

Reuse of Wastewater After Pretreatment Under Teril and Sand in Bechar City

Authors : Sara Seddiki, Maazouzi Abdelhak

Abstract : The main objective of this modest work is to follow the physicochemical and bacteriological evolution of the wastewater from the town of Bechar subjected to purification by filtration according to various local supports, namely Sable and Terrill by reducing nuisances that undergo the receiving environment (Oued Bechar) and therefore make this water source reusable in different areas. The study first made it possible to characterize the urban wastewater of the Bechar wadi, which presents an environmental threat, thus allowing an estimation of the pollutant load, the chemical oxygen demand COD (145 mg / l) and the biological oxygen demand BOD5 (72 mg / l) revealed that these waters are less biodegradable (COD / BOD5 ratio = 0.62), have a fairly high conductivity (2.76 mS/cm), and high levels of mineral matter presented by chlorides and sulphates 390 and 596.1 mg / l respectively, with a pH of 8.1. The characterization of the sand dune (Beni Abbes) shows that quartz (97%) is the most present mineral. The granular analysis allowed us to determine certain parameters like the uniformity coefficient (CU) and the equivalent diameter, and scanning electron microscope (SEM) observations and X-ray analysis were performed. The study of filtered wastewater shows satisfactory and very encouraging treatment results, with complete elimination of total coliforms and streptococci and a good reduction of total aerobic germs in the sand and clay-sand filter. A good yield has been reported in the sand Terrill filter for the reduction of turbidity. The rates of reduction of organic matter in terms of the biological oxygen demand, in chemical oxygen demand recorded, are of the order of 60%. The elimination of sulphates is 40% for the sand filter.

Keywords : urban wastewater, filtration, bacteriological and physicochemical parameters, sand, Terrill, Oued Bechar

Conference Title : ICW 2023 : International Conference on Wastewater

Conference Location : Paris, France

Conference Dates : June 22-23, 2023