

**Arbor Hills Landfill, Inc.**  
**Ridge Wood Elementary Hydrogen Sulfide (H<sub>2</sub>S) Monitoring: 24-hour average concentrations**  
**April 2022**

For the April 1 – 30, 2022 monitoring time period, the following is noted:

- 1) Equipment Operation
  - a. SPM Flex functioning and operations were within the manufacturer specified ranges except during the April 17 – 18 time period.
    - i. The pump on the Primary SPM Flex failed. The spare SPM Flex was installed on April 18.
    - ii. A total of 27 hours of data were lost: 15 hours on April 17; 12 hours on April 18. A code of “AH” was assigned to each day (SPM sample flow rate out of limits).
  - b. No other malfunctions or fault conditions occurred.
- 2) Data Downloading
  - a. No malfunctions or issues with data downloading were identified.
- 3) Meteorological Conditions
  - a. No unusual meteorological conditions such as strong winds, large storms, or excessive precipitation occurred during the time period.
- 4) Maintenance
  - a. Barr performed routine maintenance on April 1 (included troubleshooting camera operations) and April 11 (change out Chemcassette tape); minimal effect on the 24-hour average concentration for each time period.
  - b. On April 18, Barr conducted an emergency site visit to assess SPM Flex monitor performance. The pump on the Primary SPM Flex monitor had failed; the Spare SPM Flex was installed, and the Primary unit was sent to the manufacturer for repairs.
  - c. No other maintenance required/conducted during the time period.
- 5) Audits
  - a. No audits of the network were conducted during the time period.
- 6) Data – Average Air Concentrations
  - a. Average concentrations are calculated from 10-second readings obtained from the SPM Flex by the data logger.
  - b. The SPM Flex output range is 0.000 to 9.999 parts per million (0 to 9,999 parts per billion, ppb). Therefore, an average air concentration may be derived from a data set that includes one or more zero values.
  - c. A reported average concentration is a rounded value, for example:
    - i. A calculated average concentration of 0.0 to 0.9 ppb is identified as “<1 ppb”
    - ii. A calculated average concentration of 1.6 ppb is rounded to 2 ppb
    - iii. A calculated average concentration of 3.1 ppb is rounded to 3 ppb
- 7) Data Report (24-hour Average Concentrations)
  - a. No notifications required to be sent to Ridge Wood Elementary for elevated H<sub>2</sub>S.<sup>1</sup>
  - b. All 24-hour average concentrations are low; all < 1 ppb.<sup>2</sup>

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<sup>1</sup> Notifications to be sent to the Ridge Wood Elementary School if a 15-minute average concentration exceeds 750 ppb (0.75 ppm, USEPA Acute Exposure Guideline Value) or a 24-hour average concentration exceeds 72 ppb (0.072 ppm).

<sup>2</sup> The 24-hour guideline value from the Michigan EGLE is 72 ppb (~100 microgram per cubic meter of air). A 24-hour air concentration that is below the guideline value is interpreted to mean there is no appreciable risk to a person breathing the air.

Please contact the following Arbor Hills Landfill or Barr staff if you have questions about the air monitoring being conducted at the Ridge Wood Elementary School.

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However, a 24-hour air concentration that exceeds the guideline value does not mean that adverse health effects have or will occur as there are safety factors built into the guideline value to be protective of human health. But air concentrations that exceed the guideline value indicate that further review and assessment of the monitored air concentrations is needed.

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**Ridge Wood Elementary Hydrogen Sulfide (H2S) Monitoring**  
**April-2022**

Day	24-hr Average H2S Concentration (parts per billion; ppb)	Comment
4/1/22	<1	Barr on-site to perform routine maintenance.
4/2/22	<1	
4/3/22	<1	
4/4/22	<1	
4/5/22	<1	
4/6/22	<1	
4/7/22	<1	
4/8/22	<1	
4/9/22	<1	
4/10/22	<1	
4/11/22	<1	Barr on-site to perform routine maintenance.
4/12/22	<1	
4/13/22	<1	
4/14/22	<1	
4/15/22	<1	
4/16/22	<1	
4/17/22	AH	Missing data due to SPM Flex pump failure.
4/18/22	AH	Missing data due to SPM Flex pump failure. Barr on-site to perform unplanned maintenance. Spare SPM unit was installed.
4/19/22	<1	
4/20/22	<1	
4/21/22	<1	
4/22/22	<1	
4/23/22	<1	
4/24/22	<1	
4/25/22	<1	
4/26/22	<1	
4/27/22	<1	
4/28/22	<1	
4/29/22	<1	
4/30/22	<1	

[1] Null Monitoring Codes

AH

SPM Flex Sample Flow Rate Out of Limits