



State of Ohio Environmental Protection Agency

Northwest District Office

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Bowling Green, Ohio 43402

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Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Laura H. Powell, Acting Director

Re: Response To Ohio EPA Comments
Hardin County Landfill, Hardin County

January 10, 2007

Hardin County Commissioners
One Courthouse Square
Suite 100
Kenton, Ohio 43326

Dear Commissioners:

The Ohio Environmental Protection Agency (Ohio EPA) has reviewed the submittal received on April 26, 2006 for the Hardin County Landfill (facility). This submittal responded to Ohio EPA comments and was dated April 24, 2006. Ohio EPA comments follow.

COMMENTS

COMMENTS REGARDING NOVEMBER 17, 2004 (#5-4598) OHIO EPA LETTER

VIOLATION

1. OAC Rule 3745-27-10 (B)(1)(b): Based on the response submitted, the owner/operator is in violation of OAC Rule 3745-27-10 (B)(1)(b). This rule requires that, "The ground water monitoring system, for detection monitoring, assessment monitoring, or corrective measures, shall consist of a sufficient number of wells, installed at appropriate locations and depths, to yield ground water samples from both the uppermost aquifer system and any significant zones of saturation that exist above the uppermost aquifer system that do the following: (b) Represent the quality of the ground water passing directly downgradient of the limits of solid waste placement."

Previously, Ohio EPA had cited OAC Rule 3745-27-10 (B)(1)(b) and commented on the interpretations presented in the potentiometric surface maps for the June 30, 2004 and August 4, 2004 data. The interpretations did not properly honor all the data, specifically the data collected at well BW-2R. The agency provided discussion relating to the specifics of the interpretation and discussed the anomalous gradients produced in the interpretation. The agency indicated that in order to determine compliance with this rule the owner/operator needed to appropriately contour the map and show that the requirements of this rule are

met. This same pattern of ground water elevation data has been presented since 2003. Ohio EPA has made comment on several occasions. The interpretations on the historical maps effectively mask the true direction of flow in this area of the site. The data indicates that the ground water flow in this area is toward the east and at least one additional well needs to be added to the sampling and analysis program in the area of UAS well BW-2R.

The owner/operator replied that, "...in addition to these locations, groundwater elevation data at adjacent monitoring points, as well as historical groundwater elevation data, also need to be considered when determining the placement of contour lines. Placement of a contour line between two data points may appear to be appropriate until adjacent monitoring points are also considered prior to placement of the lines." The owner/operator indicated that they believe the data were properly honored and indicated they re-checked their calculations for contour placement in the areas of BW-3R, BW-5, BW-4 and RW-7. They also indicated that, "Review of the June 30, 2004 potentiometric surface map indicates that groundwater movement within the uppermost aquifer in the southeast corner of the site is from BW-5 toward BW-3R, or in a southwest direction." They also state, "...a review of the groundwater elevation data between BW-2R and BW-5 indicates a very slight southwest direction of groundwater movement..."

The owner/operator also states, "A similar evaluation was completed for the August 5, 2004 potentiometric surface map, with similar findings." They indicate they believe contour lines are appropriately placed between, "...BW-4/BW-3R and RW-7/BW-2R" and "...between BW-4/BW-3R and BW-3R/BW-5". The owner/operator states, "...the 953.3 contour line could actually be drawn closer to BW-3R which would result in a more pronounced southwest direction of groundwater movement toward BW-3R. Also similar to the June 30, 2004 map, a very slight southwest direction of groundwater movement exists between BW-2R and BW-5 in the southeast corner of the site."

The owner/operator also indicates that a similar pattern of ground water elevations was presented in the October 16, 2003 sampling and analysis plan for data collected on September 25, 2003. They indicated Ohio EPA noted no deficiencies for the revision to the maps dated January 29, 2004. Because of this they believe the 2004 maps should be acceptable.

