

HEAVY METALS OF LANDFILL LEACHATE IN KLOTOK KEDIRI, EAST JAVA

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Abstract: This study aims to determine the content of heavy metals from waste landfill leachate Klotok Kediri. Samples using leachate from the leachate treatment plant with a collection type is composite sample. Sampling point means S 07°49.017' E 111°494', S 07°49.020' E 111°492', S 07°49.023 ' E 111°493' and S 07°49.023' E 111°492'. Sampling was conducted in July-September 2013, in dry season. Heavy metal analysis performed using AAS. The results, found heavy metals Fe, Mn, Cu, Zn, Cr⁶⁺, Cr tot, Cd, Hg, Pb, Ni, Co, CN, As, Se and Sn. The heavy metal concentrations are respectively 2.010; 0.967; 0,040; 0,040; <0.002; <0.0269; <0.0067; <0.0002; <0.00547; 0.093; 0.047; 0.018; 0.006; 0.571 and 1.164 mg.L⁻¹. Metal concentrations were then compared with the appropriate quality standards Decree Head of BAPEDAL No. KEP/04/BAPEDAL/09/1995, showing the only Se was beyond the quality standard. The conclusion, this study was found 15 types of metals from landfill leachate Klotok Kediri. Metal concentration have beyond the quality standard is Se, which is 1.164 mg.L⁻¹ of 0.05 mg.L⁻¹ was allowed, whereas the other metal concentrations are still well below the standards. This characterisation was reasonable considering the landfill was operated is >10 years old.

Keywords: Concentration, dry season, heavy metals, Klotok Kediri, landfill leachate

INTRODUCTION

Landfilling of municipal waste is still a very important issue of the waste management system in the world. The main problem with landfills is the landfill leachate pollution. Furthermore, the landfill leachate problem is a long term issue, since the landfill leachate is formed long time after closing the site. From the start till the end there should be effective control and management for the production of leachate. Nowadays, sanitary landfilling more recommended than open dumping and controlled landfilling for way to eliminate municipal solid wastes (MSW) and minimize pollution impact landfill leachate to soil, ground water, and surface water in around area landfilling. Damanhuri [1] has statement, almost all TPA in Indonesia use open dumping system.