

Kerentanan Airtanah Dangkal Terhadap Pencemaran di Sekitar TPA Cipayung, Kota Depok = Vulnerability of Shallow Groundwater to Pollution Around Cipayung Landfill, Depok City

Yoga Akbar Rindang Wardana, author

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Abstrak

Apabila tercemar limbah, air tanah dangkal yang merupakan sumber air bersih akan menghambat ketersediaan air bersih. Sampah yang diterima dan dikelola oleh TPA Cipayung meningkat dari tahun 2019-2021. Air tanah dangkal di sekitar TPA Cipayung, yang masih digunakan warga sebagai sumber air, berpotensi tercemar aliran lindi. Oleh karena itu, penelitian ini bertujuan untuk mengetahui pola spasial kerentanan airtanah dangkal terhadap pencemaran berdasarkan model DRASTIC-LU dan SINTACS-LU serta kesesuaian antara kedua model dengan pencemaran airtanah dangkal di sekitar TPA Cipayung. Model DRASTIC-LU dan SINTACS-LU terdiri atas Kedalaman Muka Airtanah, Pengisian Airtanah, Media Akuifer, Media tanah, Topografi, Media Zona Tidak Jenuh, Konduktivitas Hidraulik, dan Penggunaan Tanah. Hasil penelitian menunjukkan Wilayah kerentanan airtanah dangkal terhadap pencemaran dengan kelas tinggi dan sangat tinggi pada model DRASTIC-LU dan SINTACS-LU cenderung memiliki pola yang mengelompok di bagian utara, barat, dan timur dari TPA Cipayung yang sebagian besar berada pada wilayah dengan jenis penggunaan tanah permukiman dan kedalaman muka air tanah (8-23 mdpt) sehingga memungkinkan pencemar mudah masuk ke dalam airtanah. Berdasarkan uji crosstab, kesesuaian wilayah kerentanan airtanah dangkal model DRASTIC-LU dan SINTACS-LU dengan pencemaran airtanah dangkal di sekitar TPA Cipayung cenderung menunjukkan kesesuaian. Akurasi sebesar 65% untuk model DRASTIC-LU dan 25% untuk model SINTACS-LU.

.....If it is polluted by sewage, shallow groundwater which is a source of clean water will hamper the availability of clean water. The waste received and managed by the Cipayung Landfill has increased from 2019 to 2021. The shallow groundwater around the Cipayung Landfill, which is still used by residents as a source of water, has the potential to be polluted by leachate flows. Therefore, this study aims to determine the spatial pattern of shallow groundwater vulnerability to pollution based on the DRASTIC-LU and SINTACS-LU models as well as the suitability between the two models with shallow groundwater pollution around Cipayung Landfill. The DRASTIC-LU and SINTACS-LU models consist of groundwater table depth, groundwater recharge, aquifer media, soil media, topography, unsaturated zone media, hydraulic conductivity and land use. The results showed that the susceptibility of shallow groundwater to pollution with high and very high classes in the DRASTIC-LU and SINTACS-LU models tended to have a clustered pattern in the northern, western, and eastern parts of the Cipayung landfill, most of which were in areas with land use types. settlements and the depth of the groundwater table (8-23 mdpt) to allow contaminants to easily enter the groundwater. Based on the crosstab test, the suitability of the DRASTIC-LU and SINTACS-LU shallow groundwater vulnerability areas with shallow groundwater contamination around Cipayung Landfill tends to show compatibility. Accuracy of 65% for the DRASTIC-LU model and 25% for the SINTACS-LU model.