The owner/operator should understand that unless there is a specific error in the ground water elevation data, all the data should be honored. In the map of the August 2004 data, the ground water elevation value at well BW-2R is 953.38'. Based on proper contouring protocol this value should be located at 40% of the distance from the 953.30' line to the 953.50' line and being closer to the 953.30' line. As drawn, the BW-2R data point of 953.38' is located at 74.5% of the

distance from the 953.30' line to the 953.50' line and being closer to the 953.50' line. Properly honoring the BW-2R data point will significantly change the ground water flow direction toward the east requiring an additional well to be added to the sampling and analysis plan. This well would be in the area of well BW-2R.

The owner/operator provided no details regarding the area near well BW-2R. Also, based on the maps provided by the owner/operator, ground water flow in the area of BW-5 and BW-3R does not flow from BW-5 toward BW-3R as stated by the owner/operator. The owner/operator also referenced the map drawn on the October 2003 data and indicated a similar pattern to the ground water elevations in the southeast corner of the site. At the time Ohio EPA indicated that the values were not properly honored and recommended review and production of a new map. This was done in comments 9 and 10 in the Ohio EPA response to the submittal of the 2003 sampling and analysis plan (5-3645). Details were provided by Ohio EPA regarding the errors involved. Deficiencies were not noted relating to the revised map since they would not necessarily be a compliance issue until the sampling had occurred. The 2003 and the June and August 2004 maps, therefore, indicate that the ground water flow direction was erroneously interpreted and an additional well may be necessary in the sampling and analysis program.

Since the August 2004 map was provided, the owner/operator has submitted uppermost aquifer system potentiometric surface maps for data collected November 8, 2004, May 11, 2005 and November 9, 2005. All of these maps display the same pattern and the same errors in honoring the data. Comment was again made by Ohio EPA regarding the 2005 maps. Based on the maps provided since 2003 it is apparent that the contouring errors have masked the true direction of ground water flow. Also, it is apparent that at least one additional well, in the area of well BW-2R, needs to be added to the monitoring program. The owner/operator needs to re-draw the potentiometric surface maps for the various sampling events from 2003 to the present; determine where additional wells are necessary; and submit the corrected maps and the recommendations for additional wells to Ohio EPA. Ohio EPA is willing to meet with the owner/operator or their consultant regarding their interpretation.

COMMENTS REGARDING FEBRUARY 16, 2005 (5-4871) OHIO EPA LETTER

MORE INFORMATION NEEDED TO DETERMINE COMPLIANCE

1. Ohio EPA cited OAC Rule 3745-27-10 (C)(7)(a) and noted that there was no documentation that the interwell background data for zinc (from BW-1) were normally distributed. Ohio EPA requested that information. The owner/operator responded that this information is now supplied in the revised statistical methods plan dated December 14, 2005. In the new plan the owner/operator intends to

utilize intrawell statistical methods. Documentation of the normality of the background in the downgradient wells was provided. No owner/operator response is necessary at this time.

2. Ohio EPA cited OAC Rule 3745-27-10 (C)(7)(a) and noted that there was no documentation that the intrawell background data for nitrogen ammonia in BW-5 were normally distributed. The owner/operator responded that this information is now supplied in the revised statistical methods plan dated December 14, 2005. In the new plan the owner/operator provided that documentation. No owner/operator response is necessary at this time.

STATEMENTS

3. Ohio EPA concurs. However, use of redline/strikeout would facilitate Ohio EPA review and may alleviate the need for additional agency comment since without redline/strikeout, or some documentation of actual changes, a full plan review would be required. No owner/operator response is required.

COMMENTS REGARDING MARCH 9, 2005 (5-4923) OHIO EPA LETTER

EVALUATIONS OF OWNER/OPERATORS' RESPONSE TO PREVIOUSLY CITED VIOLATIONS

1. This comment referenced the use of new PQLs in the background data base. The owner/operator cited recent Ohio EPA guidance. The owner/operator requested that the violation be rescinded.

Ohio EPA had cited OAC Rule 3745-27-10 (C)(7)(e) and indicated the owner/operator was in violation of this rule by utilizing PQLs in the statistical analyses which were not the lowest as required by this rule. Based on recent guidance and internal discussion and clarification the cited violation no longer appears to be appropriate. Rescission of this violation of OAC Rule 3745-27-10 (C)(7)(e) is recommended since recent PQL values can now be utilized as the non-parametric prediction limits in specific instances. No owner/operator response is required at this time.

