



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

February 4, 2013

Mr. Paul Quinn
Service Director
City of Westlake
27216 Hilliard Boulevard
Westlake, Ohio 44145

**RE: WESTLAKE CITY LANDFILL
CUYAHOGA COUNTY
POST CLOSURE GROUND WATER MONITORING
NOTICE OF VIOLATION**

Dear Mr. Quinn:

The Ohio Environmental Protection Agency (Ohio EPA), Northeast District Office (NEDO), has reviewed the following report for Westlake Landfill:

- Post Closure Ground Water Monitoring Report, May 2011 Sampling Episode, dated July 12, 2011.

The document is dated July 12, 2011. It was received July 12, 2011. The report was prepared and submitted by Mr. Fraser Hamilton of Earth Consulting, LTD, on behalf of the City of Westlake.

Westlake Landfill closed under the 1990 Solid Waste Landfill Regulations, and is currently conducting post-closure ground water detection monitoring and ground water quality assessment monitoring in accordance with OAC Rule 3745-27-10 of the 2003 revised Solid and Infectious Waste Regulations. Monitoring wells WW-2, WW-5, WW-9 and WW-10 are currently in the ground water quality assessment program and are being sampled in accordance with the ground water quality assessment plan. All other monitoring wells (i.e. WW-1, WW-3R, WW-4, WW-6R, WW-7, WW-8) at the facility are currently in the detection monitoring program.

The sampling report was prepared and submitted to conform with OAC Rule 3745-27-10(C)(10) of the 2003 revised Solid and Infectious Waste regulations. Therefore, the October 2010 report was reviewed for compliance with OAC 3745-27-10 and the facility's revised 2004 ground water detection monitoring plan (GWDMP).

Ohio EPA has reviewed the referenced document and has noted the following violations:

Violations

- 1) OAC Rule 3745-27-10(C)(10)(g): Submission of results. All ground water elevation, sample analysis and statistical analysis results generated in accordance with paragraphs (B), (C), (D), (E) and (F) of this rule shall be submitted to Ohio EPA not later than seventy-five days after sampling the well. All ground water data and an accompanying text shall be submitted to Ohio EPA in a form specified by the director or his authorized representative. The data and accompanying text required to be submitted in accordance with this paragraph shall be placed in the operating record in accordance with rule 3745-27-09 of the Administrative Code. The accompanying text shall consist of, at a minimum, the following: A description of the analysis methods used including method detection limits, and practical quantitation limits for the constituents analyzed.

The May 2011 report did not include method detection limits (MDLs) for any parameters analyzed.

Additionally, as described in Recommendation 2 below, some of the statistically significant increases above background for beryllium, cobalt and thallium described in Statement 1 below may simply be an artifact from the owner or operator not reporting MDLs and estimated results.

To return to compliance, the owner or operator must submit the MDL data to the Ohio EPA for the May 2011 sampling event for each parameter that is analyzed, and for each sample if the MDL varies by batch, matrix or sample. All future sampling events must include this MDL data.

- 2) OAC Rule 3745-27-10(E)(5)(a): Assessment monitoring schedule, frequency, and parameters. Within one hundred thirty-five days of notifying Ohio EPA of a statistically significant change in accordance with paragraph (D)(7) of this rule the owner or operator shall do the following: Sample the affected well(s) and analyze the samples for all waste-derived constituents, including all constituents listed in appendix I and appendix II of this rule. Any background wells within the flow path or closest to the affected well and screened within the same geologic unit as the affected well shall be sampled and analyzed for appendix I and II parameters.

Ohio EPA did not receive nor did the Director approve a false positive demonstration for the statistically significant increase above background for cobalt at WW-2 during the October 2010 sampling event prior to the deadline of May 19, 2011. Therefore, WW-2 is now in the ground water quality assessment program in accordance with

OAC 3745-27-10(E) and the owner or operator should have sampled WW-2 for Appendix II by May 19, 2011 if a false positive demonstration was not received and/or approved. Furthermore, OAC 3745-27-10(C)(1) requires that data from such sampling must be submitted to Ohio EPA within seventy-five days from date of sampling.

To date, Ohio EPA has not received any data documenting that WW-2 was sampled for Appendix II.

