

Portability of mine-pit water of Jharia coal field, eastern India

¹GHOSE N.C. and ²GUPTA ANJALI. ¹Department of Geology, Patna University, Patna-800005, India; ²Department of Chemistry, R.P.M.College, Patna City-800009, India

The Jharia coal field in eastern India of Lower Gondwana age is the largest coal belt in India, which is being actively mined for over a century. Keeping in view of acute scarcity of drinking water in the region during summer (April-June), the present study was undertaken to establish the portability of the abundant volume of water found in the mines around Dhanbad township. The study revealed that the water discharged from the 24 coal mines is 331 million litres a day (mld), which is sufficient to meet all the domestic and industrial requirements of water for the area.

The analysed water samples found to be moderately hard to very hard (125-780 ppm). The fluoride (F) content of water ranges between 0.3 and 2.1 ppm, among these 70 per cent were found to be within the desirable limits. The iron content (as Fe) of water ranges from 1.3 to 3.1 ppm, higher than the maximum permissible range for human consumption. Concentration of other constituents like sulphates, alkalinity of water, pH, vary within the permissible range for human consumption as recommended by W.H.O. Minor deficiencies could be removed by simple chemical treatment to make the water safe for human consumption. It is suggested that water from the mines that are closely located should be drawn to single reservoir and supplied for public distribution after proper treatment.
