

GEOCHEMISTRY OF GROUNDWATER IN DEVARAKONDA AREA, NALGONDA DISTRICT OF ANDHRA PRADESH, INDIA

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Abstract

Hydrogeochemical investigations were carried out in the Devarakonda area of Nalgonda District, Andhra Pradesh, India. Sixty groundwater samples were collected from bore wells to study the hydrogeochemistry of various ions. The area is occupied by granites of Archaean age. The present study was undertaken to understand the geochemical behavior of various ions in groundwater viz., Ca^{++} , Mg^{++} , Na^+ , K^+ , CO_3^{2-} , HCO_3^- , Cl^- , SO_4^{2-} , NO_3^- and F^- in addition to TDS, TH, pH and Ec. The nitrate concentration in groundwater varies from 3.1 to 125.5 mg/l. The studies revealed that nearly 53% of groundwater has more than 45 mg/l of nitrate which is the desirable limit for drinking purpose. It is observed that nitrate concentration is more in the Devarakonda township area. The fluoride concentration in groundwater varies from 0.5 to 2.86 mg/l which exceeds the desirable limit of 1.0 mg/l prescribed for drinking purpose in 38% of groundwater samples. In 28% of groundwater, its concentration exceeds 1.5 mg/l which is the permissible limit.

Keywords: Groundwater, Fluoride, Geochemistry, Major ions, Nitrate, Devarakonda, Andhra Pradesh, India