

Geohydrologic Interpretation of Nuggihalli Schist belt and Surrounding Peninsular Gneissic Area in Karnataka, India by Remote Sensing Technique

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The Nuggihalli schist belt of Dharwad craton represents one of the oldest schist belts of early Precambrian era. The rocks are generally inhomogeneous due to varying degree of fracture, weathering and discontinuity. The use of satellite images in groundwater investigations gained impetus. Visual interpretation of Remotely Sensed data coupled with ground truth collection and a careful analysis have been found to be very effective geohydrologic interpretation particularly for groundwater exploration. Geohydrologic interpretation of landscape patterns recognised on landsat imagery (band 5 & 7) and interpreted from bedrock, drainage, lineament and vegetation maps reveal the spectral signatures of the natural surface covers in terms of grey tone values range between black (for H_2O) and white (for SiO_2 dominant Peninsular granitic gneiss). The percentage of reflectance value increases from white body cover to acidic rock cover. The abrupt change in the tonal value is noticed between water bodies and the surrounding Peninsular granitic gneiss only. This type of study has helped in constructing a conceptual geological model for the area for groundwater exploration.