

**GROUNDWATER POTENTIAL MODELLING IN HARD ROCK TERRAIN
THROUGH REMOTE SENSING AND GIS: A CASE STUDY FROM
PULIVENDULA -SANIVARIPALLI, KADAPA DISTRICT,
ANDHRA PRADESH.**

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Abstract

Groundwater constitutes an important source of water supply for various purposes, such as domestic, industrial and agricultural needs. In view of increasing demand of water resources, a greater emphasis is being laid for a planned and optimal development of water resources. An integrated study based on satellite image interpretation corroborated by limited field checks was carried out with a view to assess the natural water resources and groundwater potential zones covering an area of 720 sq km in Pulivendula-Sanivaripalli area, Kadapa district, Andhra Pradesh falling in Survey of India Toposheet No. 57J/03. Remote sensing and Geographic information system (GIS) have emerged as essential tools to meet ever-increasing demand for more precise and timely information. These techniques permit rapid and cost effective natural resources survey and management. In this study various thematic maps such as geology, geomorphology, and drainage were prepared. Based on the hydrogeomorphological mapping, the study area has qualitatively been categorized into four groundwater potential zones, viz. good, moderate, poor and very poor. The prospect map shows that good groundwater potential zones are confined to structural valleys, deeply weathered and fractured pediplain. A watershed, near the village Krishnamgaripalli is demarcated and has been suggested to impound the excessive run off and to augment the groundwater resources of the area. The total drainage area of watershed is about 332.5 sq.kms with very coarse drainage texture and the region has high resistance of highly permeable sub soil materials, dense vegetation cover and structurally uncontrolled drainage pattern.

Keywords: Hydrogeomorphological mapping, Groundwater Potential, Remote Sensing and Geographic Information System, Pulivendula-Sanivaripalli, Kadapa.