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AN INDUSTRIAL LEACHATE TREATMENT SYSTEM BASED ON THE FILTER-BED TECHNIQUE

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ABSTRACT

The treatment of leachate from municipal solid waste (MSW) landfills has been in focus during the last decade. Many different types of treatment systems have been established including co-treatment with municipal wastewater. This, however, has been not favoured in Sweden due to the difficulties in optimizing the treatment process and utilizing of the excess sludge. As a result of the recommendations of the Swedish Environmental Protection Authority, large number of *in-situ* treatment plants has been constructed in MSW landfills. Peat has shown to be an attractive filter media since it is a cheap and widely available natural material. Various studies have demonstrated that peat is capable to remove pollutants from wastewaters and leachate. However, only a few studies have been directed towards leachate treatment from industrial landfills.

The main objective of the following project is to develop a treatment method for leachate, generated in the landfill that contains discarded electrical and electronic equipment as well as residues from the recycling industry (e.g. car wrecking). It is investigated whether the mixture of peat and carbon-rich ash could be utilized as a filter material in the filter-bed, providing a low cost and simple technology for the treatment of the industrial leachate. The paper describes the design of the treatment system, and its start-up and operation during different seasons. The importance of the attempts to document the details of construction, operational parameters, performance and efficiency of the treatment plant are also discussed. The preliminary results are presented in the paper and contribute valuable information in order to optimize such a treatment system.