

# Use of index analysis to evaluate the water quality of a stream receiving industrial effluents

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## Abstract

In this paper, the water quality of a stream that receives industrial effluents is evaluated through the analysis of two indices. Data (dissolved oxygen, biochemical oxygen demand, pH, turbidity, colour, temperature and thermotolerant coliforms) were collected from five stations in the Mussuré Stream, located in João Pessoa (Northeast of Brazil), between January 1992 and December 2004. Spatial and temporary changes were recorded. The quality indices used, Objective Water Quality Index ( $WQI_{OBJ}$ ) and Bascaron Adapted Water Quality Index ( $WQI_{BA}$ ), presented similar trends and were considered adequate for evaluating the impacts of industrial effluent on water bodies. The flexibility of these indices relative to the parameters utilised in the calculations facilitates water quality evaluation in developing countries, where high cost and lack of necessary structure for analysis of other parameters are current deterrents to appropriate water quality evaluation.

**Keywords:** water quality indices; water bodies; industrial effluents