

ABSTRACT

Groundwater is one of the sources of water supply in many countries in both arid and wet areas. Ministry of water in Kenya's national and county governments are already harvesting the groundwater resources by drilling boreholes and wells mostly in the arid and semi-arid areas to provide adequate and quality water to the Kenyan people. The study aims to assess the quality of groundwater and the spatial and temporal variations of the physiochemical characteristics of boreholes in the Tulimani ward in Makueni county, Kenya. Groundwater in the area is becoming common due to the low rainfall which has been recorded also over the years. The ward is subject to assessing the quality due to nitrate contamination from fertilizers and organic manure used in a large percentage. For this purpose, 10 groundwater samples were collected during dry and wet seasons and analyzed for pH, colour, turbidity, total hardness, calcium, nitrate, total dissolved solids, chlorides, and alkalinity. The samples were measured according to the procedures by the Public Health Laboratory of the University of Nairobi. The results showed that most of the parameters sampled were within the national and worldwide standards. The results also showed that groundwater in the area was suitable for drinking during the wet and dry seasons. Great spatial variation and temporal fluctuation among the physiochemical characteristics were noticed in different samples