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Study on heavy metal contamination distribution at active landfill at different depths and radiuses (Article)

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Abstract

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Landfilling is more preferable in Malaysia compared to another disposal method due to low cost, and availability of land. Other than solid waste, the percolation of water into the landfill leads to leachate formation. The migration of waste in leachate form may accelerate the heavy metal contamination of the soil one of the major concerns in landfilling. This study aimed in comparing soil samples taken from five different sites in Selangor of inert waste (Sungai Kertas, Kuang and Dengkil) and sanitary (Tanjung Dua Belas and Jeram) landfills at different depths (0-30 cm, 30-60 cm and 60-90 cm) and radiuses (5-10 m, 10-15 m and 15-20 m), for ten heavy metals (Al, Cr, Mn, Fe, Co, Ni, Cu, Zn, Cd and Pb) to find the risk of heavy metal movement from the upper layer cell into the deeper layer of the soil block. All the data were analysed using ICP-MS (Perkin Elmer NexION 300X). Al and Fe displayed high concentration at most of the sites especially at the deeper depth of the soil. © 2019, ALÖKI Kft., Budapest, Hungary.

Author keywords

Active sanitary landfills | Inorganic pollutant | Landfill | Leachate | Municipal solid waste | Urban pollution

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