

Water Quality Assessment of Euphrates River Within Fallujah City Using Water Quality Indices Technique

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Abstract

Scientists and researchers have recognized the importance of water quality. Water resources are especially susceptible aquatic systems to many pollutants sources. Determination of water quality characteristics are very significant in terms of environmental considerations. This study aims to assess the water quality of the Euphrates river in the Fallujah Euphrates Reach (FER) by measuring the concentration of chemical and physical properties of water using multiple devices. CWQI and WAWQI were also used to assess the quality of water and indicate its suitability for drinking purposes, based on standard specifications from IQS, WHO, and USEPA as a criterion for comparison purposes. The findings show that with the use of CWQI, the quality of water was fair based on IQS, good based on WHO, and marginal based on USEPA, while the quality ranged between good, poor, very poor, and unsuitable for drinking purposes as a result of using WAWQI, with the exception of station 7, where the value of the WAWQI was greater than 100 mg/L, which indicates that the water is not suitable for drinking purposes as a result of the pollution of this station from a point source, which caused the high concentration of turbidity, sulfate, BOD₅, and total dissolved solids, and decreased the DO concentration in this station compared to the rest of the stations, which were within the permissible.