

## Application of Nanofiltration Membrane for River Nile Water Treatment in Egypt

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**Abstract :** In this manuscript, 35 m<sup>3</sup>/d NF unit was designed and applied for surface water treatment of river Nile water. Intake of Embaba drinking water treatment plant was selected to install that unit at since; it has the lowest water quality index value through the examined 6 sites in greater Cairo area. The optimized operating conditions were feed and permeate flow, 40 and 7 m<sup>3</sup>/d, feed pressure 2.68 bar and flux rate 37.7 l/m<sup>2</sup>.h. The permeate water was drinkable according to Egyptian Ministerial decree 458/2007 for the tested parameters (physic-chemical, heavy metals, organic, algal, bacteriological and parasitological). Single and double sand filters were used as pretreatment for NF membranes, but continuous clogging for sand filters moved us to use UF membrane as pretreatment for NF membrane.

**Keywords :** River Nile, NF membrane, pretreatment, UF membrane, water quality

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