OhioEPA

State of Ohio Environmental Protection Agency

Northwest District Office

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

Re: Wood County Landfill
Ground Water

August 28, 2007

Wood County Board of Commissioners
One Courthouse Square
Bowling Green, Ohio 43402

Dear Commissioners:

On August 13, 2007, the Ohio Environmental Protection Agency (Ohio EPA) performed an Operating Facility Ground Water Inspection (OFGWI) at the Wood County Landfill (Facility). A representative from the Ohio EPA Division of Drinking and Ground Waters (DDAGW) was present during the inspection. Ground water sampling activities were performed by representatives of Hull & Associates, Inc. This inspection included the following:

- Observation of Hull & Associates, Inc.'s sampling procedures;
- Observation of the surficial construction of on-site monitoring wells.

Attached to this letter is the inspection form. This form summarizes the inspection of the surficial well construction of the on-site monitoring wells and also summarizes the inspection of the equipment and procedures used during the sampling event.

COMMENTS

Violations

1. **Ohio Administrative Code (OAC) Rule 3745-27-10(B)(3)(e): The owner/operator is in violation of OAC Rule 3745-27-10(B)(3)(e) which requires that *"The monitoring wells, piezometers, and other measurement, sampling, and analytical devices shall be operated and maintained to perform to design specifications throughout the life of the monitoring program."*. Monitoring wells MWS-7, MWR-2 and MWR-3 need repair/maintenance as noted below as soon as possible with proper documentation submitted to Ohio EPA.**

As observed during the August 13, 2007 inspection, several on-site monitoring wells require repair/maintenance. The attachment summarizes the needed repair/maintenance which consists of the following:

- The concrete pads at MWS-7, MWR-2 and MWR-3 are not visible. During the inspection, the ground water sampler indicated that the pads for these wells were likely buried from recent heightening of the grade around these wells. Gravel was observed at the ground surface around the steel protective casings for these wells. Good concrete pads are necessary to assure that surface water does not enter the borehole. Concrete pads should be sloped to drain surface water away from the borehole.

- MWR-3 was apparently struck by something (such as heavy equipment) as the steel protective casing is bent. The casing is bent to the degree that the locking cap for the steel protective casing cannot be easily or properly secured. The PVC casing may also be damaged. However, damage to the PVC casing could not be evaluated during the inspection. If the PVC casing has been damaged, a route for contaminants (such as surface water or shallow ground water) may have been created in the well. The purpose of MWR-3 is to provide access to collect representative ground water samples from the bedrock aquifer. MWR-3 needs to be inspected and repaired as necessary.

More Information Needed to Determine Compliance

2. **OAC Rule 3745-27-10(C)(2)(h): As detailed below, more information is required to determine compliance with OAC Rule 3745-27-10(C)(2)(h) which requires that the Sampling & Analysis Plan (SAP) include a detailed description of the procedures to be used for *"The identification of well maintenance problems encountered during routine sampling of the wells and the process to assure that necessary maintenance is performed."*. The Ground Water Detection Monitoring Plan (GWDMP), which includes the SAP, needs to specifically document these procedures.**

The GWDMP states that the monitoring wells will be inspected during the ground water sampling events and that necessary maintenance will be performed. The GWDMP also includes a copy of the field data sheets which are used during ground water sampling events at the facility. These field data sheets include a space to document the general condition of the monitoring wells. However, the GWDMP does not include specific documentation of the procedures that are to

be used for the identification of well maintenance problems (i.e., what conditions constitute problems) and does not document the procedures that are to be used to assure that any necessary maintenance is performed in a timely manner (i.e., reporting, timelimes and personnel involved).

3. **<u>OAC Rules 3745-27-10(C)(1) and (C)(2)(d)</u> As detailed below, more information is needed to determine compliance with OAC Rules 3745-27-10(C)(1) and (C)(2)(d) which require that *"the ground water monitoring program shall include consistent sampling and analysis procedures...that are designed to ensure monitoring results that provide an accurate representation of ground water quality..."*. Further, OAC Rule 3745-27-10(C)(2)(d) requires that the GWDMP document the procedures for performance of field analysis. To assure compliance with OAC Rules 3745-27-10(C)(1) and (C)(2)(d) in the future, the owner/operator needs to do one of the following:**

- **revise the GWDMP to document the new field parameter stabilization criteria noted below for all purging techniques, followed by field implementation;**

  OR

- **demonstrate to Ohio EPA how the current field parameter stabilization criteria for volumetric purging meet the requirements of OAC Rule 3745-27-10(C)(1).**

The GWDMP documents two different procedures for field parameter stabilization. For volumetric purging, the GWDMP states that well purging will continue until the field parameters (pH, conductivity and temperature) stabilize to within 10% over 2 consecutive measurements. For low-flow purging, the GWDMP states that well purging will continue until the field parameters stabilize to ±0.1 S.U. for pH, ±3% for conductivity and ±0.5°C for temperature. Further, that this stabilization be noted over three consecutive measurements. Ohio EPA concurs with these low-flow field parameter stabilization requirements documented in the GWDMP. However, Ohio EPA does not consider the field parameter stabilization criteria documented in the GWDMP for volumetric purging to be adequate.

