

Geo-Hydrochemistry of Saline Ground Water, Purna Alluvial Basin, Maharashtra

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ABSTRACT

Ninety-four groundwater samples from two aquifer systems lying at shallow (15–25 m) and deeper depth (70–90 m) have been analyzed for their physical and chemical parameters in pre- and post-monsoon periods of the year 2006. The samples are collected from the saline groundwater zone, covering an area of 2,726 sq. km. central part of the Purna alluvial basin.

Physical and chemical parameters of groundwater of both the aquifers in general, high to very high then the permissible limits of various constituents/parameters, as per the standard set by WHO (1984) and Indian Standard (1991). The electrical conductivity is recorded to a maximum of 18,800 micromhos/cm in deep aquifer. Similarly, the mean value of TDS goes up to 2,993 mg/l in deep aquifer. On the basis of mean values, it is interpreted that pH, TDS, Na, NO₃ and total hardness show an increasing trend of concentration from pre-monsoon to post-monsoon period, in both shallow and deep aquifers, where as, Ca, Mg, Cl and SO₄ have a different trend.

On the basis of the analytical results of the individual well, it is interpreted that the shallow aquifer is comparatively more degraded as compared to the deep aquifer.