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.