MORE INFORMATION NEEDED TO DETERMINE COMPLIANCE

2. Ohio EPA cited OAC Rule 3745-27-10 (C)(10)(g), referenced the owner/operator's use of the term "routine PQL", and requested clarification if this term is equivalent to the term PQL in order to determine compliance with this rule. The owner/operator responded that the terms are equivalent. No owner/operator response is required at this time.

3. Ohio EPA cited OAC Rule 3745-27-10 (C)(7)(e) and quoted the owner/operator relative to the use of different laboratories using different PQLs during previous sampling events. It was not clear if RLs used previously were equivalent to the previously used PQLs. The owner/operator cited recent Ohio EPA guidance and indicated that it is no longer necessary to evaluate previous PQLs or RLs if the current PQL is appropriate. Ohio EPA concurs. No owner/operator response is required at this time.
4. Ohio EPA cited OAC Rule 3745-27-10 (C)(1)(a), quoted the passage from the sampling and analysis plan relating to the recording of information on the field data sheet, noted some potential discrepancies and requested clarification. The owner/operator provided this clarification. No owner/operator response is required at this time.
5. Ohio EPA cited OAC Rule 3745-27-10 (C)(6), discussed discrepancies in the background data set for cadmium at well BW-3R and requested clarification. The owner/operator provided that clarification. No owner/operator response is required at this time.

RECOMMENDATIONS

6. No owner/operator response is required at this time.

STATEMENTS

7. No owner/operator response is required at this time.

COMMENTS REGARDING JUNE 19, 2005 (5-5189) OHIO EPA LETTER

STATEMENTS

1. No owner/operator response is required at this time.

COMMENTS REGARDING JULY 7, 2005 (5-5189) OHIO EPA LETTER

STATEMENTS

1. No owner/operator response is required at this time.

COMMENTS REGARDING JULY 7, 2005 (5-5189) OHIO EPA LETTER

COMPLIANCE

- 1 Ohio EPA cited OAC Rule 3745-27-10 (B)(3)(e) which requires that, "...monitoring wells, piezometers, and other measurement, sampling and analytical devices be operated and maintained to perform to design specifications..." Ohio EPA provided a table of problems observed during the closed facility ground water inspection, a list of wells at which the problems were observed and a list of recommended actions. The owner/operator responded that they will make repairs when weather conditions allow. No owner/operator response is required at this time.

RECOMMENDATIONS

- 2-13. No owner/operator response is required at this time.

COMMENTS REGARDING MARCH 6, 2006 (5-5789) OHIO EPA LETTER

STATEMENTS

- 1-5. Ohio EPA provided five (5) comments relating to the evaluation of the supplemental corrective measures. These comments included those related to the identification of the base of waste, a potential error in the horizontal and vertical scale, a potential error in the profile, a recommended use of perforated pipe to drain the end moraine/floodplain zone on the south side of the landfill, and the location where the leachate would be pumped. The owner/operator indicated these comments will be addressed, as appropriate, in the report of the installation of the supplemental corrective measures. No owner/operator response is required at this time.

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If you have any questions, please feel free to contact Randy Skrzyniecki at the Ohio EPA Northwest District Office (419) 373-3149. Any written correspondence should be sent to the attention of Mike Reiser, Division of Solid and Infectious Waste Management, Ohio EPA Northwest District Office, 347 North Dunbridge Road, Bowling Green, Ohio 43402.

Sincerely,



Michael A. Reiser, R.S.
Environmental Specialist
Division of Solid and Infectious Waste Management

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pc: Mr. David Zeller, Hardin County Health Department
Mr. Tom Covrett, Mannik & Smith Group, Inc.
Mr. Jack Leow, DDAGW, NWDO
Mr. Randy Skrzyniecki, DDAGW, NWDO
~~File: Hardin County, Hardin County Landfill, Ground Water~~

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