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Environmental impact on groundwater quality in Matara town area

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The study was conducted in the Matara town area which is bound by latitudes 5.56°633′ and 5.57°603′N and longitudes 80.32°002′ and 80.33°216′E. Matara town area is relatively flat or gently seaward sloping and elevation and topographic relief generally increases towards inland from the coastal line. Precrembrian metamorphic hard rock covered by quaternary sedimentary deposits is dominant in the study area. The top quaternary sandy aquifer and the surface soils of the coastal margin of Matara town area are mostly permeable due to the sandy condition.

A network of 66 dug wells distributed over the Matara town area was selected for the present study. The dug wells were distributed within approx 9 km^2 area within the Matara city and dug wells were selected maintaining 3 major clusters such as; (1) very close to the coastal area (2) close to the Nilwala River and River mouth, (3) countryside.

Electrical conductivity (EC) of the Matara town area is change in the range of 316 to 1980 µ siemens/ cm. The 21 % of the well water EC levels are exceeding the World Health Organization (WHO) standard for drinking water quality (WHO standard for drinking water quality below 1000 µ siemens/ cm). In the study area EC and pH of the groundwater resources in the cluster two and three identified to be static and lies below WHO and Sri Lankan standards for drinking water, and as such it is a reliable source to meet the water demands of the population. But in the cluster one where dug wells are located in close to coast, EC values are relevantly high. The Regime of unconfined quaternary aquifer ground water level intimately related to atmospheric precipitation.

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