

Source Category:	Residential Household Waste Open Burning
SCC Code:	2610030000
Pollutants of Concern:	PM-10, PM-2.5

How is the PM National Emission Inventory developed for this category?

Current Methodology (see also the link to the NEI Methodology Description):

- EPA developed emission estimates for residential MSW burning (backyard barrel burning) by first estimating the amount of waste generated for each county in the United States. We used a national average per capita waste generation rate of 3.31 lbs/person/day to estimate the amount of waste generated. This rate was adjusted (non-combustibles (glass and metals) and yard waste were subtracted out) to reflect the actual amount of household residential waste subject to being burned.
- We then applied this factor to the portion of the county's total population that is considered rural, since open burning is generally not practiced in urban areas. The rural and urban split was based on 1990 Census data.
- For rural populations, EPA estimates that 25 to 32 percent of the municipal waste generated is burned. We used a value of 28 percent for the nation, and applied this correction factor to the total amount of waste generated.
- EPA used this waste and emission factors to determine the emissions by county. Emission factors for PM were taken from *Evaluation of Emissions from the Open Burning of Household Waste in Barrels*, U.S. EPA, Office of Research and Development, November 1997; all other pollutants, AP-42, Section 2.5, Table 2.5-1
- EPA accounted for controls (or burning bans) by assuming that no burning takes place in counties where the urban population exceeds 80 percent of the total population (i.e., urban plus rural). We zeroed out open burning emissions to these counties.

Current Variables/Assumptions Used:

- National average per-capita waste generation factor (3.31 lbs/person/day).
- County-level rural versus urban population fraction estimates. [*Census*]
- Estimated National average of 28% of municipal waste is burned. [*Emission Characteristics of Burn Barrels (TRRCPO, 1994)*]
- Zero open burning emissions attributed to counties with >80% urban population. [*Census*]

Uncertainties / Shortcomings of Current Methods:

- National estimates of municipal solid waste burning on a per-capita basis are representative, and there are probably not many cost-effective improvements that could be made to these emission estimates on a National-level. These estimates may not represent the correct activity at any specific county level.

How can State, Local, and Tribal agencies improve upon this methodology?

- More specific local data on counties or municipalities that have burning bans and local data on how well those bans are enforced will provide an improved adjustment to the national average factors applied for the national inventory. This information may be available from State/Local/Tribal Air Agency or Solid Waste Management Organization.
- In areas where open burning of municipal waste is allowed, a local survey of households would improve the per capita estimate of the amount of waste burned. (How many people burn, how much waste)
- Sufficient information may be available through local waste management departments, and if these local authorities have a good understanding of the contribution of open burning to overall waste management activities a specific household survey would not be necessary.

Where can I find Additional Information and Guidance?

EPA Contact: Mr. Roy Huntley
 Emission Factor and Inventory Group
 U.S. Environmental Protection Agency
 D205-01
 Research Triangle Park, NC 27711
 E-mail: huntley.roy@epa.gov
 Telephone: 919 541-1060

AP-42, Section 2.5	http://www.epa.gov/ttn/chief/ap42/ch02/final/c02s05.pdf
Area Source Emissions Model	http://www.epa.gov/ttn/chief/software/asem/index.html
Characterization of Municipal Solid Waste in the U.S.	http://www.epa.gov/epaoswer/non-hw/muncpl/msw99.htm
County Level Emission Density Maps for this Source Category	http://www.epa.gov/ttn/chief/eiip/pm25inventory/densitymaps.pdf
EIIP Document on Conducting Surveys	http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii24.pdf
EIIP Document on Open Burning	http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii16_apr2001.pdf
NEI Inventory Methodology Description	ftp://ftp.epa.gov/EmisInventory/finalnei99ver2/criteria/ or http://www.epa.gov/ttn/chief/eidocs/partsec5_opbrn.pdf