

STUDIES ON THE POLLUTION PARAMETERS OF LEACHATE FROM AMPANG LANDFILL

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ABSTRACT

In the first part of the study, the characteristics of the leachate from Ampang landfill, collected before and after the landfill closure was analysed. In general, the characteristics of the Ampang landfill leachate was found to be typical of other landfill leachates in the Klang Valley. The analysis reveals that the Ampang landfill leachate during its active life had high contents of sodium, potassium, chloride and ferum, with concentrations of 687 ppm, 785 ppm, 2500 ppm and 45 ppm respectively. Generally and as expected, the leachate collected before the landfill closure was found to be more concentrated and contains more contaminants compared to the leachate collected after the landfill was closed. Although the landfill have been closed for more than one and a half years, most of the leachate parameters were still found to exceed the Standard A of Sewage and Industrial Effluents, Regulation 1979 (EQA 1974) except for zinc and copper.

Subsequently, to determine the pollution effect of the leachate, water samples from eight sampling stations along the nearby Michu (S1, S2, S3 and S4 stations) and Langat rivers (C2 station) were analysed for its physical, chemical and microbiological properties. The COD and BOD values of the water samples were recorded in the range between 25.0-193.4 mg/l and 2.07-13.6 mg/l respectively and most of the stations exceeded the limit set in National Water Quality Standard for Class II A. The highest COD and BOD concentrations were observed at station C2 (193.4 mg/l) and S3 (13.6 mg/l). The highest TSS concentration was found to be at the station nearest to the landfill (S1) (149.2 mg/l) and the TSS concentration obtained at station S1, S2 and S4 were found to exceed the limit set in the National Water Quality Standard for Class IIA. Water samples collected at the station nearest to the landfill (S1) also showed the highest concentration of ammoniacal nitrogen (20.22 ppm), water hardness (62.9 ppm) and total alkalinity (89.8 ppm). Leachate was found to be the main contaminant at S1 station. Sulphite concentration was observed to be the highest at station S2 (2.9 ppm). The sources of pollution along Sg Michu are the garbage disposal and

sewage contamination caused by the residents staying along Sg Michu. Whereas the main source of pollution at Sg Langat is industrial discharges.

The fecal coliform and Salmonella-Shigella count indicates that the Michu and Langat rivers are contaminated. The heavy metal analysis shows the metal contents in the Michu and Langat rivers are generally low, within the National Water Quality Standard for Class IIA, and do not cause much concern, except for ferum and magnesium which were above this standard. However, water from Sg Langat, after going through water treatment processes was found to be within the WHO's Guidelines for Drinking Water and safe for consumption.

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