

Instruction Sheet DEP7007HH Haul Roads

This form gathers general information about haul roads to determine the amount of emissions generated by use of these haul roads.

Source Name: Enter the name of the facility.

KY EIS (AFS) #: Enter the Kentucky Emissions Inventory Section identification number of the facility. The KY EIS number follows the format: 21-____-_____. A new facility will not have a KY EIS number.

Permit #: Enter the permit number of the permitted facility. This number is found on the front page of the permit. A new facility will not have a permit number.

Agency Interest (AI) ID: Enter the agency interest number of the facility. This number is found on the front page of the permit. A new facility will not have an agency interest number.

Date: Enter the date the form was completed. If the form is being revised, enter the date the form was revised.

Section HH.1: Haul Roads

HH.1A: Unpaved Haul Roads

The emission fraction will be determined using AP-42 Chapter 13.2.2 Equations (1a) & (2):

$$E = \left[k \left(\frac{s}{12} \right)^a \left(\frac{W}{3} \right)^b \right] \left[\frac{365 - P}{365} \right]$$

E = size specific emission factor (lb/VMT)

k, a, b = empirical constants

s = surface material silt content (%)

W = mean vehicle weight (tons)

P = number of days in a year with at least 0.01 in of precipitation

Empirical Constants (from AP-42 Table 13.2.2-2):

k(PM) = 4.9

k(PM₁₀) = 1.5

k(PM_{2.5}) = .15

a(PM) = 0.7

a(PM₁₀) = 0.9

a(PM_{2.5}) = 0.9

b = 0.45

Average number of Days in a year with 0.1 inches of Precipitation (P): Enter the average number of days in a year with 0.01 inches of precipitation.

Mean Vehicle Weight (W): Enter the mean vehicle weight in tons.

Surface Material Silt Content(s): Enter the surface material silt content as a percentage.

Haul Road Length: Enter the haul road length in miles.

Maximum Vehicle Miles Traveled in a Year: Enter the maximum vehicle miles traveled in a year.

Describe the dust control method for unpaved haul road(s): Enter a description of the dust control method used for unpaved haul roads.

HH.1B: Paved Haul Roads

The emission factor will be determined using AP-42 Chapter 13.2.1 Equation (2):

$$E = [(k)sL^{0.91} * W^{1.02}](1 - \left(\frac{P}{4N}\right))$$

E = size specific emission factor (lb/VMT)

sL = road surface silt loading (g/m²)

W = mean vehicle weight (tons)

P = number of days in a year with at least 0.01 in of precipitation

N = 365

k = empirical constant (lb/VMT)

Empirical Constants (from AP-42 Table 13.2.1-1):

k(PM) = 0.011

k(PM₁₀) = 0.0022

k(PM_{2.5}) = 0.00054

Average number of days in a year with 0.01 inches of Precipitation (P): Enter the average number of days in a year with 0.01 inches of precipitation.

Mean Vehicle Weight (W): Enter the mean vehicle weight in tons.

Road Surface Silt Loading (sL): Enter the road surface silt loading in grams per meter squared.

Haul Road Length: Record the haul road length in miles.

Maximum Vehicle Miles Traveled in a Year: Enter the maximum vehicle miles traveled in a year.

Describe the dust control method for paved haul road(s): Enter a description of the dust control method used for paved haul roads.

Section HH.2: Yard Area (Aggregate Handling and Storage Piles)

The emission factor will be determined using AP-42 Chapter 13.2.4 Equation (1):

$$E = k(0.0032) \left[\frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \right]$$

E = emission factor (lb/ton)

k = empirical constants

U = mean wind speed, miles per hour (mph)

M = material moisture content (%), 0.25-4.8

Empirical Constants (from AP-42 13.2.4-3):

k(PM) = 0.74

k(PM₁₀) = 0.35

k(PM_{2.5}) = 0.053

Average number of days in a year with 0.01 inches of Precipitation (P): Enter the average number of days in a year with 0.01 inches of precipitation.

Mean Wind Speed (U): Enter the mean wind speed in miles per hour.

Material Moisture Content (M): Record the material moisture content as a percentage.

Describe the dust control method for yard area: Enter a description of the dust control method for yard area.

Section HH.3: Notes, Comments, and Explanations

Use this sheet provide additional notes, comments, or explanations on the information provided in Sections HH.1 and HH.2.