



State of Ohio Environmental Protection Agency

**Northwest District Office**

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

Re: Huron County Landfill  
Ground Water  
Huron County, Ohio

June 5, 2007

Huron County Commissioners  
180 Milan Ave.  
Norwalk, Ohio 44857

Dear Commissioners:

The owner/operator is currently required to perform ground water detection monitoring (and assessment monitoring activities for MW-2, MW-19 and MW-21) at the facility. Ohio EPA has reviewed the March 22, 2007 letter (received March 26, 2007) from Malcolm Pirnie, Inc. for the facility. This submittal documents responses to a February 23, 2007 letter from Ohio EPA (regarding the September 2006 sampling event). This submittal was reviewed to determine compliance with OAC Rule 3745-27-10.

**COMMENTS**

**Owner/Operator's Response to Previously Cited Violations**

1. The February 23, 2007 letter from Ohio EPA (regarding the September 2006 sampling event), cited the owner/operator in violation of OAC Rule 3745-27-10(A)(1). Regarding this citation, the February 23, 2007 letter stated "**OAC Rule 3745-27-10(A)(1) requires that the owner/operator implement a "...groundwater monitoring program capable of determining the impact of the facility on the ground water quality..."**".

**During the September 2006 semi-annual sampling event, extremely high turbidities were recorded at assessment monitoring wells MW-21, AW-19A and MW-19C. Respective turbidities of 4340 NTU, 7010 NTU and 9200 NTU were recorded for these wells. These turbidities are much higher than typically characteristic of representative ground water samples. Regarding turbidity of ground water samples, the Ground Water Quality Assessment Plan states "Turbidity will be measured at approximately the time the sample is collected. If turbidity values are elevated, the sampling team may continue purging in an attempt to get the turbidity value below 5 NTUs."**

**For MW-21, this turbidity (4340 NTU) was much greater than previously noted for MW-21. Prior to this event, the turbidities at MW-21 generally ranged from 20 to 200 NTU, with one spike of 560 NTU in April 2003. It also appears that this high turbidity for the September 2006 sampling event artificially elevated metals constituents for the sample from MW-21 as evidenced by record concentrations of barium, beryllium, cadmium, chromium, cobalt, copper, lead, nickel, vanadium, potassium, magnesium, calcium, iron and manganese.**

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**This was the first semi-annual sampling event for assessment wells AW-19A and MW-19C. However, the sample results from these wells also suggest that many of the metals constituents at these wells were artificially elevated due to high turbidity of the samples.**

**Considering the above, the ground water samples from MW-21, AW-19A and MW-19C from the September 2006 sampling event were clearly not representative of the ground water quality. Representative ground water samples are a necessary part in determining the impact of the facility on the ground water quality.**

**Therefore, the owner/operator is in violation of OAC Rule 3745-27-10(A)(1)....".**

In response to this citation, the March 22, 2007 letter from Malcolm Pirnie, Inc. states "Huron County disagrees that they are in non-compliance with OAC Rule 3745-27-10(A)(1). Proper field procedures were followed during the sampling event, including the collection of ground-water samples from MW-21, AW-19A and MW-19C....Our response to the extremely high turbidity measurements provided by the laboratory for these three wells was to reject these results as being atypical and abnormally high. We requested that the laboratory investigate this, and they found that there was a calculation error and that the actual turbidities were a factor of ten lower than reported...Because of the elevated turbidity in groundwater monitoring well MW-19C during the September sampling event, MW-19C was resampled on November 16, 2006. The sample was analyzed for total metals. The turbidity of the November sample, as measured in the field, was 55.5 NTU, compared to 400 NTU in September...As expected, the concentrations of the analytes in the November sample are much smaller.(except for magnesium and calcium) than those for the September sampling event."

Even with the laboratory correction for turbidity (ten times lower than reported), the turbidities for these three wells for the September 2006 sampling event ranged from 424 NTU at MW-21 to 920 NTU at AW-19A. These high turbidities are still well above turbidities typically considered representative of ground water quality and are far above the owner/operator's ideal "target level" of 5 NTU documented in the Ground Water Quality Assessment Plan.

Further, as stated in the submittal, the turbidity and metals concentrations during the November 2006 resampling event at MW-19C were much lower than during the September 2006 sampling event. This adds more support to a conclusion that the September 2006 samples from the wells of concern were not representative of ground water quality.

Of interest regarding the September and November 2006 sampling events for MW-19C: more time was allotted for purging and sampling during the November 2006 sampling event (than for the September 2006 event) and that event produced a lower-turbidity sample. For comparison, during the September and November 2006 sampling events at MW-19C, the purging rates were approximately 0.4 gpm and 0.2 gpm, respectively. In both events MW-19C was purged dry and permitted to recover prior to sample collection. During the September and November 2006 events, the sample was respectively collected 2 hours and 3.5 hours after purging. Therefore, it appears that the slower purge rate and longer recharge time for the November 2006 sampling of MW-19C caused a significant reduction in turbidity and metals concentrations from the September 2006 sampling.

Considering the above, Ohio EPA maintains its position documented in the February 23, 2007 letter that **"...the ground water samples from MW-21, AW-19A and MW-19C from the September 2006 sampling event were clearly not representative of the ground water quality. Representative ground water samples are a necessary part in determining the impact of the facility on the ground water quality.**

Therefore, Ohio EPA believes that the violation of OAC Rule 3745-27-10(A)(1) was correctly cited in the February 23, 2007 letter from Ohio EPA.

2. The February 23, 2007 letter from Ohio EPA (regarding the September 2006 sampling event) cited the owner/operator in violation of OAC Rule 3745-27-10(C)(10) as ground water data summary tables were not submitted for AW-19A and MW-19C.

The March 22, 2007 submittal from Malcolm Pirnie, Inc. includes the missing data summary tables which adequately address the violation of OAC Rule 3745-27-10(C)(10) cited in the February 23, 2007 letter.

### Statements

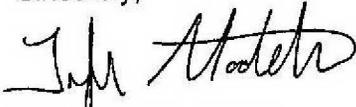
3. The February 23, 2007 letter from Ohio EPA (regarding the September 2006 sampling event) contained five (5) comments.

The status of Comments No. 1 and 2 of the February 23, 2007 letter are detailed in Comments No. 1 and 2 above. Comments No. 3, 4 and 5 of the February 23, 2007 letter were adequately addressed by the March 22, 2007 submittal from Malcolm Pirnie, Inc.

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

Sincerely,



Tyler Madeker S.I.T.  
Division of Solid and Infectious Waste Management

/csl

pc: Peter Welch, Huron County Landfill Manager  
Wes Rhiel, Malcolm-Pirnie  
File: Huron County, Huron County Landfill, Ground Water

ec: Habib Kaake, DSIWM-NWDO  
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**5-6824**