

## ASSESSMENT OF GROUNDWATER QUALITY FOR DRINKING AND IRRIGATION USES OF VEMULAPALLY WATERSHED, NALGONDA DISTRICT, TELANGANA STATE

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### Abstract

Fifteen groundwater samples were collected from a hard rock shallow aquifer in the Vemulapally Watershed, Nalgonda district based on geomorphological, geological and hydrogeological factors for evaluation of groundwater quality for drinking and irrigational use. The physico-chemical parameters and major ion chemistry of the collected samples were analyzed. (Wilcox, 1955) plot suggests that most of the samples are within the permissible limits of drinking and irrigational use. Further, the suitability of water for irrigation was determined by analyzing sodium adsorption ratio (SAR), residual sodium carbonate (RSC), sodium percent, Kelly's ratio (KR), soluble sodium percentage (SSP) and permeability index (PI). It has been concluded that, water from the study area is not suitable for drinking purposes and good for only irrigational use, apart from few samples which exceed the limits due to anthropogenic activities.

**Keywords:** Sodium absorption ratio (SAR), Kelly's ratio (KR), Residual sodium carbonate (RSC), Soluble sodium percentage (SSP) and Permeability index (PI).