

## **DHSS Daily Follow-Up Review of Air Monitoring Data from the Bridgeton Landfill Area, May 26-27, 2013**

The Department of Health and Senior Services (DHSS) has reviewed air quality screening data collected by the Department of Natural Resources (DNR) at Bridgeton Landfill on Sunday, May 26, and Monday, May 27, while construction work at the landfill was temporarily suspended due to adverse weather conditions. On April 23, DNR began routine, twice daily, surveillance of hydrogen sulfide, benzene, and odor levels around the entire periphery of the landfill. In addition, DNR has provided continuous monitoring of reduced sulfur compounds (reported as hydrogen sulfide), sulfur dioxide, carbon monoxide, and total volatile organic compounds (VOCs) at three fixed locations. DHSS has reviewed both sets of data to identify potential public health concerns for short-term health effects.

### Odors

Odors were generally mild until Monday, May 27, when DNR reported odors as being strong east-northeast of the landfill and in pockets south of the landfill. Winds were predominantly from the south.

- DNR detected strong odors at one location northeast of the landfill on May 27 using a Nasal Ranger olfactometer.
- DHSS continues to recommend that during periods of objectionable odor, sensitive individuals should stay indoors as much as possible, avoid outdoor exercise, and seek medical advice for any acute symptoms. Symptoms associated with exposure to strong odors include headache, nausea, and fatigue. Symptoms generally associated with strong odors typically disappear once the odors dissipate.

### Hydrogen Sulfide and Other Reduced Sulfur Compounds

Hydrogen sulfide concentrations were below levels of public health concern.

- The maximum concentration of hydrogen sulfide detected was 8.8 parts per billion (ppb). Hydrogen sulfide concentrations were detected by the Jerome meter, which is highly sensitive and specific to hydrogen sulfide.
- AreaRAE monitors detected low concentrations of reduced sulfur compounds for two hours on Sunday, May 26, at the monitoring location south of the landfill. These compounds are not just hydrogen sulfide but primarily another reduced sulfur compound with lower toxicity.

### Sulfur Dioxide

Average sulfur dioxide concentrations did not exceed levels of public health concern, except for limited time periods at two monitoring locations near the landfill.

- For one hour on May 26 and one hour on May 27, average sulfur dioxide concentrations at the monitoring location west of the landfill were 0.02-0.03 parts per million (ppm), exceeding a health-based guideline for acute exposure.
- For one hour on May 26, the average sulfur dioxide concentration at the monitoring location south of the landfill was 0.06 ppm, exceeding a health-based guideline for acute exposure.

- Exposure to these concentrations of sulfur dioxide may cause irritation and other short-term symptoms.
- Because the monitoring location south of the landfill was upwind of the landfill at the time of sampling, it is believed that sources of sulfur dioxide other than the landfill may have contributed to the elevated concentration detected at that location on May 26.

#### Benzene and Total VOCs

Benzene was not detected in ambient air, except for a limited time period at one surveillance location near the landfill.

- For ten minutes on the morning of May 27, benzene concentrations were 0.05- 0.1 ppm at one location south of the landfill, exceeding a health-based guideline. Because this location was upwind of the landfill at the time of sampling, it is believed that sources of benzene other than the landfill may have contributed to these elevated concentrations.
- Exposure to these concentrations of benzene may cause irritation and other short-term symptoms.
- Previous sampling has shown that, while several VOCs are present in the landfill source gas, benzene may be a primary VOC of public health concern.
- Total VOC concentrations were not at a level that indicates a need for compound-specific sampling.

#### Carbon Monoxide

Average carbon monoxide concentrations were well below levels of public health concern.