



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

September 16, 2013

**JEFFERSON COUNTY  
APEX SANITARY LANDFILL  
ENG**

Apex Environmental, LLC  
Dave Mathews, General Manager  
P.O. Box 157  
Amsterdam, OH 43903

**Subject: PTI Alteration, 2013 Odor Management Plan, Notice of Deficiency**

Dear Mr. Mathews:

On June 14, 2013, Ohio Environmental Protection Agency (Ohio EPA) received by electronic mail a submission titled ***PTI Alteration Request, Revised Odor Management Plan, Apex Sanitary Landfill*** (dated June 13, 2013). Apex Environmental, LLC (Apex) made the submission proposing to revise the Odor Management Plan (OMP) contained within Permit-to-Install No. 06-08438's Section C8 (Operational Information). Furthermore, the submission follows the June 3, 2013 Director's Final Findings and Orders (DFF&O's), which require Apex to implement activities and procedures designed to minimize and control landfill odors.

On July 24, 2013, representatives from Apex, Jefferson County General Health District (JCGHD), and Ohio EPA met to discuss the development and implementation of odor control and management procedures at Apex Sanitary Landfill. During the meeting, Apex summarized items contained within its June 13, 2013 permit alteration request, which includes procedures to reduce and control odor and respond to odor complaints. At that time, based on a preliminary review of the alteration request, Ohio EPA expressed to Apex the need to supply more descriptive narrative and detailed procedures within several sections of the OMP. Upon review of the submission, Ohio EPA has identified several deficient sections of the OMP. As a result, we cannot recommend concurrence with the proposed alteration at this time. Apex will need to revise and resubmit the OMP such that the sections identified below fully address the deficiencies noted by Ohio EPA and establish best management practices (BMPS) that will ensure that Apex operates its facility in compliance with applicable law regarding the control of odors.

**Odor Management Plan**

In the introduction to the OMP, Apex lists six sections for odor management. Ohio EPA recommends that Apex clarify that the goal of the OMP is to establish BMPs to ensure that Apex operates its facility in compliance with applicable law regarding the control of odors. Moreover, the OMP should indicate that the BMPs contained in the OMP are not exhaustive and, should the measures identified in the OMP fail to control odors in accordance with applicable law, Apex will promptly work to identify and implement additional measures to ensure compliance with applicable law. In addition, Apex may want to consider organizing the BMPs for odor control in two main categories: “Section 1 – BMPs Regarding the Control of Landfill Gas Emissions,” and “Section 2 – BMPs Regarding the Acceptance and Management of Potentially Odorous Waste.” Following the description of the odor control BMPs, Apex should discuss in a separate “Section 3” the odor complaint procedures and in a separate “Section 4” the procedures Apex will employ to provide information to the public regarding odor related issues.

<b>Proposed Sections for Odor Management Plan</b>	
<b>Section 1</b>	BMPs Regarding the Control of Landfill Gas Emissions (includes current Sections 1 and 4)
<b>Section 2</b>	BMPs Regarding the Acceptance and Management of Potentially Odorous Waste (includes current Sections 2, 3, and 5)
<b>Section 3</b>	Odor Monitoring and Complaint Procedures (includes current Section 6)
<b>Section 4</b>	Communication Strategy (new)

**Section 1 – Landfill Gas Control**

*Ohio EPA recommends that this discussion fall under proposed Section 1 – BMPs Regarding the Control of Landfill Gas Emissions.*

1. Flare contingencies – This section includes narrative on the evaluation, expansion, and operation of the gas collection and control system (GCCS). Please include protocols established to identify and respond to future outages of the GCCS flares. The narrative should explain how the three (3) flares are utilized and what contingencies have been established in response to an electrical outage or mechanical failure. The narrative should also clearly define stages to a time-critical response. Please provide for the timely reporting to Ohio EPA and JCGHD when a disruption in service of the flares has occurred.
2. Surface scanning – This section includes a reference to “routine surface scans.” Please include a description of the minimum frequency, locations, and scope of

surface scans to measure fugitive landfill gas emissions. This revision should clarify that the minimum frequency for surface scanning is monthly and all areas within the amassed waste, except the working face and haul roads, shall be monitored. Within areas of intermediate and transitional covers, the serpentine pattern shall be conducted at approximately 50-foot spacing rather than 100-foot spacing. Apex should include timing of remedial activities including tuning of wells and application of additional soil cover when the methane concentration threshold is triggered at 250 parts per million (ppm). In instances when methane concentrations exceed 250 ppm, Apex should take immediate action and re-monitor each location promptly until exceedances are no longer detected. Please provide for the timely reporting of monitoring results and activities to Ohio EPA and JCGHD.

