

ASSESSMENT OF GROUNDWATER QUALITY FOR DRINKING PURPOSE IN AND AROUND DIMAPUR TOWN, NAGALAND

R. Peseyie and B.V. Rao

Department of Geology, Nagaland University, Kohima Campus, Meriema

E-mail: bvrao97@yahoo.com

Abstract

Hydro-geochemical investigation of groundwater resources in and around Dimapur town has been carried out to assess the quality of groundwater for drinking purpose. Groundwater quality and its suitability for drinking purposes were examined by using the physico-chemical parameters such as Turbidity, pH, TH, TDS, Ca, Mg, Na, K, Cl, Fe, SO₄ and F, quality in comparison with BIS (1998) standards.

Most of the analyzed parameters from the study area are found to be under the permissible limit. However, some parameters like pH values vary from 4.5 to 7.0 which indicate acidic to neutral nature. 50.6 % samples of groundwater show that turbidity values are within the acceptable limit, 32.07% are within the permissible limit and 11.33% are exceeding the permissible limit. The concentration of Na from the study area varies from 6.1 to 185.3 mg/l. 74.58 % of the water samples for Na come within the acceptable limit. The overall concentrations of K also vary from 2.92 to 75.6 mg/l though only 51% of the samples are within the acceptable limit while the rest show above acceptable limit as per the BIS (1998) standards for human consumption. Fe concentration varies from 0.18 to 2.5 mg/l, but a majority of the samples are above the permissible limit, which needs further treatment.

Keywords: Hydro-geochemistry, Groundwater Quality, Dimapur town, Nagaland