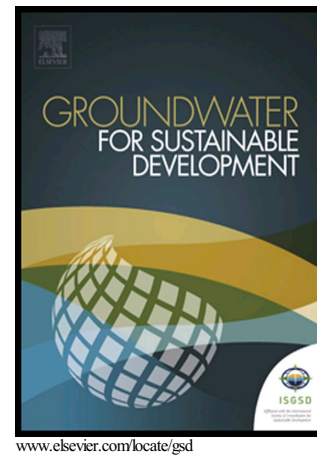


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Groundwater Analysis of Dholera Geothermal Field, Gujarat, India for Suitable Applications

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Abstract

The physio-chemical properties of water play an important role on the efficiency of a process, selection of materials and the lifetime of conduits used to carry the fluid used either in industries or for irrigation. A study was undertaken to assess the quality of groundwaters in the Dholera geothermal field. The groundwater samples were collected from shallow geothermal wells, located at different places in Dholera district. Samples were collected from nine geothermal wells and tested for pH, total dissolved salts (TDS), Na^+ , K^+ , Ca^{2+} , Mg^{2+} , F^- , HCO_3^- , Cl^- and SO_4^{2-} and their distribution was observed using spatial distribution contours. Piper plot, ternary plot and various other diagrams were used to analyse the water for manifold direct and indirect uses. From the results, it was concluded that even though the water cannot be used for irrigation purpose, various utilization strategies focusing on exploitation methods for geothermal energy revolving around industrial applications, agriculture and space heating and cooling and power generation by geothermal resources have been devised for geothermal water of Dholera region in this paper.

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