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Impact of Leachate On Ground Water Quality Near Kodungaiyur Dumping Site, Chennai, Tamil Nadu, India

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Abstract: Tamil Nadu ranks first in urbanization among the fifteen major states in the country. According to the 2011 Census, Tamil Nadu has emerged as the state with the highest level of urbanization (43.86%) in the country. The urban population requires a wide range of urban services including water supply, sewerage and solid waste management. In most cities, the solid waste is dumped in open dumps without proper lining which affects the environmental media such as air, water and land. So, the present study was focused on the impact of leachate percolation on ground water quality. Leachate and ground water samples were collected from Kodungaiyur Dump site and the surrounding areas of within 1.5 Km radius. The leachate and ground water samples were tested for various physiochemical parameters and heavy metals. The heavy metals tested in the Leachate are Cd, Cr, Cu, Fe, Pb and Zn. The result of the analysis shows that there is a high concentration of EC, Cl⁻, TDS, NH₄⁺ and SO₄²⁻ present in ground water. This indicates that the groundwater is affected by leachate percolation and further the groundwater is undesirable for domestic water supply and other uses. Also some remedial measures are suggested to avoid further groundwater contamination due to leachate percolation and solid waste management technique.

Keywords: Solid Waste, Kodungaiyur Dumping site, Leachate percolation, Water Quality.

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