

# **Evaluation of wastewater effluents and It's Effects on AL-WARAR Canal**

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## **Abstract**

The research evaluated the wastewater effluents , Two pump stations discharged directly without any treatment in AL-WARAR Canal in Ramadi City ,located in the southern bank of the Canal . These effluents collects the storm water from the residential area , the drainage open channel which bypassing by septic tanks of domestic wastewater , bypassing from septic tanks of domestic wastewater. Laboratory Tests out on (December 2010 to May 2011) for the Canal (upstream) , wastewater effluents, and Canal ( downstream) to determine the quality characteristics and the wastewater effects upon the AL-WARAR Canal . The results show an increase in almost concentrations of characteristics compared to the Iraqi Standards NO. (25 –B1) in (1967) of the conservation of water resources , where the Bio-chemical oxygen demand , chemical oxygen demand and Total Bacterial Count were increased by (11, 9.7 and 535) times respectively. According to the organic load , the wastewater effluents classified as low strength . This study shows that the value of the reaction constant rate ( $k_1$ ) and Reaeration constant rate ( $k_2$ )were about (0.187/day) and (0.556 /day ) respectively . Two stations downstream were located to determine the wastewater effects upon the Canal , Dissolved Oxygen was measured and calculated by using (STREETER –PHELPS) equations , then Sag curve of AL-WARAR Canal was determined .In spite of that the wastewater effluent does not comply with the Iraqi Standards discharged into water resources NO. (25 – B1) in (1967) , AL-WARAR Canal still comply with the Iraqi standards (NO. 25-A1) in (1967) of the conservation of water resources by the effect of self-purifications.