

WATER QUALITY VARIATIONS IN STRUCTURALLY CONTROLLED AQUIFERS

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Water quality parameters were studied in different structurally controlled aquifers in the Kandy-Kurunegala areas. Samples were collected from tube wells of the area and analyzed for NO_3^- , SO_4^{2-} and Cl^- contents. *In situ* measurements of conductivity and alkalinity showed a two-fold increase towards the geologically weak fracture zones.

The increase of NO_3^- , SO_4^{2-} and Cl^- in the Halloluwa basin (average values: NO_3^- - 5 mg/l; SO_4^{2-} -21 mg/l; Cl^- - 20 mg/l) when compared to the water in the anticlinal regions (average values: NO_3^- - 1 mg/l; SO_4^{2-} - 4 mg/l; Cl^- 8 mg/l) indicates the abundance of the ions in the synclinal regions.

The ground water in the fracture system N 30°E - N 60°E/N 0° - N 30°W and in nose regions of the synclines had similar chemistry but the high SO_4^{2-} (145 mg/l) contents indicate the existence of a pathway for groundwater contamination along the westerly trending fracture system.

It was thus found that screening of the tube wells along the westerly trending fracture system was necessary to prevent contamination of the aquifer.

Reference

1. Larsen, I. and Cederwall, K. (1980). Underground storage of water in natural and artificial openings in hard rocks in developed countries, *Proc. Int. Symp. Rockstore*, Sweden, 11, 459-466.