



## **Delineation of Groundwater Potential Zone in Foothill of Western Himalayan State**

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**Abstract:** The present study emphasizes on the integrated remote sensing and GIS approach for delineation of the groundwater potential zone in foothill situated between Northern latitudes of 30°52' to 31°04' and Eastern longitudes of 76°40' to 76°55' falling in the Survey of India Toposheets no. 53A/12, 53A/16, 53B/9 and 53B/13. The thematic maps of influencing parameters viz. LULC, slope, geology, drainage, soil, aspect and lineament were prepared in Arc GIS. By integrating the information derived from the maps five zones having high, high to moderate, moderate, moderate to low and low to poor groundwater potential were distinguished. The overall results showed that maximum region came under high and moderate groundwater potential zone. Potential zones were further validated with 15 locations (hand pump and bore well) which, were randomly selected in the study area. Plotting of these points on groundwater potential zone map revealed that maximum points fell in high groundwater potential zone and one point was found in moderate groundwater potential zone thereby verifying that, zone I identified by remote sensing analysis was the zone holding maximum groundwater potential. This study will help policy makers in making appropriate water conservation strategies for the actual groundwater potential zones in the study area.

**Keywords:** Groundwater, Remote sensing, Potential zones, GIS

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