DHSS Review of Air Sample Data from the Bridgeton Landfill Area, July 5, 2013

The Department of Health and Senior Services (DHSS) has reviewed air sample data collected for the Department of Natural Resources (DNR) near Bridgeton Landfill on July 5, 2013. Samples were collected at two locations upwind of the landfill and two locations downwind of the landfill for laboratory determination of concentrations of volatile organic compounds (VOCs), aldehydes, reduced sulfur compounds, and sulfur dioxide. DHSS has reviewed this data for evaluation of potential public health concerns of short-term health effects.

VOCs

Concentrations of VOCs were well below levels of public health concern. Downwind of the landfill, 17 VOCs were detected in ambient air in concentrations that generally exceeded concentrations detected upwind of the landfill. However, these concentrations, which ranged from 0.08 parts per billion (ppb) to 24.4 ppb, did not exceed health-based screening levels for acute exposure.

Aldehydes

Concentrations of aldehydes were well below levels of public health concern. Downwind of the landfill, 6 aldehydes were detected which ranged in concentration from 0.166 ppb to 1.61 ppb and did not exceed health-based screening levels for acute exposure.

Reduced Sulfur Compounds

Reduced sulfur compounds were not detected in any of the samples. While low concentrations of hydrogen sulfide were detected by the Jerome meter in downwind locations on the same day, those concentrations were less than the detection limits of the laboratory analysis. During the 4-hour sample collection period, reduced sulfur compounds were also not detected by the AreaRAE monitor located in a nearby downwind location.

Sulfur Dioxide

Sulfur dioxide was detected in one of the upwind samples collected southwest of the landfill. Sulfur dioxide was not detected in the other upwind sampling location or by nearby AreaRAE monitors during the 4-hour sample collection period. The concentration detected (41.1 ppb) exceeded a health-based guideline for acute exposure lasting up to two weeks (10 ppb). Concentrations that exceed this screening level may cause irritation or respiratory effects in asthmatics or other sensitive individuals. However, it should be noted that concentrations above a screening level do not necessarily identify a public health risk is present, but that further investigation is warranted. While this concentration of sulfur dioxide was above the acute screening level for exposures lasting up to two weeks, it did not exceed the acute screening level for sulfur dioxide protective for exposures lasting up to eight hours (200 ppb) or the 1-hour or 3-hour National Ambient Air Quality Standards (75 ppb and 500 ppb, respectively).