4. <u>OAC Rules 3745-27-10(C)(2)(g)(iii)</u> **As detailed below, more information is needed to determine compliance with OAC Rules 3745-27-10(C)(2)(g)(iii) which requires that the sampling and analysis plan document *"the number of...equipment blanks shall be enough to adequately demonstrate the accuracy of the analysis results"*. To assure compliance with OAC Rules 3745-27-10(C)(1) and (C)(2)(d) in the future, the owner/operator needs to do one of the following:**

- **Discontinue the use of the *Keck* submersible pump for purging monitoring wells as discussed in Comment No. 7; or**

- **Document procedures in the GWDMP for collecting equipment blanks of the *Keck* submersible pump, followed by implementation in the field.**

As noted in Comment No. 7, a few on-site monitoring wells are being purged using a *Keck* submersible pump. However, associated equipment blanks are not being collected and are not documented within the GWDMP.

<u>**Recommendations**</u>

No action on the part of the owner/operator is required by rule to address the following recommendations. However, in Ohio EPA's opinion, the recommendations will improve the clarity of the referenced document and/or reduce further misunderstandings between Ohio EPA and the facility owner/operator.

5. The GWDMP documents that purging of the ground water monitoring wells will be done using either volumetric or low-flow methods. However, low-flow methods are not being used for the ground water monitoring program.

The purpose of the GWDMP is to clearly and concisely document the ground water detection monitoring program and the procedures that are used on a regular basis for ground water sample collection and analysis.

To avoid confusion, Ohio EPA recommends that the GWDMP be revised to eliminate references to the use of low-flow purging methods as low-flow purging is not used for the ground water monitoring program for the facility.

6. The GWDMP documents that various equipment might be used for ground water purging including bailers, submersible pumps, foot-valve lift pumps, peristaltic pumps or positive-displacement piston pumps. However, bailers, foot-valve lift pumps, peristaltic pumps and positive-displacement piston pumps are not being used for the ground water monitoring program.

   The purpose of the GWDMP is to clearly and concisely document the ground water detection monitoring program and the procedures that are used on a regular basis for ground water sample collection and analysis.

   To avoid confusion, Ohio EPA recommends that the GWDMP be revised to eliminate references to the use of bailers, foot-valve lift pumps, peristaltic pumps or positive-displacement piston pumps as these pumps are not used for the ground water monitoring program for the facility.

7. Dedicated bladder pumps are installed in most of the on-site monitoring wells. However, three of the newer ground water monitoring wells do not have dedicated bladder pumps. Rather, these wells are purged and sampled using a *Keck* submersible pump. This submersible pump is not dedicated and is decontaminated between wells.

   To assure consistency of the representative ground water quality at the facility (different purging and sampling methods can result in varied ground water analysis results) and to avoid the inherent risk of cross-contamination from non-dedicated purging and sampling equipment, Ohio EPA recommends that dedicated bladder pumps be installed in the newer ground water monitoring wells and that the use of the non-dedicated submersible pump be discontinued. Any such changes to the ground water monitoring program need to be documented in a revised GWDMP.

8. During the August 13, 2007 sampling event, sampling equipment and sample bottles were not placed on potentially contaminated surfaces. Ohio EPA concurs with this procedure. However, the GWDMP does not document that this procedure will be followed.

Ohio EPA recommends that the GWDMP be revised to state that sampling equipment and sample bottles will not be placed on potentially contaminated surfaces.

9. During the August 13, 2007 sampling event, purge water from the detection monitoring wells was discharged on the ground away from the well head and purge water from the assessment monitoring wells was being containerized for discharge to the leachate collection system. Ohio EPA concurs with these procedures. However, the GWDMP does not document that these procedures will be followed.

   Ohio EPA recommends that the GWDMP be revised to document this procedure for purge water disposal.

10. The GWDMP does not document that purging and sampling equipment malfunctions will be documented on the field forms. Further, the GWDMP does not document that any necessary deviations from the GWDMP will be documented on the field forms. During the August 13, 2007 inspection, malfunctions with purging and sampling equipment did not occur, nor were deviations from the GWDMP necessary.

    However, Ohio EPA recommends that the GWDMP be revised of document that purging and sampling equipment malfunctions will be documented on the field forms and that necessary deviations from the GWDMP will be documented on the field forms.

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

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attachment

pc: James Konopinski, Wood County Health Department
Ken Brock, DDAGW, NWDO
William Petruzzi, Hull & Associates, Inc.
Ken Reiman, Wood County Solid Waste Management District
Ken Vollmar, Wood County Landfill
File: Wood County; Wood County Landfill; Ground Water

ec: Ed Merriman, DSWIM, NWDO
Jack Leow, DDAGW, NWDO

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