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METHANE AS ODOR INDEX IN LANDFILL SITES

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ABSTRACT

Biogas odor is caused by a number of trace chemical species. The qualitative and quantitative determination of all these species is very difficult due to their extremely low concentrations. The biodegradation of waste in landfill sites is a very complicate procedure, therefore, the collection of air samples from the top of a landfill may fail to estimate correctly the odors produced from the entire site. For this reason, although methane –one of the main biogas component - is odorless, it could be used as odor index around landfill sites. In this paper, the methane production rate that is already estimated from biogas production models is combined with an air dispersion model in order to determine the spatial dilution of methane. Similar dilutions are expected for trace chemical species of biogas. Based on the desired percent dilution the acceptable distance between new landfills and residential areas can be determined.