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HYDROCHEMICAL ASSESSMENT OF GROUNDWATER IN PARTS OF SOUTH COASTAL ORISSA, INDIA

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ABSTRACT

Detailed hydrochemical analysis was carried out on a number of water samples collected from the coastal tract of south Orissa between the Rushikulya and Bahuda river estuaries to assess the quality of groundwater in this region. Results indicate that the groundwater of this region is highly enriched in Ca, Mg, Na, Cl and HCO₃. At some locations the concentration of these ions, as well as other parameters such as salinity, total hardness and total dissolved solids are above the World Health Organization standards for drinking water. The concentration of Na, Mg and HCO₃ at some locations near the coast suggests sea water encroachment, which is further substantiated by a general increase in the value of Cl content and Na/Cl ratio, and a decrease in HCO₃ content towards the coast. On the basis of hydrochemical studies, five groundwater types have been delineated. They are Ca(HCO₃)₂, Mg(HCO₃)₂, NaHCO₃, CaCl₂ and NaCl. Some intermediate groundwater sub-types are also recognized in the transitional zones, thus indicating that the major groundwater types are not spatially isolated.

Reference: Tripathy J. K. and R. C. Panigrahy; Hydrochemical Assessment of Groundwater in Parts of South Coastal Orissa, India, Journal of Environmental Hydrology, Vol. 7, Paper 3, February 1999.

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