

## AI DRIVEN WATER MANAGEMENT STRATEGIES FOR JODHPUR. A MACHINE LEARNING APPROACH

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### **ABSTRACT**

*In this paper, Using 710 samples taken in the water-scarce Indian city of Jodhpur in the state of Rajasthan, this article determines the water potability of a water supply by calculating eight water quality (WQ) metrics. We split the whole sample into 10 groups, each representing a distinct region. In order to describe the water quality for potability use, eight WQ parameters were chosen according to the methodology specified by the American Public Health Association (APHA). Depending on the zone, we look at how well each parameter performs. The whole water quality was described by a single number that was calculated by averaging the parametric values of several zones. It was discovered that there is a substantial variation in the average value of each parameter between zones. Our next step was to simulate the nonlinear connection between the water quality index and the aforementioned eight parametric inputs using machine learning techniques. There is evidence that the NN developed in this study learned enough to make accurate predictions about the input-output relationship. Additionally, it is clear that the WQI developed from this study is an effective tool for evaluating water quality in the research region. While the precise number is up for disagreement, this research takes a fresh approach to the problem of comprehending the cumulative influence of the many aspects influencing water quality, which is the biggest obstacle to providing a distinctive description of water quality for human consumption. Government agencies will benefit from this work's framework since it can be automated with the right technology and it will help them understand how water quality is changing so they can better control it.*

**KEYWORDS:** *Water Quality Parameters; BIS Standards; Water Quality Index; Neural Network, Machine Learning Approaches, Nature Inspired Algorithm's.*

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### **Article History**

**Received: 04 Apr 2026 | Revised: 06 Apr 2026 | Accepted: 09 Mar 2026**

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