DHSS Follow-Up Review of Air Monitoring Data from the Bridgeton Landfill Area, August 15 – August 19, 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 August 15 to the afternoon of August 19, 2013. On June 7, DHSS began issuing follow-up reviews of the daily air quality screening data on a twice-weekly basis.

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 light to moderate odors during this time period at locations south, southwest, and west of the landfill.

- Winds were predominantly from the east, southeast, and northeast until August 19, when winds were from the south and southwest.
- During this time period, the DNR contractor detected light to moderate odors south and southwest of the landfill on August 15-August 18 and light odors west of the landfill on August 19 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 5.1 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.
- For five hours on August 18 and three hours on August 19 at the monitoring location west of the landfill, average concentrations of reduced sulfur compounds exceeded a health-based guideline for acute exposure to hydrogen sulfide. However, these compounds detected by AreaRAE monitors are not just hydrogen sulfide but primarily another reduced sulfur compound with lower toxicity.

Sulfur Dioxide

Average sulfur dioxide concentrations were below levels of public health concern.

- Sulfur dioxide was briefly detected at the monitoring location west of the landfill. However, the average concentration of sulfur dioxide was 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.
- For one hour on August 16 at the monitoring location east of the landfill, the average total VOC concentration exceeded a level that indicates the need for compound-specific sampling.
- Average total VOC concentrations periodically exceeded levels that indicate a need for compound-specific sampling at other times at the monitoring locations east and west of the landfill. However, these elevated concentrations were not verified by other AreaRAE monitors stationed in the same locations.
- DNR is performing VOC compound-specific sampling in locations upwind and downwind of the landfill on a routine basis. The laboratory results are submitted for DHSS review of public health concerns.

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.