

DHSS Daily Follow-Up Review of Air Monitoring Data from the Bridgeton Landfill Area, June 10-13, 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 from the afternoon of June 10 to the afternoon of June 13, 2013. 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. Generally, samples are collected near the property boundary and dispersion is expected to reduce exposure downwind of the sample locations.

Odors

DNR reported moderate to moderate to strong odors at various locations north, south, and east of the landfill during this time period, depending on wind direction. Winds were predominantly from the northwest on June 10 and 13 and from the south on June 11-12.

- The DNR contractor detected very strong odors south of the landfill on June 10, moderate odors east and northeast of the landfill on June 11, moderate odors east of the landfill on June 12, and moderate odors south and east of the landfill on June 13 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 well below levels of public health concern.

- The maximum concentration of hydrogen sulfide detected was 8.8 parts per billion (ppb) during routine monitoring. Hydrogen sulfide concentrations were detected by the Jerome meter, which is highly sensitive and specific to hydrogen sulfide.
- On June 11-12, average concentrations of reduced sulfur compounds detected by the AreaRAE monitors located east and south of the landfill exceeded a health-based guideline for acute exposure to hydrogen sulfide. However, these compounds are not just hydrogen sulfide but primarily another reduced sulfur compound with lower toxicity.

Sulfur Dioxide

Average sulfur dioxide concentrations were well below levels of public health concern, except for a limited time period at one monitoring location near the landfill.

- For three hours on June 13, average sulfur dioxide concentrations ranged from 0.02 to 0.04 parts per million (ppm) and exceeded a health-based guideline for acute exposure at the monitoring location south of the landfill.
- Exposure to these concentrations of sulfur dioxide may cause irritation and other short-term symptoms.
- At other times and monitoring locations, average concentrations were less than 0.01 parts per million (ppm) and did not exceed health-based guidelines for acute exposure.

Benzene and Total VOCs

Benzene was not detected in ambient air at any of the surveillance locations around the landfill.

- 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.
- From the evening of June 12 to the morning of June 13, average total VOC concentrations exceeded levels that indicate a need for compound-specific sampling at monitoring locations east of the landfill.
- On June 10-11 at one monitor south of the landfill, June 11-12 at one monitor east of the landfill, and June 13 at one monitor south of the landfill, average total VOC concentrations periodically exceeded levels that indicate a need for compound-specific sampling. However, these elevated concentrations were not verified by other AreaRAE monitors stationed in the same locations.

Carbon Monoxide

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

Radiation Rates

Gamma radiation rates were well below levels of public health concern.

- Gamma radiation rates continue to be at levels that are at or near natural background levels.