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AIR QUALITY DIVISION

December 8, 2021

Mr. Mike Kovalchick  
 Michigan Department of Environment, Great Lakes, and Energy  
 Jackson District Office  
 Jackson State Office Building  
 301 Louis Glick Highway  
 Jackson, Michigan 49201  
*Sent via email*

Subject: **Arbor Hills Landfill, Inc.**  
 Response to November 10, 2021 Violation Notice

Dear Mr. Kovalchick:

A violation notice (VN) issued by Department of Environment, Great Lakes and Energy (“Department”; EGLE) dated November 10, 2021 was received by Arbor Hills Landfill, Inc.<sup>1</sup> in Northville, Michigan. Below please find a written response to each of the issues listed in the VN.

**BACKGROUND**

Arbor Hills Landfill, Inc. (“Arbor Hills”; Site) is an active municipal solid waste landfill operating in Washtenaw County, Michigan. The facility is subject to 40 CFR 62 Subpart OOO (40 CFR 60 Subpart WWW (the Landfill NSPS) was superseded on June 19, 2021 when 40 CFR 62 Subpart OOO became effective) and 40 CFR 63 Subpart AAAA (the Landfill NESHAP). An active gas collection and control system (GCCS) is operated at the facility. Extracted landfill gas (LFG) is either sent to the Arbor Hills Energy Gas-to-Energy Plant (AHE) for combustion in 4 gas turbines (3 of which are connected to heat recovery duct burners) or is controlled on-site by combustion in landfill-owned flares. These include two enclosed flares and one utility flare.

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<sup>1</sup> The owner of the landfill is Arbor Hills Landfill, Inc., not Green for Life, Arbor Hills Landfill, Inc. Please correct your records accordingly.

The November 10, 2021 VN alleges two violations. Both alleged violations are regarding the performance of LFG flares on specific dates during 2021. The first alleged violation relates to the design of the flare system, and the second relates to its operation.

**Response to the Violation Notice:**

For clarity, the Department's comments appear below in italics along with the responses to the issues in the order that they appear in the VN.

*Item 1: PTI 79-17: EU5000CFMFLARE Special Condition IX Other Requirements, 4; FGENCLOSEDFLARES-S2 Special Condition IX; Other Requirements 1; NESHAP Subpart AAAA: Municipal Solid Waste Landfills, 40 CFR 63.1955(c), and 63.1959(b)(2)(ii).*

*EGLE Comment: The control system must be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control system equipment.*

**Response:**

The following table is provided for clarity and reflects the regulatory citations listed by EGLE in Item 1.

<p><i>PTI 79-17: EU5000CFMFLARE Special Condition IX Other Requirements, 4</i></p> <p><i>4. The permittee shall comply with all applicable provisions of 40 CFR Part 63 Subpart A and AAAA "National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills as they apply to EU5000CFMFLARE. (40 CFR Part 63 Subpart A and AAAA)</i></p>
<p><i>FGENCLOSEDFLARES-S2 Special Condition IX; Other Requirements 1</i></p> <p><i>1. Compliance with 40 CFR Part 63, Subpart AAAA is determined in the same way it is determined for 40 CFR Part 60, Subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence. In addition, continuous parameter monitoring data collected under 40 CFR 60.756(b)(1), as specified in SC VI.1, are used to demonstrate compliance with the operating conditions for the enclosed flare. The permittee shall have developed and implemented a written SSM plan according to the provision in 40 CFR 63.6(e)(3) for FGENCLOSEDFLARES-S2. A copy of the SSM plan shall be maintained on site. (40 CFR 63.1960)</i></p>
<p><i>NESHAP Subpart AAAA: Municipal Solid Waste Landfills, 40 CFR 63.1955(c): At all times, beginning no later than September 27, 2021, the owner or operator must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the owner or operator to make any further efforts to reduce emissions if the requirements of this subpart have been achieved. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.</i></p>

*NESHAP Subpart AAAA: Municipal Solid Waste Landfills, 40 CFR 63.1959(b)(2)(ii): Collection system. Install and start up a collection and control system that captures the gas generated within the landfill as required by paragraphs (b)(2)(ii)(B) or (C) and (b)(2)(iii) of this section within 30 months after:*

*(A) The first annual report in which the NMOC emission rate equals or exceeds 50 Mg/yr, unless Tier 2 or Tier 3 sampling demonstrates that the NMOC emission rate is less than 50 Mg.*

*(B) An active collection system must:*

*(1) Be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control system equipment;*

*(2) Collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of 5 years or more if active; or 2 years or more if closed or at final grade;*