3. Daily cover, intermediate cover, and transitional cover – These BMPs are discussed below under the “General Waste Handling and Disposal Practices” in Apex’s proposed OMP. Please consider relocating them to this section as BMPs that will be employed to control landfill gas emissions.
4. Construction practices – Apex should consider relocating this discussion since it involves the control of landfill gas emissions.
5. Installation of cover/capping materials – In light of the odor compliance issues that have occurred at the facility, Apex should discuss in detail the planned installation of additional cover materials including, but not limited to, compacted soil, synthetic cap materials (odor control blanket), and/or final cap, when identified levels of emissions or concentrations of methane or hydrogen sulfide are detected over specified periods of time during surface scans and monitoring performed at the facility. In describing the placement of compacted soil, please specify the thickness, density, and method of compaction.

## **Section 2 – General Waste Handling and Disposal Practices**

*This section includes narrative regarding the application of daily, intermediate, and transitional cover materials. Ohio EPA recommends that the items below be relocated to the section discussing the BMPs regarding the control of landfill gas emissions (Section 1).*

6. Alternative daily cover – As discussed during the meeting of July 24, 2013, Apex may consider the use of a tarp or other manufactured materials as an alternative

daily cover (ADC) material, which may facilitate timely adjustments to the working face size or leading edge of placed select waste. The actual authorization for the use of an ADC shall be proposed as a separate request prescribed in Rule 3745-27-19 of the Ohio Administrative Code, and the request should include a defined demonstration period and evaluation report prior to consideration for continued approval.

7. Screening and application of intermediate cover – As required by rule, Apex must apply and compact soils as intermediate cover in areas where waste is not to be deposited for at least thirty days. Please include narrative that describes the method of compaction and the referenced screening protocol (page C8-12) for intermediate cover to ensure soils have low permeability, good compactability, cohesiveness, relative uniform texture, and do not contain large objects. The screening protocol should demonstrate that resulting soil is a loam, silt loam, clay loam, silty clay loam, silty clay, or combination thereof, and large objects including rock fragments are reasonably removed. Ohio EPA recommends consideration for the increase of thickness from twelve (12) inches to twenty-four (24) inches.
8. Screening and application of transitional cover – As required by rule, Apex must place and compact soils as transitional cover where the facility has reached final elevations, which may minimize potential gas pathways and help support vegetative growth. Please include narrative that describes the method of compaction and the referenced screening protocol (page C8-12) for transitional cover to ensure soils have low permeability, good compactability, cohesiveness, relative uniform texture, and do not contain large objects. The screening protocol should demonstrate that resulting soil is a loam, silt loam, clay loam, silty clay loam, silty clay, or combination thereof, and large objects including rock fragments are reasonably removed. For the annual certification of recently placed transitional cover, representative test pits are typically dug to verify its thickness and soil quality. Please provide for the notification of Ohio EPA and JCGHD so that observations of future test pit exercises can be performed. In addition, please clarify that transitional cover is to be densely vegetated within twelve (12) months of soil placement.

The mass removal of excessive soil covers or the opening up of an area to place additional waste to the permitted maximum topography can result in the uncontrolled mass venting of landfill gas. Ohio EPA recommends including narrative stating that areas where transitional cover has been placed will not be disturbed by prohibiting future waste placement.

### **Section 3 – Sludge Management**

*Ohio EPA recommends that this discussion fall under proposed Section 2 – BMPs Regarding the Acceptance and Management of Potentially Odorous Waste.*

9. Pre-acceptance and handling procedures for sludge material – This section includes narrative regarding the acceptance and management of “sludge material.” Please define “sludge material” for purposes of the OMP. Secondly, the BMPs should discuss in detail the items required by Order 5 of the June 3, 2013 DFF&O’s such as the following elements: a sludge characterization study on all sludge materials, criteria for acceptance of such sludge materials, and an implementation schedule for appropriate handling procedures of sludge materials accepted for disposal. Please provide narrative that clearly describes the criteria for the acceptance and refusal of an odorous sludge material. During the meeting of July 24, 2013, you referenced a flow chart for the implementation of Apex’s internal Waste Analysis Plan (WAP). This flow chart should be amended and included in the OMP. The use of a headspace analysis should be included as a screening test within the WAP.

### **Section 5 – Odor Control Systems**

*Ohio EPA recommends that this discussion fall under proposed Section 2 – BMPs Regarding the Acceptance and Management of Potentially Odorous Waste.*

10. This section includes narrative regarding the odor control systems available to neutralize and reduce odors. While the systems are water-based, please clarify that the assorted odor control product distribution systems may or may not utilize “water only” in addition to varying ratios of odor neutralizing product mixed with water.