To return to compliance the owner or operator must do one or more of the following:

- Sample WW-2 for Appendix II parameters and submit the data to Ohio EPA as described above.
- Receive Director's approval of a request to return WW-2 to detection monitoring in accordance with OAC 3745-27-10(E)(9).

Recommendations

- 1) The water quality meter may need to be calibrated more frequently each day between purging and sampling wells.

Selected data recorded on the monitoring well sampling data log for WW-3R for the May 2011 sampling event appear to be far beyond the normal range based on previous data from MW-3R and other wells at the facility. A comparison of May 2011 field data ranges to June 2010 field data ranges is presented in the table below:

Parameter	May 2011	June 2010
pH (standard units)	5.70 - 6.37	6.79 - 6.89
Dissolved oxygen (%)	4.33 - 4.57	0.71 - 1.09
Oxidation-reduction potential (mV)	103 - 283	5 - 34

However, data from the following day at wells WW-4, WW-7 and WW-8 appear to be in the normal range. Based on the date and time data recorded on the monitoring well sampling data logs, it appears that MW-3R was the final well sampled on May 3, 2011. It appears that the water quality meter had fallen out of calibration over the course of the day on May 3, 2011 prior to sampling at WW-3R.

Since depth-to-water measurements indicate that drawdown in the well had stabilized, conductivity and temperature data had stabilized and a significant volume of water had been purged from the well prior to sampling, no indications exist that ground water quality had not stabilized prior to sampling. Therefore, Ohio EPA considers the sample to be representative of ground water quality. However, there may be scenarios in the future where such results would not be considered sufficient evidence of stabilization and a sample result could be invalidated. Therefore, Ohio EPA recommends that the owner or operator increase the frequency of calibration of the water quality meter when it is to be used over such a long day of sampling.

- 2) Report detections between the MDL and PQL as estimated concentrations and utilize estimated detections in background data sets.

Some of the statistically significant increases above background for beryllium, cobalt and thallium described in Statement 1 below may simply be an artifact from the owner or operator not reporting MDLs and estimated results. If detections occurred between the MDL and the practical quantitation limit (PQL) in background wells WW-4 and WW-7 historically, the resulting estimated concentrations could potentially have been used to build a parametric prediction limit that would be higher than the PQL, and thus avoid unnecessary false positive demonstrations.

It should be noted that such "estimated" concentrations occurring in a downgradient well cannot be used to indicate a statistically significant increase, but rather any statistically significant increases in a downgradient well must be at or above the PQL. Therefore, Ohio EPA recommends that the owner or operator report detections between the MDL and PQL as "estimated concentrations," especially for upgradient, background wells.

- 3) Attempt to utilize beryllium, cobalt, thallium and vanadium data from unimpacted wells WW-1 and WW-8 as background data in accordance with OAC 3745-27-10(C)(5)(b) to build statistical limits for beryllium, cobalt, thallium and vanadium.

Since the owner or operator began complying in October 2009 with the requirement in OAC 3745-27-10(D)(5)(a)(i) to analyze all samples for parameters 1-66 semiannually, one or more statistically significant increases above background have occurred for beryllium, cobalt, thallium and vanadium at downgradient wells that appear to be unimpacted. The statistically significant increases in these four metals are thought to be caused by one or both of the following:

- a) Naturally-occurring spatial variability between upgradient and downgradient wells, with downgradient concentrations being naturally higher than upgradient.
- b) A small size background database for these metals.

- c) An artifact of the PQL(s) utilized or lack of utilization of estimated background detections between the MDL and PQL in building the statistical limit. See Recommendation 2 above.

Furthermore, given the assessment status of downgradient wells WW-2, WW-5, WW-9 and WW-10 and the uncertain status of downgradient wells WW-3R and WW-6R, intrawell analysis for those metals at WW-3R or WW-6R would not be appropriate at this time.

However, monitoring wells WW-1 and WW-8 appear to show similar variation in beryllium, cobalt, thallium and vanadium compared to other downgradient wells, but currently show no indication of impact to ground water as at the other downgradient wells. This is supported by the fact that WW-1 and WW-8 lay much further downgradient of the limits of waste than do WW-2, WW-3R, WW-5, WW-6R WW-9 and WW-10.

