

**POTENSI PENCEMARAN AIR LINDI TERHADAP AIR TANAH DAN
TEKNIK PENGOLAHAN AIR LINDI DI TEMPAT PEMROSESAN AKHIR
(TPA) BANYUROTO DESA BANYUROTO, KECAMATAN NANGGULAN,
KABUPATEN KULON PROGO, D.I. YOGYAKARTA**

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INTISARI

Kabupaten Kulon Progo merupakan *pilot project* pengelolaan sampah di lokasi Tempat Pembuangan Akhir (TPA) sampah, menyusul banyaknya masalah sampah yang terjadi di kota Yogyakarta, Sleman, dan Bantul. TPA Banyuroto merupakan TPA yang berada di Desa Banyuroto. TPA Banyuroto terletak di sekitar permukiman warga. Adanya pertambahan penduduk yang semakin meningkat mengakibatkan jumlah sampah juga semakin banyak dan jumlah air lindi juga semakin meningkat sehingga dapat mencemari lingkungan di sekitar TPA. Tujuan penelitian ini adalah: (1) Mengetahui tingkat pencemaran air lindi (*leachate*) terhadap kualitas air bawah tanah di TPA Banyuroto, Desa Banyuroto (2) Merancang arahan pengolahan air lindi di TPA Banyuroto, Desa Banyuroto.

Metode yang digunakan dalam penelitian ini adalah metode survei dan pemetaan, skoring dan pengharkatan metode Le Grand. Metode Le Grand mempunyai 5 parameter fisik, yaitu: (1) Kedalaman muka airtanah (2) Kemiringan muka Airtanah (3) Daya serap diatas muka airtanah (4) Permeabilitas akuifer (5) Jarak horizontal terhadap sumber pencemar. Uji kualitas airtanah, air sungai dan air lindi dilakukan menggunakan alat EC meter dan pH meter. Parameter fisik berupa Warna, Suhu, Bau, Kekeruhan, dan TDS dan kimia berupa pH.

Hasil skoring tiap parameter dengan metode Le Grand pada 23 titik sumur *sampling*, di dapatkan kelas potensi pencemaran kecil (sangat sulit tercemar) dan sangat kecil (tidak mungkin tercemar). Semakin jauh letak sumur dari sumber pencemar maka semakin kecil kemungkinan untuk tercemar. Dari hasil uji kualitas airtanah dan airlindi menunjukkan bahwa kadar BOD dan COD melebihi baku mutu. Untuk arahan pengelolaan pada TPA Banyuroto adalah mendesain Instalasi Pengolahan Air Limbah. Desain kolam lindi yang dibuat adalah kolam inlet (penampung awal) dan kolam outlet (penampung akhir), kolam anaerob, kolam fakultatif, kolam maturasi dan penambahan eceng gondok untuk menurunkan kadar BOD dan COD.

Kata Kunci : Le Grand , Tingkat Pencemaran, Instalasi Pengolahan Air Limbah

**POTENTIAL LEACHATE POLLUTION TOWARD GROUNDWATER AND
LEACHATE TREATMENT AT BANYUROTO LANDFILL IN BANYUROTO
VILLAGE, NANGGULAN DISTRICT, KULON PROGO REGENCY,
SPECIAL REGION OF YOGYAKARTA**

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ABSTRACT

Kulon Progo reGENCY was a pilot project waste superintendence located in waste landfill, considering many waste issues occur in Yogyakarta city, Sleman and Bantul reGENCY. Banyuroto landfill was a landfill stated in Banyuroto village. Banyuroto landfill are located near residents settlement. Increased population growth causing the amount of waste and leachate water were increased which can polluted the environment around landfill area. The objective of this research are: (1) To determine leachate contamination degree towards Banyuroto landfill groundwater, Banyuroto village (2) To devise leachate treatment direction in Banyuroto disposal, Banyuroto village.

The methods used in this study were survey method and mapping, scoring and Le Grand method. Le Grand method has 5 physical parameters: (1) Depth of water – table (2) Hydraulic gradient (3) Sorption above of water – table (4) Hydraulic conductivity (5) Horizontal length to pollution source. Groundwater quality, river water, and leachate test was done by using EC meter and pH meter tools. Physical parameter in form of Color, Temperature, Odor, Turbidity, and TDS and chemical in the form of pH.

Scoring result for each parameter with Le Grand method in 23 wells sampling point resulted on small polluted potential class (very hard to pollute) and very small (impossible to pollute). The further wells distant from the source pollutants are the smaller possibility to polluted. Based from groundwater quality and leachate test result was showed that BOD and COD are beyond quality standards. For the direction of management in Banyuroto disposal are to design Wastewater Treatment Installation. Leachate pond design are made were inlet pond (initial container) and outlet pond (final container), while the pond to be optimized are anaerob pond, facultative pond, maturation pond and addition of water hyacinth to reduce levels of BOD and COD.

Key Word : Le Grand , Pollutant Degree, Wastewater Treatment Installation