ABSTRAK

TPA Batu Layang dalam pengelolaan sampah menggunakan sistem *open dumping.* Sistem *open dumping* berpotensi menghasilkan lindi yang dapat mencemari lingkungan dan air tanah di sekitar TPA. Sebagian besar masyarakat di TPA Batu Layang masih menggunakan air tanah. Jika air tanah digunakan secara terus menerus oleh masyarakat maka berpotensi menyebabkan gangguan kesehatan. Oleh karena itu perlu ada upaya pengendalian lindi. Salah satu upaya pengendalian lindi dapat dilakukan adalah pemodelan lindi bawah permukaan tanah menggunakan metode geolistrik. Tujuan penelitian adalah menghasilkan pemodelan sebaran lindi bawah permukaan dalam bentuk 2 dimensi sebagai upaya mitigasi dari sebaran lindi. Adapun metode pemodelan sebaran lindi yang digunakan metode geolistrik konfigurasi wenner. Jumlah lintasan pengukuran geolistrik sebanyak 2 lintasan. Panjang lintasan masing-masing 195 meter dengan jarak antar spasi elektroda 5 meter. Data yang diperoleh berupa nilai resistivitas dianalisis menggunakan aplikasi RES2DinV. Perhitungan debit lindi menggunakan metode neraca air (*Water Balance Method*). Berdasarkan hasil inversi menggunakan *software* Res2Dinv didapatkan nilai resistivitas tanah terkontaminasi lindi pada lintasan 1 sebesar 1,19-13,3 Ωm dan lintasan 2 sebesar 0,500-10,2 Ωm. Tanah terkontaminasi lindi diduga tersebar sejauh 195 m. Kedalaman lindi terdalam diduga sampai kedalaman 39,4 m. Debit lindi tertinggi pada tahun 2020 sebesar 3.638,008 m^3/hari.

Kata kunci: Lindi; Geolistrik; TPA Batu Layang

ABSTRACT

Batu Layang TPA in waste management uses an open dumping system. The open dumping system has the potential to produce leachate which can pollute the environment and groundwater around the TPA. Most of the people in the Batu Layang TPA still use groundwater. If groundwater is used continuously by the community, it has the potential to cause health problems. Therefore there is a need for leachate control efforts. One of the leachate control efforts that can be carried out as an effort to mitigate the distribution of leachate is to model subsurface leachate using the geoelectric method. The aim of this research is to model subsurface leachate distribution in 2 dimensions. The leachate distribution modeling method uses the Wenner configuration geoelectric method. The number of geoelectrical measurement paths is 2 paths. The length of each track is 195 meters with a spacing of 5 meters between the electrodes. The data obtained in the form of resistivity values were analyzed using the RES2DinV application. Calculation of leachate discharge using the water balance method (Water Balance Method). Based on the inversion results using the Res2Dinv software, the resistivity value of leachate-contaminated soil on line 1 was 1,19-13,3 Ωm and track 2 was 0,500-10,2 Ωm. The leachate contaminated soil is thought to have spread as far as 195 m. The deepest leachate depth is estimated to be up to a depth of 39,4 m. The highest leachate discharge in 2020 was 3.638,008 m^3/day.

Keywords: *Leachate; Geoelectric; Batu Layang Landfill*