

**“Hydrochemical evolution and aquifer studies of groundwater Nellikal
Watershed, Nalgonda District, Telangana State, India”.**

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Abstract: Groundwater resources and their quality are the most important aspects in their utilization for different purposes. Hydrochemical evolution reveals the rock-water interaction including the quality of water that is suitable for drinking, agriculture and industrial purposes. Other than rock-water interaction, water quality is also depends on anthropogenic influence like industrialization.

The major and trace elements of groundwater play a significant role in classifying and assessing water quality. Residual sodium carbonate (RSC) can be used as a criterion for finding the suitability of irrigation waters. It was observed that the criteria used in the classification of waters for a particular purpose considering the individual concentration may not find its suitability for other purposes and better results can be obtained only by considering the combined chemistry of all the ions rather than individual or paired ionic characters. Chemical classification also throws light on the concentration of various predominant cations, anions and their interrelationships. A number of techniques and methods have been developed to interpret the chemical data.

The study area is covered in Survey of India toposheet number 56 P/2 is part of Peddavura schist belt (PSB) which is a NW-SE trending narrow linear belt extending for over 60 km from Juvvigudem in the NW in Nalgonda district to Tummurukota in the SE in Guntur district southern part of the traverse. The PSB can be visualized as mega-xenoliths in the granite terrain. Its hook-shaped southerly extensions are concealed partly by the Proterozoic cover sequence, but spectacular windows of the PSB are exposed through the sedimentary cover near Nagarjuna Sagar.

Key words: Nellikal Watershed, Cuddapah basin, RSC, Aquifer, Mafic dykes.