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Geochemistry of Groundwater and their relationship with Geological Formations

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Studied area is a tribal area of Warangal District, Andhra Pradesh (A.P.), India. This is about 1500 km^2 and has different types of rock formation such as granite gneisses, sandstones, pakhals and alluvium etc. This area was facing groundwater problems since two decades. A large number of shallow bore wells were drilled. These bore wells are discharging water from 10, 000 to 25, 000 lit/h. A large number of groundwater samples were collected and quantitatively analyzed. The results indicate that: (1) these groundwaters are classified as Na-Ca-Cl-HCO_3 and mixed water types. (2) Fluoride is more in groundwater of granite gneisses areas. (3) Concentrations of aqueous ionic species have changed with different rock formations. (4) Groundwaters of granite gneisses areas are more in Total Dissolved Solids (TDS). (5) TDS of groundwater and depths of bore wells have shown a good correlation.

Keywords: Groundwater Quality; Geological formation; Fluoride; India.