

Al Khaluf SWRO Desalination Plant

Based on successful results from the forward osmosis (FO) desalination pilot trials undertaken by Modern Water in Gibraltar in 2008, a full-sized FO desalination plant was designed by Modern Water and deployed at a site at Al Khaluf, Oman in July 2009.

Project Description

The Al Khaluf site is located some 450km south of Muscat in the Al Wusta region of Oman, a harsh and hostile environment for plant and equipment, as well as the operations staff.

The site is owned by the Public Authority for Electricity and Water (PAEW) and was selected by PAEW to initially test Modern Water's patented FO desalination plant under extremely challenging feedwater conditions, in direct comparison to an existing conventional seawater reverse osmosis plant.

The quality of the feedwater was particularly poor, from a very shallow open intake, with high levels of suspended solids, through media filters operating in excess of a velocity of 16m/h.

The plant was designed, fabricated, installed and operated by Modern Water. It was initially provided as a trial, which following its success, Modern Water was asked to operate the plant and provide water on a BOO basis. It was installed in parallel with the existing RO plant of the same capacity, using the same feedwater source and the same pre and post-treatment facilities.

The plant continually outperformed the existing conventional RO plant, it was operational for longer periods without the need for operator input, required significantly less chemical cleaning, no membrane replacements and consistent product water quality.

Following successful commissioning and acceptance tests the FO plant was supplying water into the public network in November 2009.

KEY FACTS

- » Country - Oman
- » Client - Public Authority for Electricity and Water (PAEW)
- » Capacity - 100m³/day

