

## GROUNDWATER POTENTIAL AND AQUIFER TYPES IN THE PREMISES OF THE SABARAGAMUWA UNIVERSITY OF SRI LANKA

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The gradual development of the Sabaragamuwa University of Sri Lanka (SUSL) and surrounding area introduces new buildings and reforms the natural landscape. The water demand is also increasing as the growth of the community. Therefore understanding of the underlying geological structures and feasibility of the groundwater occurrences are useful in order to overcome the impending water demand as surface water is scarce in the area. Topographic and satellite maps were used for preliminary study. Fieldwork was carried out to collect geological and structural data. A detailed geology and structural maps with higher resolution were produced prior to the geophysical surveys. Geo-electrical resistivity surveys were conducted to investigate groundwater conditions of the area. Two types of geo-electrical surveys, vertical electrical sounding (VES) and electrical profiling were conducted using Schlumberger electrode configuration. ArcGIS 10.4 software was used to produce the geological map and the spatial distribution of apparent resistivity values while IPI2win software was used to analyse resistivity data. Out of eighteen VES points, nine locations were identified as possible locations for groundwater abstraction. Groundwater could be located at the depth of 25–60 m. Resistivity data indicate that the aquifers in the area are regolith type aquifers along with deep weathered rock aquifers. The most of the points close to or at valleys prevail deep groundwater aquifers. Considering all the geological, structural, and morphological features, we suggest locations at VES 1, VES 4, VES 5, VES 9, VES 11, VES 13, VES 14, VES 16, and VES 17 as most convincing for test drilling. Moreover, when considering the spatial distribution of apparent resistivity values with the depth high resistivity values could be identified within the University premises. The resistivity data could also be used to interpret subsurface conditions for engineering purposes.

**Keywords:** *Geology map, Groundwater, Resistivity, Sabaragamuwa University of Sri Lanka*