

Brackish water treatment using desalinating device for domestic purpose

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ABSTRACT

The cheapest and also the most unsophisticated way to attain potable water from the brackish water normally available at the taps is reverse osmosis process. Today there is strong need for appropriately treated wastewater to protect the environment and to ensure that freshwater is available for all applications. Semi permeable membranes allow the passage of water or other small molecules through them but block the passage of large solute molecules. As a consequence of osmosis, the concentration on the solution side decreases, because the amount of liquid on this side increases considerably over the passage of time. The study involved testing the performance of the reverse osmosis treatment plant. Conventional tests (temp, pH, TDS, turbidity, alkalinity, hardness, chlorine residual), and special tests (Fe, Mn, Zn, Cu, Pb, Cr, F, TOC) were conducted at different sampling locations within the distribution system, over a period of about eight months to evaluate the quality of drinking water. Samples were also collected after different stages of treatment from the main RO treatment plant, to determine the nature of treatment provided. The main objective of the research paper is to present fundamental model for brackish water desalination system for domestic purpose and their preliminary findings using prospective design.

Keywords: Membrane; Osmosis; Concentration; Solute; Solution; Molecules; Salinity; Filtrates; Activated charcoal; Halogens; Fouling; Particulate; Scales; Brine

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