*(3) Collect gas at a sufficient extraction rate; and*

*(4) Be designed to minimize off-site migration of subsurface gas.*

In the VN EGLE accurately states that the combined flare capacity at Arbor Hills as determined by stack test is 11,200 scfm and that the landfill is currently generating approximately 10,000 scfm. As such, the assertion that the control system is not designed to handle the gas volume is incorrect because flare capacity exceeds gas generation. Further, the Site has a GCCS design plan prepared by a professional engineer that meets the requirements of the former Landfill New Source Performance Standards (40 CFR 60 Subpart WWW) and now the updated Landfill NESHAP (40 CFR 63 Subpart AAAA). Note that a recent update (October 2021) was submitted to MI EGLE for review and approval. Since the submittal of the October 2021 GCCS Plan, GFL has not received any correspondence from EGLE regarding the Plan.

To the extent that in citing 63.1959(b)(2)(ii), EGLE intended to broaden the scope of its comment regarding alleged gas collection shortfalls, the only provision in 63.1959(b)(2)(ii) that speaks to this issue is in subsection (B)(3) - Collect gas at a sufficient extraction rate. EGLE appears to reach its conclusion that the site isn't collecting gas at a sufficient rate by comparing the gas plant flow rate against the Site's flare flow rate when the plant is down and finding that the numbers aren't the same.

The NESHAP, however, provides only one specific compliance provision to demonstrate sufficient extraction and it isn't based on flow. Specifically, §63.1960(a)(3) states:

- For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with § 63.1959(b)(2)(ii)(B)(3), the owner or operator must measure gauge pressure in the gas collection header applied to each individual well monthly.

Some of the alleged collection shortfalls occurred before the revised Landfill NESHAP provisions became applicable, at a time when the facility was subject either to 40 CFR 60 Subpart WWW (Landfill NSPS) – the incident in April 2021, or, when the facility was subject to the Federal Plan (40 CFR 62 Subpart OOO) – the two incidents in August 2021.

However, both regulations have virtually identical language with respect to compliance provisions for sufficient flow rate determinations:

- §60.755(a)(3) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with § 60.752(b)(2)(ii)(A)(3), the owner or operator shall measure gauge pressure in the gas collection header at each individual well, monthly.

AND

- §62.16720(a)(3) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with §62.16714(b)(2)(iii), the owner or operator must measure gauge pressure in the gas collection header applied to each individual well monthly

USEPA, via the NESHAP or older NSPS regulatory provisions, therefore, doesn't look at total flow from the landfill on a macro scale when defining "sufficient extraction rate" for purposes of compliance. USEPA's compliance metric for sufficient extraction rate is whether there is enough vacuum present in the GCCS to collect gas from individual wellheads and keep them from going positive. The facility does perform the required monitoring of gauge pressure monthly in accordance with the regulation. Wellheads that measure a positive pressure (i.e., indication of insufficient extraction) are immediately adjusted and/or otherwise corrected to ensure that a negative pressure (operational standard for ensuring sufficient flow at a wellhead within the GCCS) is present.

EGLE has not provided any evidence of positive gas pressure at extraction wells, instead it has arbitrarily gauged compliance by a measure that is not supported by regulation.

EGLE asserts that "An adequately designed/properly operated flaring system should be able to provide the same level of vacuum to the wellfield and capture/burn similar levels of landfill gas as the AHE plant." Further, EGLE indicated that on the October 19 & 20 event, operating data provided by the company showed that applied vacuum on the landfill GCCS "failed to reach the necessary -80" W.C. [water column] which is the setpoint used by AHE during normal operations."

There is no permit condition requiring either the flare and gas plant must combust similar levels of gas or that the flare system must maintain -80 inches water column.

The notion that both the flare and power plant must be able to provide the same level of vacuum does not take in account the equipment used for each or the piping leading to it. When the plant operates along with the utility flare, the system efficiency equates to 0.02 inches water column vacuum per scfm (measured at the flare station) collected at the flare. When the flares operate alone (the gas plant is down) that changes to 0.015- or 0.007-inches water column vacuum per scfm depending on the number of flares operating. This means that the flares don't need to generate as much vacuum to collect a scfm of gas. It doesn't mean that there is an inherent design limitation at the flare station.

