

**Arbor Hills Landfill, Inc.**  
**Ridge Wood Elementary Hydrogen Sulfide (H<sub>2</sub>S) Monitoring: 24-hour average concentrations**  
**November 2023**

For the November 1 – 30, 2023 monitoring time period, the following is noted:

- 1) Equipment Operation
  - a. SPM Flex functioning and operations were within the manufacturer specified ranges except as noted below.
  - b. On November 14 an instrument malfunction occurred. Barr was onsite to swap SPM Flex H<sub>2</sub>S monitor with a spare unit. Data code “AN”.
- 2) Data Downloading
  - a. On November 14 a sensor malfunction occurred. Barr was onsite to swap SPM Flex H<sub>2</sub>S monitor with a spare unit. Data code “AN”.
- 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 November 2. At this time Barr swapped SMP flex units for annual maintenance and calibration. Minimal effect on the 24-hour average concentration was observed.
  - b. Barr was on site on November 14 to replace SPM Flex H<sub>2</sub>S monitor with a spare unit. Malfunctioning unit sent in for repairs. Minimal effect on the 24-hour average concentration was observed.
  - c. Barr was on site on November 22 to replace SPM Flex H<sub>2</sub>S monitor with an alternate spare unit. Minimal effect on the 24-hour average concentration was observed.
- 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. 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.

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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**Ridge Wood Elementary Hydrogen Sulfide (H2S) Monitoring**  
**November-2023**

Day	24-hr Average H2S Concentration (parts per billion; ppb)	Comment
11/1/23	<1	
11/2/23	<1	Barr on-site to perform routine maintenance. Swapped SPM Flex units.
11/3/23	<1	
11/4/23	<1	
11/5/23	<1	
11/6/23	<1	
11/7/23	<1	
11/8/23	<1	
11/9/23	<1	
11/10/23	<1	
11/11/23	<1	
11/12/23	<1	
11/13/23	<1	
11/14/23	AN	Missing data due to machine / sensor malfunction. Barr on-site to swap SPM Flex units.
11/15/23	<1	
11/16/23	<1	
11/17/23	<1	
11/18/23	<1	
11/19/23	<1	
11/20/23	<1	
11/21/23	<1	
11/22/23	<1	Barr on-site to swap SPM Flex units.
11/23/23	<1	
11/24/23	<1	
11/25/23	<1	
11/26/23	<1	
11/27/23	<1	
11/28/23	<1	
11/29/23	<1	
11/30/23	<1	

[1] Null Monitoring Codes

AN

Missing data due to machine / sensor malfunction