

**Mapping the groundwater potential zones in Kota Belud, Sabah and its surrounding areas by using the geographical Information system (gis) and remote sensing techniques**

**ABSTRACT**

The increasing demand for groundwater sources is due to many reasons; increasing in population, increasing in agricultural area, pollution, industrialization and urbanization. The declining supply of clean water every year worsen this situation. This study aims to map the groundwater potential zones in Kota Belud, Sabah and its surrounding by using the Geographical Information System (GIS) and remote sensing techniques. Five parameters were studied that influence groundwater potential in the study area. The parameters are derived from existing maps, remote sensing imagery, and associated databases. The parameters are; rainfall distribution, drainage density, lineament density, elevation and slope steepness. All of these parameters will be used to create a thematic map based on a given weighting value. Finally, all the thematic maps will be integrated to produce the final groundwater potential map of the study area. The groundwater potential map is classified into five categories which are very low, low, moderate, high and very high. This study shows that three major factors that significantly affecting the occurrence of groundwater in study area are rainfall distribution, elevation, and slope steepness, and almost half of the study area was a high groundwater potential zone.