DHSS Daily Follow-Up Review of Air Monitoring Data from the Bridgeton Landfill Area, June 6-10, 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 6 to the afternoon of June 10, 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, total volatile organic compounds (VOCs) and gamma radiation 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 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 north and west on June 6-7 and from the south and west on June 8-10.
- The DNR contractor detected moderate odors east and southeast of the landfill on June 6, moderate odors south of the landfill on June 7, moderate to strong odors north of the landfill on June 8, strong odors east and northeast of the landfill on June 9, and moderate to strong odors north and northeast of the landfill on June 10 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 8.5 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 8, AreaRAE monitors detected low concentrations of reduced sulfur compounds at the monitoring location west 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 were well below levels of public health concern.

- On June 9 and 10, sulfur dioxide concentrations were briefly detected at the monitoring location south of the landfill. However, 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.
- At monitoring locations east and 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.