### **Section 6 – Apex Odor Complaint Received Team**

*Ohio EPA recommends that this discussion fall under proposed Section 3 – Odor Monitoring and Complaint Procedures.*

11. This section includes narrative regarding the role and reporting of the Odor Complaint Received (OCR) Team. Appendices are also included within the OMP that provide for the odor investigation protocols and reporting. Please include detailed narrative on the frequency, procedures, and reporting activities associated with investigating complaints and routine monitoring. For routine monitoring, Ohio

EPA recommends that the OCR Team consider prevailing wind direction and focus monitoring in areas downwind of the facility at minimum frequencies and durations that provide representative results. For complaint investigations, please clearly explain that all complaints will be investigated promptly. Reporting should include the following: date and time complaint received; complainant name; date, time, location, intensity, and duration of reported odor; date, time, and location of investigation; verifiable or unverifiable odor; and, if odors are detected, intensity and duration of odor and action taken by operator to mitigate odors. Please provide for the timely reporting of monitoring and complaint investigation results to Ohio EPA and JCGHD. Ohio EPA recommends developing a database that can be shared electronically so that information remains current, while meeting the monthly reporting required by Order 6 of the June 3, 2013 DFF&O's.

12. This section should be amended to include the telephone number for the odor complaint hotline operated by a third-party.

#### **Attachment C – OCR Team Training/Test Procedure Material**

13. This attachment includes narrative and flow charts outlining training and procedures used by the OCR Team. Currently, the OCR Team uses a Nasal Ranger and n-butanol method (ASTM E544) when investigating odors. While these methods are recognized as tools for evaluating odor, Ohio EPA recommends consideration of alternative detection methods. Since hydrogen sulfide is a common gas associated with landfill odors and has been detected in the communities surrounding Apex, Ohio EPA recommends the use of a Jerome Hydrogen Sulfide Analyzer (model J605 or 631-X) by the OCR Team to measure hydrogen sulfide. Ohio recommends that Apex consider conducting olfactory tests on OCR Team members to evaluate odor sensitivity of individuals (ASTM E544-99). Protocols should be developed to exclude anosmic and hypersensitive individuals from performing odor monitoring. In addition, Ohio EPA recommends developing procedures for odor monitoring as described in paragraph 11.

#### **Forms and Logs**

14. Several forms included in the OMP do not appear to capture all information required by the June 3, 2013 DFF&O's. Please revise the forms identified in the table below.

Attachment	Title	Update
Attachment E	Off-site Odor Monitoring Circuit Log	Include a column for odor duration. Since meteorological conditions will remain generally unchanged during a surveillance exercise, these categories can be summarized instead of repeating information. Ohio EPA also requests a key for the surveillance checkpoints that are reported as numbered locations.
Attachment F	Odor Complaint Resolution Form	Some of the missing information may be due to mislabeled sections. Please update the form to include the following: add date JCGHD received the complaint, delete type of complaint since the form is for odors only, revise "duration of complaint" to "duration of odor," revise "time offsite investigation began" to "arrival time of OCR Team," add location of odor, and add duration of odor. Sections I and VI reference different odor scales. Ohio EPA recommends replacing a numbered scale with understandable terms that describe the odor intensity.
Attachment G	Off-site Odor Discovery Form	Include odor duration.
Attachment I	Third-Party Odor Complaint Hotline Reports	Add "location of odor" to the hotline notification, since the address of the complainant may not necessarily be the location of the odor. Content of the monthly reporting should be expanded to include all complaint information and investigation results (see paragraph 11).

**Improved Communication**

*Ohio EPA recommends that this discussion fall under proposed Section 4 – Communication Strategy.*

15. During the meeting of July 24, 2013, Ohio EPA emphasized the importance of communication between Apex, JCGHD, the community, and Ohio EPA. The group discussed effective ways to communicate pertinent information, so that the community is aware of recent and future activities designed to mitigate odors, actions taken by Apex in response to confirmed detections, and planned construction activities that may cause odors. JCGHD and Ohio EPA offered support for these communication efforts, including opportunities for Apex to regularly update the community at board of health meetings. Please add a new section to the OMP that is specific to Apex's public outreach. Within this section, please discuss the measures that will be taken to provide advanced notification of construction and maintenance activities (i.e. installation of gas wells, cleaning leachate lines and sumps) that are designed to improve odor control although may temporarily cause offsite odors. This section should include the ways in which public awareness is promoted for the odor complaint hotline. In addition, this section should include information sharing opportunities such as a publicly accessible announcement board, website, and routine meetings with the community.

Apex must revise and submit the OMP such that the sections identified in this letter fully satisfy the orders contained within the June 3, 2013 DFF&O's. If you have any questions regarding this letter, please contact me by telephone at (740) 380-5440 or by email at [craig.walkenspaw@epa.ohio.gov](mailto:craig.walkenspaw@epa.ohio.gov).

Sincerely,



Craig Walkenspaw  
District Engineer  
Division of Materials and Waste Management

CW/mr

ec: Bruce Misselwitz, Jefferson County General Health District  
Bruce McCoy, CO-DMWM  
Dale Warner, SEDO-DMWM

cc: Rick Buffalini, Civil & Environmental Consultants, Inc.