Fugitive Emissions

Air Quality

What are Fugitive Emissions?

The term "fugitive emission" means the emission of any air contaminant into the open air from nonpoint sources rather than definable point sources such as a stack or air pollution control equipment.

Examples of nonpoint sources include open fields, unpaved roadways, construction sites, gravel quarries, grain bins and storage piles. The most common form of fugitive emissions is "**dust**."

In Kentucky, the Division for Air Quality (DAQ) regulates sources of fugitive emissions under Kentucky Administrative Regulation (KAR) Section 401 KAR 63:010. This regulation can be viewed in full at https://apps.legislature.ky.gov/law/kar/401/063/010.pdf. This fact sheet aims to provide guidance and clarify the rules pertaining to fugitive emissions. Additional sources of information, as well as who to contact for further help, are noted on the last page.

Who is Affected by the Fugitive Emissions Regulation?

Kentucky's fugitive emissions regulation applies to any person, entity or facility with an apparatus, operation or road that emits or may emit fugitive emissions. These sources must minimize the effects of activities that cause emissions to be released. It is important to note, however, that DAQs fugitive emissions regulation shall not apply to activities such as tilling and fertilizing farmland.

What are the Facility Requirements?

Facilities and businesses that cause fugitive emissions are responsible for reducing and controlling the amount released. Furthermore, in order to comply with state and federal regulations, fugitive emissions must meet air quality standards if traveling beyond the property line where it originated. Fugitive emissions regulations utilize the Environmental Protection Agency's (EPA) Method 22 "Visual Determination of Fugitive Emissions". Method 22 is used to determine compliance with property line standards. Through this method, viewers position themselves to have an unobstructed view of potential emissions. If visible emissions are observed, then the viewer measures the duration of time visible emissions were present during the observation period. There is no certification required to conduct Method 22, but it is highly recommended to participate in online training and follow EPA's general procedures for using this method. For more information, visit https://www.epa.gov/emc/method-22-visual-determination-fugitive-emissions.

Sources of Fugitive Emissions

Fact: Unpaved roads produce about 10 million tons of particulate matter air pollution each year in the United States.

Significant sources of fugitive emissions include haul roads, construction sites, quarries, croplands, and grain bins. Haul roads and other unpaved roads, however, are the largest single source. When vehicles travel down an unpaved road, they create fugitive emissions. Emissions caused by hauling can be minimized by using water or gravel as a means of dust suppression.

Complaints and Violations

DAQ receives an average of 250 complaints each year for fugitive dust emissions. Complaints and violations for excessive dust are typically related to precipitation patterns. During the summer months and periods of prolonged drought, the number of complaints and violations generally increase.

Why Control Fugitive Emissions?

Controlling fugitive emissions is primarily a matter of safety. On unpaved roads, fugitive emissions reduce visibility, increase accidents, and add to the costs of cleaning vehicles, equipment, and structures. Excessive emissions can also damage vegetation and reduce crop production. In severe cases, it can interfere with plant growth by clogging pores and reducing light interception. Excessive emissions also diminish property and land values.

Although generally not toxic, fugitive emissions can cause health problems, alone or in combination with other air pollutants. Infants, the elderly and people with respiratory problems are the most likely to be affected. In addition, excessive emissions at a worksite can create more hassle for the foreman. If fugitive emissions leave the project boundaries because of a lack of control measures, then there will certainly be more complaints from neighbors, increased inspections from regional field offices and potential for fines.

Fact: Fugitive emissions affect more than those within close proximity to your location. A model of fugitive emissions imports developed by researchers from Harvard and NASA shows that very "fine dust can be transported over long distances – from Asia to North America, and from North Africa to Florida, and all the way around the world to Canada and the U.S."

Developing a Prevention and Control Plan

- Identify all potential fugitive emission sources.
- Start with a facility site-plan map and record all paved and unpaved haul roads, stockpiles, material transfer points, parking lots, staging areas and any other areas subject to wind erosion.
- Study daily traffic volumes and determine whether roads and open areas are used frequently or occasionally.
- Determine frequency of application for each source and each control method.
- Record all emission control activities on a checklist, along with the daily weather information, such as wind speed, wind direction, temperature and rainfall.
- Monitor all emission control efforts. Regular monitoring ensures that control measures are adequate.
- Use a self-inspection checklist to help incorporate the routine tasks of fugitive emission control and to serve as a daily record of control measures.

Ways to Control Fugitive Emissions

Depending on the facility and operations in question, numerous techniques can be used to help control fugitive emissions. Control methods can include:

- windbreaks and barriers;
- frequent water and/or approved environmental friendly chemical applications;
- posted and enforced speed limits;
- control of vehicle access;
- covering of open piles and trucks;
- use of gravel or water at site exit points to remove caked-on dirt;
- washing equipment at the end of the day prior to site removal;
- wet sweeping of public thoroughfares.

Additional Information

- **U.S. Environmental Protection Agency, Office of Air and Radiation:** www.epa.gov
- **National Small Business Environmental Assistance Program:** https://nationalsbeap.org/
- **California Air Resources Board:** http://www.arb.ca.gov/pm/fugitivedust_large.pdf
- **Idaho Department of Environmental Quality:** https://www.deq.idaho.gov/air-quality/
- **Nebraska Department of Environmental Quality:** http://www.deq.state.ne.us/Publica.nsf/0/48b60f1d4f66c38e05256c55007724ce?OpenDocument
- **University of Missouri Extension:** http://extension.missouri.edu/p/G1885
- **Environmental Protection Agency Method 22 Guidance:** Method 22 - Visual Determination of Fugitive Emissions | Air Emission Measurement Center (EMC) US EPA

Kentucky Division of Compliance Assistance

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