DHSS Review of Air Sample Data from the
January 2015 Comprehensive Air Sampling at Bridgeton Landfill

The Missouri Department of Health and Senior Services (DHSS) has reviewed the air sample data from the January 27-29, 2015 comprehensive sampling event at Bridgeton Landfill. The complete data package was received by DHSS on April 17, 2015, and included a total of 82 ambient air samples collected from 12 sampling locations. DHSS evaluated ambient air samples collected from three onsite locations, from a landfill flare station, and from three locations upwind and five locations downwind from the site. DHSS reviewed the data for evaluation of potential public health concerns of short-term (acute) health effects. Source gas samples were also collected, but were not evaluated for direct exposure.

Samples were collected for a total of 173 chemicals including aldehydes, amines, ammonia, carboxylic acids, hydrogen cyanide, mercury (elemental), dioxins/furans, polynuclear aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), and reduced sulfur compounds. Of these, only aldehydes, carboxylic acids, dioxins/furans, PAHs, and VOCs were detected in the ambient air samples.

Aldehydes

Aldehydes were detected on-site, in the landfill flare sample, and upwind, and downwind of the landfill; however, the concentrations were below levels of public health concern.

- Of the 12 aldehydes sampled for, 3 were detected in the downwind sampling locations; however, these concentrations were low and did not exceed available health-based screening levels for acute exposure. One of the specific compounds detected does not have health-based screening levels available; however, only very low concentrations were detected and these detections are not expected to pose a public health risk.

Carboxylic Acids

Carboxylic acids were detected at one on-site sample location; however, concentrations were below levels of public health concern and no detections were found in ambient air downwind of the landfill.

Dioxins/Furans

Dioxins and furans were detected in the landfill flare sample, and upwind and downwind of the landfill; however, the concentrations were below levels of public health concern.

- Due to the absence of health-based screening levels for acute exposures, data were compared to a chronic screening level for dioxins/furans using the standard approach for evaluating human health risks from dioxin-like compounds. This provides a very health protective evaluation.
- Of the 17 dioxins and furans sampled for, 2 were detected in a downwind sampling location; however, these concentrations were low and did not exceed available health-based screening levels (for chronic exposure).

PAHs

PAHs were detected in the landfill flare sample, and upwind and downwind of the landfill; however, the concentrations were below levels of public health concern.

- Of the 16 PAHs sampled for, 2 were detected in a downwind sampling location; however, these concentrations were low and did not exceed available health-based screening levels for acute exposure. One of the specific compounds detected does not have health-based screening levels available; however, only a very low concentration was detected and this detection is not expected to pose a public health risk.

VOCs

VOCs were detected on-site, in the landfill flare sample, and upwind and downwind of the landfill; however, the concentrations were below levels of public health concern.

- Of the 75 VOCs sampled for, 28 were detected in the downwind sampling locations; however, these concentrations were low and did not exceed available health-based screening levels for acute exposure. Only a few of the specific compounds detected do not have health-based screening levels available; however, only very low concentrations were detected and these detections are not expected to pose a public health risk.