

HYDROGEOCHEMISTRY OF GROUNDWATER OF RANGAPUR, MAHABUBNAGAR DISTRICT, ANDHRA PRADESH, INDIA

I. Panduranga Reddy

Department of Geology, University College of Science

Osmania University, Saifabad, Hyderabad

E-mail: inavile@yahoo.co.in

Abstract

The results of hydrogeochemistry and groundwater quality to generate baseline information on groundwater resources in the developing area of Rangapur in Mahabubnagar District, Andhra Pradesh have been incorporated in this contribution. The study area occupies around 21 sq.km. The area falls under a semi-arid type of climate and consists of granites and intrusions of dolerite dykes. A few textile and pharmaceutical industries located around the study area are expected to be releasing significant amounts of effluents that may be affecting the quality of groundwater. The quantum of effluents can not be estimated but they have direct effect on the quality of the water. The groundwater samples were analysed for various water quality parameters such as pH, electric conductivity, total dissolved solids, total hardness, calcium, magnesium, sodium, potassium, bicarbonate, sulphate, chloride, nitrate and fluoride. Based on these analyses, it is noticed that the groundwater of Rangapur area (except few samples) is suitable for both drinking and agriculture.

The data were used to compute chemical parameters as sodium adsorption ratio, percentage of sodium etc. found to be based on evaluation of the chemical parameters quality of groundwater is fit for drinking and agricultural uses, except in a few locations. Wilcox's diagram indicates that majority of samples fall in excellent to good and good to permissible types. Plotting on Gibb's diagram, majority of the groundwater samples falls under rock dominance field. Percent sodium and SAR values of groundwater samples indicate that majority are safe for irrigation.

Keywords: Rangapur, Groundwater quality, Effluents, Hydrogeochemistry.