

CASE STUDY

RO-500 Series

**Industrial Brackish Water
Treatment for Power Plant**



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 **PURE AQUA, INC.**[®]



Industrial Brackish Water Treatment for Power Plant

Country: Iraq | **Capacity:** 1,700 m³/day

Challenge

The power and energy industry play a crucial role in the development of civilization. Energy can be generated through a multitude of methods. However, many of them require purified water for efficient production. Generally, processes like cooling towers, boiler feeds, and semiconductors necessitate water to function. In order for them to operate efficiently, pure water must be supplied to mitigate scaling buildup within the system, malfunctions, and equipment corrosion. This customer intended to supply their power plant with river water containing 6,000 PPM TDS. They additionally reported elevated conductivity and required a water treatment system to produce 1,700 m³/day.

Solution

This industrial brackish water treatment was recommended to reduce conductivity in river water. The plant includes a multi-step filtration process to optimize on the efficiency and production long-term. The process begins with duplex multimedia filters to reduce the silt and suspended solids from the feed water. Next, sodium metabisulfite was injected into the feed for chlorine reduction prior to reaching the membranes. Then, a dechlorination system was incorporated along with antiscalant dosing injection to reduce scaling potential on the following filtration systems. The water is then passed through a cartridge filtration unit to remove any suspended solids that may have remained. Finally, the feed is fed into the RO system for purification. A clean in place (CIP) system, which cleans brackish water RO membranes every 18 to 24 months, was also included.

Applied System

The model **#BW-470K-13680** was utilized from our **RO-500 Series** along with multimedia filters model **#MLF-78** from our **MF-1000 Series**.

Project Video



Features

- Powder coated carbon steel frame
- (13) FRP pressure vessels Codeline rated at 450 PSI
- (78) 8" TFC spiral wound membranes, Filmtec model BW30HR-440i
- Pressure gauges
- Low- & high-pressure switches
- (2) Flow meters for reject and product line
- (2) High pressure pumps model CRN64-8-1 with 45 KW motor each
- (1) 1-micron pre-filter with SS housing (SSC-120-316)
- PLC control panel (Siemens S7-1200)
- Low pressure piping SCH80 PVC
- High pressure piping SS316
- Conductivity monitor on the product line
- ORP monitor on feed line

RO-500 Series Product Video

To learn more about our RO-500 Series product, watch this video!



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