitted to Ohio EPA. Therefore, considering that it has now been more than 75 days since November 2008, the owner/operator is in violation of OAC Rule 3745-27-10(C)(10).

Statements

2. **The owner/operator has until April 7, 2009 to either receive approval of a demonstration according to OAC Rule 3745-27-10(D)(7)(c)(ii) for statistically significant increases at MW-2A and MW-8 or implement assessment monitoring activities for the applicable wells.**

During the September 2008 semi-annual sampling event, statistically significant increases were noted for the following detection monitoring wells (see Comment No. 3 below regarding statistically significant increases at compliance monitoring wells):

- ▶ MW-2A for sodium and potassium; and
- ▶ MW-8 for sodium and potassium.

The submittal states that a demonstration in accordance with OAC 3745-27-10(D)(7)(c)(ii) for these statistically significant increases will be submitted to Ohio EPA under separate cover.

OAC Rule 3745-27-10(D)(7)(c)(ii) states "*...If the owner or operator does not obtain approval to continue detection monitoring within two hundred and ten days from initial sampling, the owner or operator shall comply with the provisions of paragraph (E) of this rule.*"

Therefore, if the owner/operator either does not seek approval to continue detection monitoring for these statistically significant increases or does not

receive approval from the Director to continue detection monitoring at all of these wells by April 7, 2009 (210 days after September 9, 2008 initiation of sampling event), then the owner/operator will be required to implement a ground water quality assessment monitoring program for the appropriate well(s) by April 7, 2009.

3. **The owner/operator is reminded to follow the procedures prescribed by the Compliance Monitoring Plan (CMonP) and applicable OAC rules for the statistically significant increases noted for compliance monitoring wells MW-8A, MW-11, MW-15A and P-11S.**

During the September 2009 semi-annual sampling event, statistically significant increases were noted for the following compliance monitoring wells:

- ▶ MW-8A for ammonia and potassium;
- ▶ MW-11 for ammonia, chloride, sodium and potassium;
- ▶ MW-15A for sodium and potassium; and
- ▶ P-11S for sodium.

Of these statistically significant increases, ammonia, chloride and sodium have been statistically significant at MW-11 in the past. However, this is the first occurrence of statistically significant increases for potassium at MW-8A and MW-11, for sodium and potassium at MW-15A and for sodium at P-11S. Note that some of these constituents have been statistically significant previously, but they have not been confirmed to be an assessment parameter.

The CMonP prescribes different procedures for these statistically significant increases as detailed below.

3a. Ammonia, Chloride and Sodium at MW-11

The CMonP states "If a compliance monitoring parameter currently above background is detected and confirmed at a concentration above the intrawell statistical limit, the well will be sampled for Appendix II parameters. If any constituent from Appendix II that is not also in Appendix I is detected above the PQL, and confirmed with resampling, the rate and extent of migration for that parameter will be determined in accordance with OAC 3745-27-10(E)(6)."

3b. Potassium for MW-8A and MW-11, sodium and potassium for MW-15A and sodium for P-11S

For parameters that have not previously been statistically significant, the CMonP states *"If a parameter is detected above the statistical limit and confirmed with resampling, an alternate source demonstration (ASD) may be prepared consistent with OAC 3745-27-10(D)(7)(c). If the ASD is not successful, the assessment monitoring program will be reactivated, and the rate and extent of migration will be determined. The reporting, Ohio EPA notification, and Appendix I and II sampling requirements of OAC 3745-27-10(E) will be followed if a SSI is identified for an approved alternate Appendix I parameter not currently above background."*

4. **Ground water monitoring continues to indicate ground water contamination in the basal sand and the 675 sand along the east side of the existing landfill. This contamination will likely continue to spread through these zones towards the northeast until remediated. The owner/operator needs to continue pursuing the remediation of this ground water contamination through the corrective measures program.**

The submittal documents that the ground water flow rates for the basal sand and 675 sand units were calculated to respectively be 0.08 feet/day and 0.001 feet/day towards the northeast. These ground water flow rates translate to rates of approximately 29 feet per year for the basal sand and approximately 0.365 feet per year for the 675 sand.

The ground water in the basal sand unit in the MW-8A/MW-11 assessment area has been impacted by elevated levels of ammonia, chloride, sodium and potassium to date. As shown on Figure 23 of the submittal, the zone of impact for the MW-8A/MW-11 assessment area is believed to emanate from the landfill near MW-8A and MW-11 and extend towards the northeast beyond the locations of MW-8A, MW-11 and MW-15A, but does not reach the location of MW-32A. As delineated, the area of impact is approximately 460 feet long and approximately 400 feet wide, occupying approximately 4 acres.

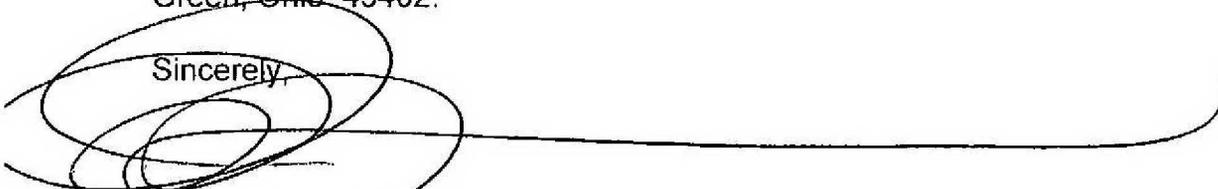
The ground water in the 675 sand unit in the P-11S assessment area has been impacted by elevated levels of ammonia, chloride, sodium, potassium, nitrate-nitrite, total alkalinity and manganese to date. As shown on Figure 25 of the submittal, the zone of impact for the P-11S assessment area is believed to emanate from the landfill near P-11S and extends towards, but does not reach the location of P-36SR. As delineated, the area of impact is approximately 125 feet long and approximately 100 feet wide, occupying approximately 0.28 acres.

Defiance County Commissioners
February 25, 2009
Page Five

5. **The ground water data summary table for MW-11 is in error. This summary table reports the manganese concentrations for the March and September 2008 sampling events in mg/L, rather than µg/L.**

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

/lb

pc: Tim Houck, Defiance County Landfill
Beth Brown, Eagon & Associates, Inc.
~~File: Defiance County, Defiance County Landfill, Ground Water~~

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