

CASE STUDY

RO-500 Series

**Industrial Reverse Osmosis Plant
to Treat Reclaimed Waste Water**



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 **PURE AQUA, INC.**[®]



Industrial Reverse Osmosis Plant to Treat Reclaimed Waste Water

Country: Egypt | **Capacity:** 400,000 GPD

Challenge

This facility had a goal of conserving as much water as possible while fulfilling the necessary treatment for boiler feed application. The feed source was from treated wastewater, a unique plant had to be designed to optimize production and conserve as much water possible. Boiler feed water also needs to be rid of calcium and magnesium in order to prevent scaling effects and long-term buildup. Hardness reduction is a crucial component in regards to boiler feed water and longevity of the system. Other parameters like silica are also important to reduce. Purifying the water of these contaminants will save on energy as well as fuel and labor costs of boiler feed maintenance due to scale formation. For this reason, a specially designed plant is required to purify water to meet both of these challenges.

Solution

An industrial reverse osmosis plant was recommended for the application of boiler feed to this steel manufacturing facility. The plant consisted of a two-round process. The first round included two brackish RO systems that produce 400,000 GPD and manage 2,000 PPM TDS. The second round was used to recycle the reject of the first round. Consisting of two brackish RO systems that produce 66,000 GPD while managing 10,000 PPM TDS, this round is tasked to thoroughly purify the concentrate of contaminants. This unique design allows the customer to optimize on permeate production and continue to conserve water.

Applied System

This plant included two RO model **#BW-600K-14780-2** and two RO model **#BW-87K-3680-10** systems from our **RO-500 Series**.

Project Video



Features

- Powder coated carbon steel frame
- SS 304 RO frame
- (14) FRP pressure vessels Protec rated at 300 PSI
- (98) 8" TFC spiral wound membranes (Hydranautics CPA5-LD)
- GF ORP sensor on feed line & GF conductivity sensor on product line
- Low- & high-pressure switches
- (2) Flow meters for reject and product line
- High pressure pump Grundfos CRN90
- Variable frequency drive to control the pump speed
- 5-micron pre-filter with SS housing (SSC-88-316)
- PLC control panel (Siemens S7-1200).
- All high- & low-pressure piping are SS316
- 2nd pass RO system to treat RO reject to increase the overall recovery of the system

RO-500 Series Product Video

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



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