



Hadera Sea Water Desalination Plant

ONE OF THE WORLD'S LARGEST SWRO DESALINATION PLANTS



Capacity

137,000,000 m³/year
(111,000 acre feet/year)



Max Potential

160,000,000 m³/year
(130,000 acre feet/year)



Technology

RO (Reverse Osmosis)



Project Type

25 Year BOT
(Build-Operate-Transfer)



Shareholders

IDE Technologies (50%)
+ H&C (50%)



Location

Orot Rabin Power
Station,
Hadera, Israel



Commissioned

2009



Operation

January 2010

MARINE PIPES :

3 pipes each

1.25 km (4100 ft.) long

1.8 m (72") diameter

INTAKE :

5 vertical intake pumps

45,000 m³/hr (200,000 gpm)
total

PRETREATMENT :

Dual Media Gravity Filters

Micronic Filtration - 20 micron
cartridge filtration - last barrier
before membranes

SWRO + ENERGY RECOVERY SYSTEM:

53,000 membranes in total
(36,000 SWRO + 17,000 BWRO)

8 high pressure pumps

6 MW each motor

Energy Recovery System - ERI

Saving ~45% of the energy
required for desalination

8 membranes DOW-Filmtec
(Dupont) in each pressure vessel



BWRO (CASCADE) - BORON REMOVAL:

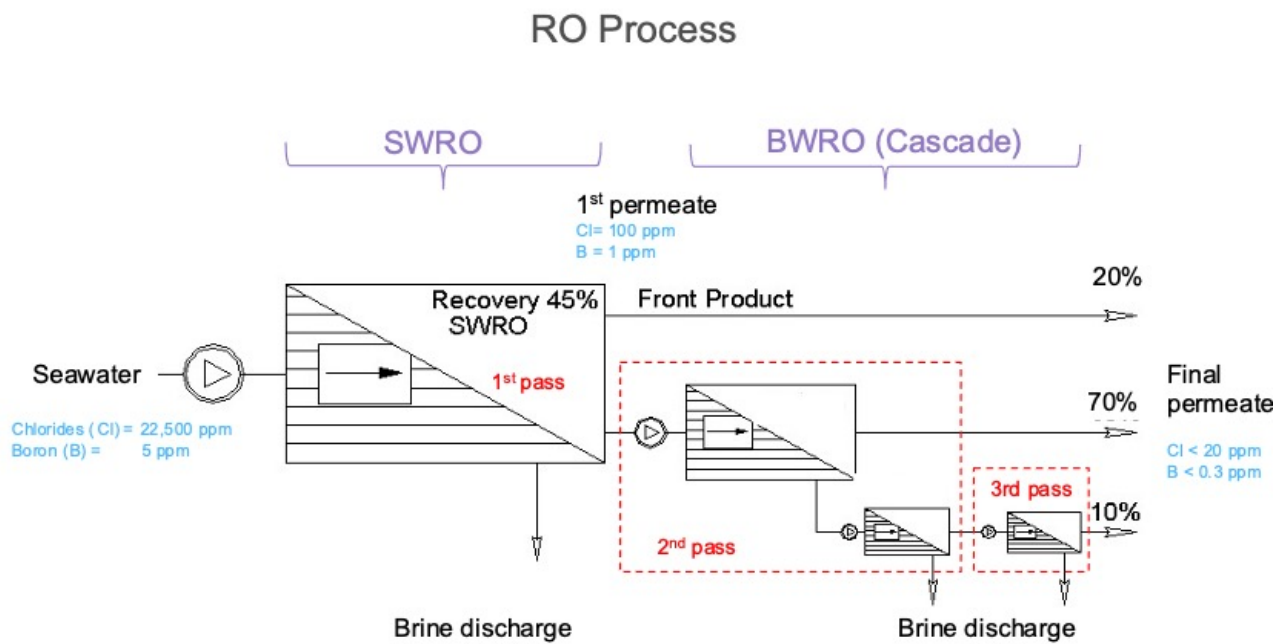


Boron required in final product 0.3 ppm

• Boron after seawater desalination ~ 1 ppm. Low rejection!



Additional desalination of the SW permeate at high pH (>10),
by DOW Filmtec brackish water membranes



POST-TREATMENT:

Reaction occurs in 5 up-flow reactors

Re-hardening by: Limestone + CO₂ & H₂SO₄

Addition of Calcium Hydroxide H₂SO₄

PRODUCT DELIVERY POINT:

90 minutes from seawater to drinking water delivery point

Drinking water production: up to 20,000 m³/hr (88,200 gpm)