

Hydro-Geochemical Characteristics and Evaluation of Drinking Water Quality in Gaza Strip

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Abstract:

Groundwater is the main water resource used for drinking and irrigation purposes in the region. As groundwater quality assessment is an essential component for its safer use. The aim of this paper is Hydro-geochemical Characteristics and evaluation of drinking water quality in Gaza strip .For this study, were collected from 102 sample for drinking wells in 2009. Water quality classification was derived through a multitude of diagram methods and equations. The results of analysis showed that the groundwater was chemical highly enriched with Na^+ and Cl^- an indication of seawater intrusion into the aquifer as also supported from the Na-Cl signature on the Piper diagram .Results of this study indicate that the groundwater in the region is mainly of NaCl , CaHCO_3^- and NaHCO_3^- . Results reveal that salinity and the major elements concentrations, increase towards groundwater flow. The saline load of these waters is in first place controlled by chloride, sodium and calcium concentrations. The spatial changes of ionic ratios of $\text{rCa}^{2+}/(\text{rHCO}_3^- + \text{rSO}_4^{2-})$ and the relationship between sodium and chloride in the coastal area in 2009 indicate that the aquifer experienced seawater intrusion. study showed that by understanding correlation matrix between the chemical elements of drinking water and compared with sea water, we find that there is a strong correlation between chloride, calcium, magnesium, sodium, and this was due to seawater intrusion. The geochemical data, presented in the form of GIS-based geochemical maps.

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