

Analisis kualitas air tanah di sekitar unit pengolahan sampah (UPS): studi kasus: UPS Merdeka 2, Depok, Jawa Barat = Groundwater quality analysis around solid waste processing unit: case study: Merdeka 2 solid waste processing unit, Depok, West Java

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Abstrak

ABSTRACT

Unit Pengolahan Sampah UPS Merdeka 2 merupakan tempat pengolahan sampah organik yang terletak di Depok, Jawa Barat. UPS juga menghasilkan air lindi yang berasal dari sampah organik yang berpotensi mencemari air tanah dangkal sekitarnya. Penelitian ini bertujuan untuk mengetahui jumlah sampah masuk dan komposisi sampah di UPS, karakteristik air lindi yang dihasilkan sampah, serta kualitas air tanah disekitar UPS dengan parameter pH, suhu, BOD, COD, Nitrit, Nitrat, Amonia, KMnO₄, Besi Fe, dan Fecal Coliform. Kualitas air tanah dianalisis dengan mengetahui tingkat pencemaran berdasarkan indeks pencemar dan hubungan dengan variasi jarak dari UPS. Hasil penelitian menunjukkan bahwa jumlah sampah yang masuk ke UPS sebesar 0,954 ton/hari volume rata-rata sampah 1449,20 liter/hari. Kemudian dengan komposisi sampah organik sebesar 93,4 dan non-organik sebesar 6,4. Kemudian kualitas air lindi di UPS menunjukkan parameter pH, suhu, BOD dan COD melebihi batas baku mutu. kualitas air tanah dangkal di sekitar UPS dapat dilihat bahwa nilai rata-rata parameter pH, BOD, COD, Nitrat, masih berada diatas baku mutu dan rata-rata parameter lain masih berada di batas baku serta tidak terlihat hubungan yang signifikan antara variasi jarak dengan kualitas air tanah. Dapat disimpulkan bahwa indeks pencemar air tanah dangkal penduduk tergolong cemar ringan hingga cemar sedang.

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ABSTRACT

Waste Processing Unit UPS Merdeka 2 is an organic waste processing facility located in Depok, West Java. UPS also produces leachate that comes from organic waste has potential to pollute surrounding shallow groundwater. Purpose of this research is to know the amount of solid waste and solid waste composition at UPS, leachate characteristic, and ground water quality around UPS with pH, temperature, BOD, COD, Nitrite, Nitrate, Ammonia, KMnO₄, Fe and Fecal Coliform. Groundwater quality was analyzed by knowing pollution levels based on pollutant index and relation with distance variation from UPS. Results showed that the amount of waste that goes into the UPS is 0.954 ton day the average volume of waste is 1449.20 liters day. Then with the composition of organic waste of 93.4 and non organic by 6.4. Then leachate water quality at UPS shows the parameters of pH, temperature, BOD and COD exceed the quality standard. shallow groundwater quality around the UPS can be seen that the average value of pH, BOD, COD, Nitrate parameters is still above the standard and the average of other parameters is still within the standard limit and there is no significant relationship between the distance variation and the quality groundwater. Then the polluted groundwater pollutant index is classified as mild pollutants.