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Groundwater Recharge Through Infiltration Process: A Case Study of Umudike, Southeastern Nigeria

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ABSTRACT

Although water is a renewable resource for sustaining life and environment, excessive pumping of groundwater results in the ground water table being depleted. The major natural source of groundwater recharge is rainfall. In Umudike just like many other areas, the rate of natural recharge is lower than pumping rate. This is due to increasing economic and agricultural activities and also urbanization. Over exploitation of groundwater is a threat to the water quality and table and creates hydrological imbalance. This imbalance includes degradation in hydrological and hydro-chemical characteristics of the aquifer. Artificial recharge of water table aquifers becomes necessary to improve the hydrodynamic conditions of groundwater. A drop in piezometric level can be remedied by artificial recharge of groundwater through infiltration process using water from dams, lakes, rivers, runoff and sewage effluent. Results of water table survey conducted at Umudike show that it peaks at 85m (above sea level) before recharge and 95m after recharge. The recharge of groundwater is basically through rainfall and river water.

KEYWORDS

Artificial Recharge, Umudike, Infiltration, Water Table

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