

BOILER MAKE-UP WATER

Optimize your boiler operations

REDUCTION OF WATER SUPPLY NEEDS

UP TO
70%

Reduction on fresh water consumption

COMPLIANCE WITH ENVIRONMENTAL REGULATIONS

UP TO
85%

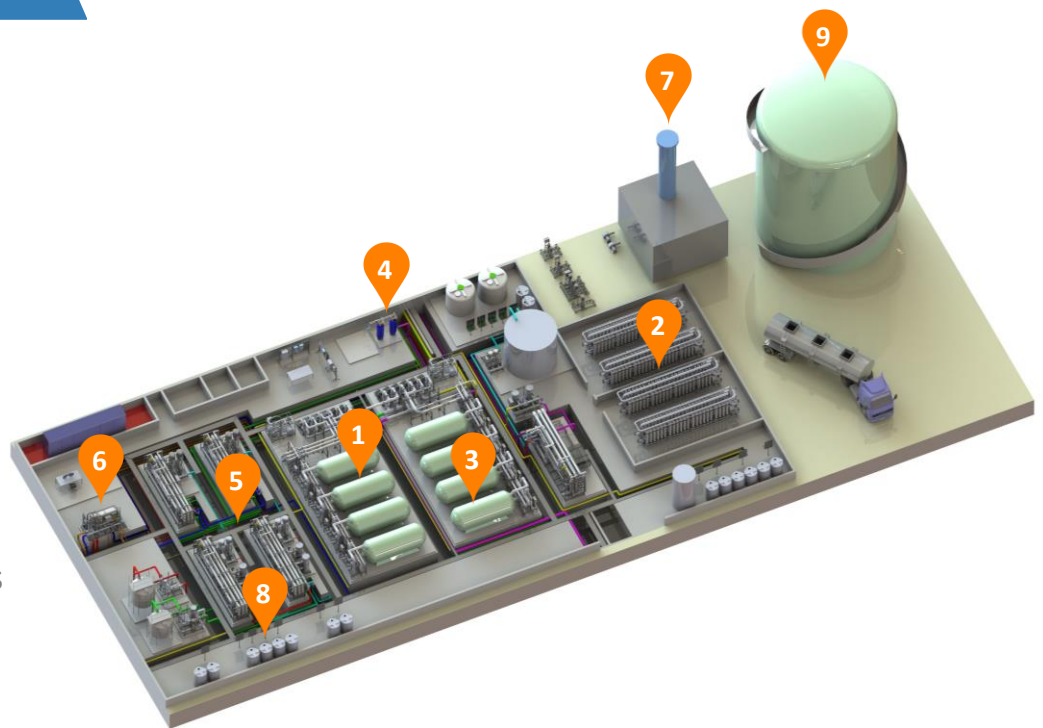
Reduction of blowdown production

INCREASED RELIABILITY

- **Extended** equipment lifetime
- **Control** of scaling, fouling & corrosion

Our Solution

- 1 ▶ MMF
- 2 ▶ Ultrafiltration
- 3 ▶ GAC Filtration
- 4 ▶ Ion Exchange
- 5 ▶ Reverse Osmosis
- 6 ▶ Degassing Tower
- 7 ▶ Electrodeionization
- 8 ▶ Chemical Dosing Stations
- 9 ▶ Water Storage



Special features

- ▶ Closed Circuit Reverse Osmosis, allowing up to **96% water recovery**
- ▶ Containerization to minimize the site works and footprint
- ▶ Automatic analytic measurement



POWER STATION EXPANSION AND POTABLE WATER PROVISION

Kingdom of Bahrain, 3600 m³/d + 2400 m³/d

Aim of the Project

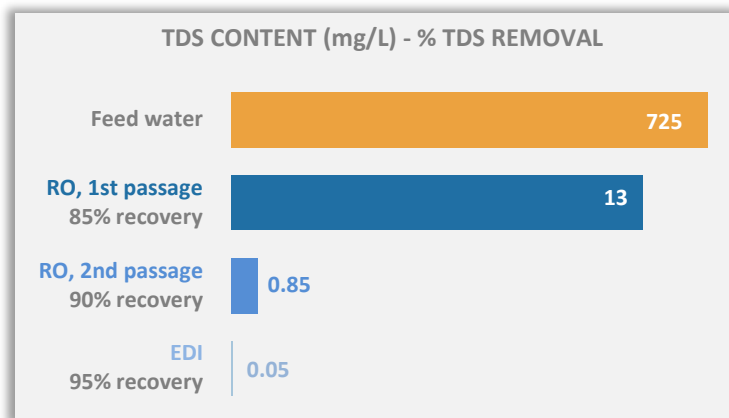
Depending on the feed water quality, boiler make-up water requires different pre-treatments. Lenntech has engineered, built, installed and commissioned a full system featuring Degassing Tower, MMF, GAC, Ion Exchange softening and double-pass Reverse Osmosis technologies.

The water is then treated by continuous electrodeionization to produce a low salinity water that meets the client's requirements. The water desalination system is equipped with top brand instrumentation and equipment.

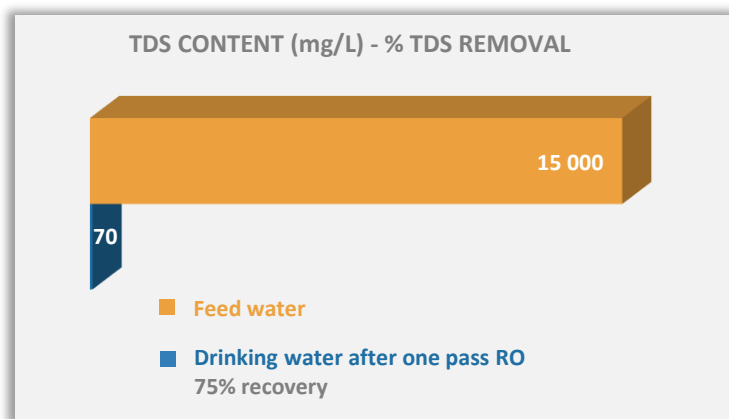
Scope of Work

- ▶ Engineering, manufacturing and assembly
- ▶ Reverse Osmosis double-pass
- ▶ EDI pass
- ▶ High brackish well water pump station
- ▶ Degasser tower system
- ▶ Potable water remineralization system
- ▶ Fully automated flush
- ▶ Form 4B motor control center
- ▶ 2x 100% multimedia filtration
- ▶ 2x 100% chemical dosing stations
- ▶ Automatic online LSI/SDI/Silica/TOC measurement
- ▶ Redundant PLC w/ SCADA preparation
- ▶ Site commissioning

DEMINERALIZED WATER PLANT 99.993% TDS REMOVAL



DRINKING WATER PLANT 99.53% TDS REMOVAL AFTER FIRST RO PASSAGE



FEED WATER QUALITY

DRINKING WATER

- TDS : 15000 ppm
- H2S : 6 mg/L
- Suspended solids: 15mg/L

BOILER MAKE-UP WATER

- TDS > 800 ppm
- Suspended solids ; 3 mg/L

PRODUCT WATER QUALITY

- TSS and H2S removed

- Drinking water
200-400 µS/cm

- Boiler make-up water
< 0.1 µS/cm