

Environmental
Protection Agency

Governor
Lt. Governor
Director

October 24, 2011

RE: **BROOKLYN LANDFILL
GROUND WATER MONITORING
NOTICE OF VIOLATION**

CERTIFIED MAIL 7011 0470 0002 3496 4390

The Honorable Richard H. Balbier
Mayor, City of Brooklyn
7619 Memphis Avenue
Brooklyn, OH 44144

Dear Mayor Balbier:

The Ohio Environmental Protection Agency (Ohio EPA) Division of Materials and Waste Management (DMWM) reviewed the Revised Ground Water Detection Monitoring Plan (GWDMP) dated February 2011 and received by Ohio EPA on February 14, 2011. The GWDMP was submitted by Civil & Environmental Consultants, Inc. on behalf of the City of Brooklyn (City) and replaces the May 2004, January 2005, and July 2008 revisions. The February 2011 GWDMP was revised to incorporate changes to the detection monitoring well network by designating W-16 as a piezometer. It was reviewed for compliance with OAC 3745-27-10(C)(10) of the revised 2003 solid and infectious waste rules.

Upon review of the GWDMP, Ohio EPA identified Brooklyn in violation of **OAC 3745-27-10(C)(1)** which states that the ground water monitoring program must include consistent sampling and analysis procedures and statistical methods that are protective of human health and the environment, and that are designed to ensure monitoring results that provide an accurate representation of ground water quality in the background and downgradient wells installed in accordance with paragraph (B), (D), (E), or (F) of this rule.

In addition, the Technical Guidance Manual (TGM): Chapter 10: Ground Water Sampling Page 10-33 Revision 1, February 2006, states if purging to dryness is unavoidable or inadvertent, then samples should be taken as soon as there is a sufficient amount of water. Extended recovery times after purging (hours) allow the ground water to equilibrate with atmospheric conditions. In the case of a well with very slow recharge, sample collection should be attempted at least every 24 hours up to 72 hours.

According to Section 4.4 of the 2011 GWDMP, Monitoring Well Sampling states if a well purges dry prior to collecting a complete set of samples, the sample technician will return to the well on the same day to attempt to collect additional sample volume.

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Therefore, the well will be considered sampled until the next scheduled semiannual sampling event if no additional volume can be collected.

Considering the rules and the TGM, Brooklyn needs to attempt to sample every 24 hours up to 72 hours following purging. Therefore, the GWDMP must be revised to ensure monitoring results that provide an accurate representation of ground water quality at the background and downgradient wells.

In addition, Ohio EPA has the following recommendations:

1. Ohio EPA recommended that Brooklyn SLF switch to low-flow purging, also referred to as low-stress purging, low-impact purging, minimal drawdown purging, or Micropurging®. TGM: Chapter 10: Ground Water Sampling Page 10-29 Revision 1, February 2006, states that low-flow purging is a method of well purging/sampling that does not require large volumes of water to be withdrawn. The term low-flow refers to the fact that water enters the pump intake with a low velocity. The objective is to minimize drawdown of the water column in the well, avoid disturbance of the stagnant water above the well screen, and draw fresh water through the screen at a rate that minimizes sample disturbance. Usually, this will be a rate less than 500 ml/min and may be as low as 100 ml/min. Once drawdown stabilizes, the sampled water is isolated from the stagnant water in the well casing, thus eliminating the need for its removal (Powell and Puls, 1993). The method is based on the principle that water within the screened zone passes through continuously and does not mix with water above the screen. After drawdown has stabilized and indicator parameters have stabilized, water in the screen can be considered representative of water in the formation. Given this, purging of multiple well volumes is not necessary (Kearl et al., 1994; Powell and Puls, 1992; Nielsen and Nielsen, 2002, ASTM Method D6771-02).

Therefore, low-flow sampling could offer the following advantages: Lessen the volume of water to be purged and disposed; Reduce aeration or degassing; Maintain the integrity of the filter pack; and Minimize disturbance within the well water column and surrounding materials, thus reducing turbidity which is an issue at the landfill.

2. Ohio EPA recommends that language referring to Compliance Monitoring System be changed in Section 2.0 and Section 3.0 of the GWDMP:
 - Section 2.2 uses the language “changes to the compliance monitoring system” changed to “changes to the detection monitoring system.”

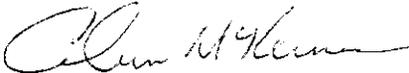
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- Section 2.3.2 uses the language “downgradient compliance wells screened in the uppermost aquifer” changed to “downgradient detection monitoring wells screened in the uppermost aquifer.”
- Section 3.5 “Compliance Wells Screened in the Uppermost Aquifer” changed to “Detection Wells Screened in the Uppermost Aquifer.”

Nothing in this letter shall be construed to authorize any waiver from the requirements of any applicable state or federal laws or regulations. This letter shall not be interpreted to release the entity from responsibility under Chapters 3704, 3714, 3734, or 6111 of the Ohio Revised Code or under the Federal Clean Water or Comprehensive Environmental Response, Compensation, and Liability Acts for remedying conditions resulting from any release of contaminants to the environment.

Please contact Katherine Springer Amey at (330) 963-1289 if you have any technical questions regarding this review. Otherwise, please submit all correspondence to Colum McKenna, Division of Materials and Waste Management, Northeast District Office, Ohio EPA, 2110 East Aurora Road, Twinsburg, Ohio 44087.

Sincerely,



Colum McKenna
Environmental Specialist
Division of Materials and Waste Management

CM/cl

cc: Katherine Springer Amey, DDAGW
Laura Travers, CCBH
John Verba, Brooklyn Service Department
Chris Jones, Calfee
File: [Sowers/LAND/Brooklyn LF/GRO/18]
DMWM #3764