عنوان مقاله:

Assessment of Groundwater Quality Index, Suitability for Irrigation and Domestic Purposes in Krishna-Godavari Delta Region, Southern India Service Unavailable

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خلاصه مقاله:

The water quality index (WQI) is a significant indicator for evaluating the quality of drinking water for end-users. The present work is aimed to assess the groundwater quality of the Krishna Godavari delta region in Andhra Pradesh State, for knowing its suitability for domestic, irrigation, and drinking purposes by calculating the WQI parameters and comparing it with WHO and Indian Standards. A total of ۱۰۵ groundwater samples each for both Pre-monsoon and Post-monsoon periods have been collected during June ۲۰۱۷ and January ۲۰۱۸. The following ۱۱ parameters were taken into account when calculating the WQI: pH, Electrical Conductivity (EC), Total Hardness (TH), Calcium (Ca۲+), Magnesium (mg۲+), Bicarbonate, Chloride(Cl-), Nitrate (Na+), Sulphate, Potassium (K+), and Total Dissolved Solids (TDS). Based on the WQI result, the samples were divided into five categories: Excellent, Good, Poor, Very Poor, and unfit for drinking purposes. In Pre-monsoon and Post monsoon season, the water quality index is ۹%, ۲۵%, ۳۰%, ۲۲%, ۱۵% respectively ۱۶%, ۴۱%, ۳۱%, ۷%, and ۵%. It can be concluded that during pre-monsoon and post-monsoon season ۶۷% and ۴۳% of water is not suitable for drinking purposes respectively and hence they require treatment before usage.The water quality index (WQI) is a significant indicator for evaluating the quality of drinking water for end-users. The present work is aimed to assess the groundwater quality of the Krishna Godavari delta region in Andhra Pradesh State, for knowing its suitability for domestic, irrigation, and drinking purposes by calculating the WQI parameters and comparing it with WHO and Indian Standards. A total of ۱۰۵ groundwater samples each for both Pre-monsoon and Post-monsoon periods have been collected during June ۲۰۱۷ and January ۲۰۱۸. The following ۱۱ parameters were taken into account when calculating the WQI: pH, Electrical Conductivity (EC), Total Hardness (TH), Calcium (Ca۲+), Magnesium (mg۲+), Bicarbonate, Chloride(Cl-), Nitrate (Na+), Sulphate, Potassium (K+), and Total Dissolved Solids (TDS). Based on the WQI result, the samples were divided into five categories: Excellent, Good, Poor, Very Poor, and unfit for drinking purposes. In Pre-monsoon and Post monsoon season, the water quality index is ۹%, ۲۵%, ۳۰%, ۲۲%, ۱۵% respectively ۱۶%, ۴۱%, ۳۱%, ۷%, and ۵%. It can be concluded that during pre-monsoon and post-monsoon season ۶۷% and ۴۳% of water is not suitable for drinking purposes respectively and hence they require treatment before usage.

کلمات کلیدی:

Groundwater, Hydrochemical Characteristics, Water Quality Index (WQI), Krishna Godavari Delta, Correlation analysis