

## **Abstract**

Potable water is a necessity for all domestic uses in Khartoum State and the entire world. There are many treatment plants for surface water from river NILE and its tributary. Khartoum North (BAHRI) water treatment station is the largest treatment plant and is selected for this study.

There is water deficit in Khartoum State as a result of increased population in the state. Bahri water treatment plant was selected for rehabilitation to increase water productivity for the residence of Khartoum State. Rehabilitation of Khartoum North Treatment Plant includes installation of new water pumps, new feeding water pipes and construction of a flash mixer. Clarifiers were improved in performance by installing lamella. For rapid sand filters the media was changed and new nozzles were installed to increase the rate of filtration. New lifting station with (six) pumps to pumped extra (100,000m<sup>3</sup>/day) of treated water were erected. New equipments were added to the laboratory with line water quality measurement instruments. The landscape of the treatment plant was improved significantly.