The set point for the vacuum for the plant is 80 inches W.C., which allows sufficient volume of LFG to preferentially be sent to the turbines and duct burners to satisfy design heat rates for operation. The vacuum for the flare blowers is set at 79 inches W.C. to prevent the flares from fighting for the gas going to the turbines, during periods when the plant and flares are operating concurrently. Setting the vacuum at equivalent setpoints would not allow the system to operate properly. Further, the vacuum setpoint changes at the flare station depending on the flare startup sequence. Keeping the vacuum at a fixed rate would cause blower stall conditions when flares are brought into and out of service causing the flares to shut down. The sequencing is intended to minimize flare disruption. It is not an indication of poor design or operation. Instead, it is a sound technical means to minimize flare downtime.

*Item 2: Rule 336.1910 (Rule 910).*

*Rule 910: An air-cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with these rules and existing law.*

*EGLE Comment: Any air cleaning device shall be installed, maintained and operated in a satisfactory manner.*

**Response:**

In the VN EGLE noted that “Flare 391 failed to start despite the full AHE shutdown for parts of October 19 and 20.” This assertion is not correct. Flare 391 did not “fail” to start. Flare 391 was intentionally disabled due to a malfunctioning flow meter. During an inspection prior to the unscheduled plant outage, Arbor Hills identified Flare 391 as having a faulty flow meter. The flow meter was removed and replaced upon discovery. However, after a few days, the replaced flow meter also began to malfunction and both flow meters were ultimately shipped offsite for testing and calibration. Unfortunately, while the flow meters were offsite for repair, the plant incurred an unscheduled outage. Since Flare 391 was without a functioning flow meter, Arbor Hills disabled the flare to ensure that it would not engage should the plant require it to be engaged. In addition to disabling the flare, an electrician was contacted by GFL and scheduled to investigate any other potential reasons why the flow meters would be malfunctioning. The electrician found a blown and replaced it. The repaired and calibrated flow meters were returned to Arbor Hills in late November and immediately installed upon receipt. Lastly, there is no permit requirement mandating the operation of the flow meters during plant shutdowns.

EGLE alleges that:

- *some of the data provided by the company may have been erroneous or otherwise unreliable. For example, AQD notes and picture from 7:00 p.m. on October 19, 2021 shows candlestick flare was not operating in violation of rule 910, although*

*data provided by company indicated flare was operating at a full 5000 cfm flow rate.*

The candlestick flare was operating normally during the date and time in question. Further, the instruments were correctly measuring flow and temperature and were not recording "erroneous or otherwise unreliable" data. For the event to occur as described by EGLE, the flare thermocouples (pilot and main flame), flow meter, and recorder had to be malfunctioning simultaneously. That all four devices would be malfunctioning at the same time is unlikely without an associated alarm or other record in the flare control system. There are, however, numerous circumstances that can cause a flame to not be visible from a distance including light angle, wind direction, gas quality, and gas flow. There are instances where a flare is combusting, and a visible flame is not necessarily present and all that can be observed is a heat shimmer. Lastly, we do acknowledge that it is possible that the flare reset in between time stamp readings and the downtime could have possibly been unrecorded, but this scenario is highly unlikely given that no other indication that flare shut down is present.

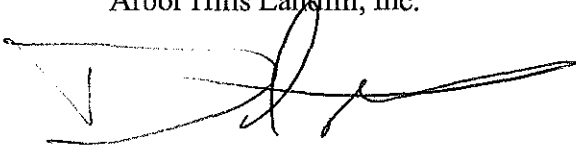
Currently, as agreed to with EGLE, Arbor Hills attempts to run each of the flares at least once per month as a means of a "system check". Based on "system checks", Arbor Hills can identify if there are any faulty parts or pieces that may be inhibiting a particular flare from running as it is designed to do. If a flare is identified as "not functioning" as designed, parts may be ordered, or a technician may be called out to identify the issue. Most recent system checks identified that the utility flare may benefit from the installation of a new, longer, thermocouple and new ignitor switch, which the site has already ordered and is planning to install by the end of the year or in January 2022. These steps will continue to be part of the routine maintenance of the flaring system and Arbor Hills will continue to be vigilant in assuring that the system is running optimally.

In light of the above responses, Arbor Hills respectfully requests that EGLE's November 10, 2021 Violation Notice be withdrawn.

Arbor Hills remains committed to maintaining the LFG flare system and assuring that it implements the operational practices outlined above to minimize odor impacts.

If you have any questions regarding this submittal, please contact me at (248) 412-0704.

Sincerely,  
Arbor Hills Landfill, Inc.



David Seegert  
General Manager

Cc/via e-mail: Mr. Clarke Lundell, GFL  
Ms. Tami Craig, GFL  
Mr. Paul Sgriccia, GFL  
Mr. Anthony Testa, GFL  
Ms. Sarah Marshall, USEPA  
Mr. Neil Gordon, Department of Attorney General  
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