



www.gondwanags.org.in

ISSN : 2455-1953

JGSR
Journal of Geosciences Research

Vol. 7, No.1, January, 2022, pp. 112-120

Copyright © 2022, Gondwana Geological Society, Nagpur
All rights reserved

Major Ion Chemistry and Assessment of Groundwater Quality around Gangapur Village, Nagpur District, Maharashtra, India

Y.A. Murkute

*P.G. Department of Geology, R.T.M. Nagpur University, Law College Square, Nagpur-440001 (MS), India
(Email: yogmurkute@rediffmail.com)*

Abstract

Groundwater quality results of 37 representative groundwater samples around Gangapur village are discussed here. The pH values of the groundwater reveal that it is in general alkaline in nature. The electrical conductivity varies from 565 to 1687 $\mu\text{S}/\text{cm}$; the TDS content from the area shows that the 63% of groundwater samples from the study area have drinking utility, while its spatial variation is attributed to variations in lithology and hydrological processes. The cation chemistry is dominated by Ca^{2+} and Mg^{2+} while anion chemistry is dominated by Cl^- and HCO_3^- . There are two dominant hydrogeochemical facies, which are Mg-Ca-HCO_3 and $\text{Ca-Mg-SO}_4\text{-HCO}_3$ where in alkaline earths ($\text{Ca}^{++} + \text{Mg}^{++}$) dominates over the alkalis ($\text{Na}^+ + \text{K}^+$). The US Salinity classification indicates that water of the study area belongs to C2-S1, and C3-S1 classes. In general, the groundwater from the study area is suitable for drinking, domestic as well as irrigation purpose without any hazards.

Keywords: Groundwater Quality, Major Ions, Groundwater Suitability, Gangapur, Nagpur District, Maharashtra, India
