Available online at **www.joac.info**

ISSN: 2278-1862

Journal of Applicable Chemistry

2024, 13 (6): 693-704

(International Peer Reviewed Journal)

Assessment of Physico-Chemical Parameters and Seasonal Variation of Sone River Water in Dehri Block of Rohtas District (Bihar)

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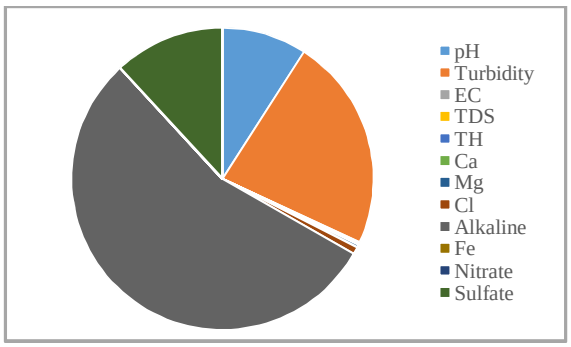
Accepted on 26th October, 2024

ABSTRACT

Sone River is one of the major sources of water nearby Dehri block of Rohtas district in Bihar. It has been used for drinking and irrigation purpose by the people in this area. Sand mining and other human activities lead to deterioration of water quality of the river. In this present study different water physico-chemical characteristics of Sone River water of selected three sites have been studied and compared with the guidelines provided by world health organization (WHO) to understand its suitability for public consumption. Water Quality Index (WQI) has been used for the water quality measurement. For this the WQI has been calculated taking average of all the samples collected from different locations in the pre-monsoon, monsoon and post-monsoon seasons. Concentration of various physico-chemical parameters like pH, Turbidity, TDS, TH, EC, Alkalinity and major cations like Ca^{2+}, Mg^{2+}, Fe^{3+}, and anions like Cl^-, I^-, SO_4^{2-} have been considered for the water quality determination. Most of the parameters were observed within the limit as per WHO guidelines. WQI of the water samples was also found to be 43, which makes it suitable for washing and bathing purposes.

Graphical abstract:



WQI variation with Physico-chemical Parameters.

Keywords: Sone River, WQI, Monsoon season, Water quality, Physico-chemical Parameters.