

METHANE PRODUCTION AND DISPERSION AROUND LANDFILL SITES

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EXTENDED ABSTRACT

Methane production rates that have been estimated by a biogas production model are combined with an air dispersion model, in order to determine the spatial distribution of methane around landfill sites. The model we have used to estimate the production rate is called MICROGEN-PLUS and it is a new version of the MICROGEN-MGM model. The methane production rate from a unit mass of waste (MICROGEN) is multiplied with the daily mass of waste that is landfilled, in order to estimate the daily methane production rate. These daily rates are then combined to estimate methane production rate from the entire landfill. Using the meteorological model CALMET, in conjunction with the dispersion model CALPUFF, methane concentration around the landfills can then be determined. The performance of this methodology is evaluated by comparing measured concentrations with model predictions.

Key words: Solid waste, municipal refuse, landfill, methane, dispersion.