Therefore, in the interests of lowering the false positive rates and creating a more representative background, Ohio EPA recommends that the owner or operator make a demonstration in accordance with OAC 3745-27-10(C)(5)(b) that beryllium, cobalt, thallium and vanadium concentrations at wells WW-1 and WW-8 are as representative or more representative of unimpacted, background concentrations compared to those at WW-4 and WW-7.

It should be noted that prior to adding any results from WW-1 or WW-8 to the interwell background for beryllium, cobalt, thallium and vanadium, OAC 3745-27-10(C)(7)(g) requires that the data from wells WW-1 and WW-8 be statistically compared to the existing background data sets. Furthermore, OAC 3745-27-10(C)(7)(g) requires that if statistical differences between the WW-1/WW-8 data and the existing WW-4/WW-7 background data set are found, the owner or operator must get the Director's written approval to update the WW-1/WW-8 data into background.

Should the WW-1/WW-8 beryllium, cobalt, thallium and vanadium data be added to background, the highest value for each parameter among the new background data set could be used as a site-wide, unimpacted maximum for the facility, set as a non-parametric prediction limit.

Statements

- 1) Status regarding statistically significant changes from background.

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Results in the May 2011 report indicated statistically significant increases above background in downgradient ground water monitoring wells for the following well/parameter pairs:

- WW-1: thallium
- WW-2: cobalt
- WW-3R: beryllium, cobalt, thallium
- WW-6R: benzene, chloroethane, cobalt, potassium, thallium
- WW-8: cobalt

The statistical analysis plan states that the owner or operator is utilizing a 1-of-2 resampling plan for all parameters. Therefore, in accordance with OAC 3745-27-10(D)(7)(c)(i), the owner or operator has 180 days (October 31, 2011) to resample the wells/constituent pairs mentioned above and to submit a report documenting that the resample results are at or below their respective statistical limits.

If the 1-of-2 resampling for wells/constituent pairs mentioned above does not disprove the statistical increase, or the owner or operator otherwise elects to try to demonstrate that these statistically significant increases above background were false positives due to a source other than the landfill (i.e. error in the sampling, analysis, statistical evaluation or natural variation in ground water quality), then in accordance with OAC 3745-27-10(D)(7)(c)(ii), the owner or operator has two hundred ten days from initial sampling to make an alternate source demonstration to the Director of Ohio EPA and to receive approval from the Director of Ohio EPA or his authorized representative to continue detection monitoring in accordance with OAC 3745-27-10(D)(7)(c)(ii). Therefore, if the owner or operator does not obtain written approval from the Director to continue detection monitoring at WW-1, WW-2, WW-3R, WW-6R and WW-8 by November 29, 2011, the owner or operator must conduct a ground water quality assessment program by complying with paragraph (E) of OAC 3745-27-10 regarding the statistically significant increases at WW-1, WW-2, WW-3R, WW-6R and WW-8.

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 City of Westlake 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.

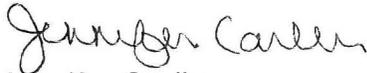
Please submit a response within 60 days of receipt of this letter, indicating how the facility has returned to compliance with the OAC Rule 3745-27-10(C)(10)(g) and OAC Rule 3745-27-10(E)(5)(a).

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If you have any technical questions regarding this review, please contact Steve Churchill of the Division of Drinking and Ground Waters at (614) 728-1225. Please submit all correspondence to Jennifer Carlin, Division of Materials and Waste Management, NEDO, Ohio EPA, 2110 East Aurora Road, Twinsburg, Ohio 44087.

If you have any questions regarding this letter, please feel free to contact me at (330) 963-1133, or e-mail me at "jennifer.carlin@epa.state.oh.us."

Sincerely,



Jennifer Carlin
Environmental Specialist
Division of Materials and Waste Management

JC/cl

cc: Mike Sekerak, Cuyahoga County Health Department
Fraser Hamilton, Earth Consulting, LTD
Stephen Churchill, DDAGW, CO
File: [Sowers/LAND/Westlake City LF/GRO/18]
DMWM # 4359