

CITY OF CAPE TOWN, SOUTH AFRICA

DROUGHT EMERGENCY RESPONSE PLAN



Saltwater desalination plant at Strandfontein assists the City of Cape Town in its drought emergency response plan

THE CHALLENGE

The Western Cape's "once in a 400 year" drought meant that the Municipality of Cape Town had to consider alternative feed stocks for the production of potable water. The city identified seawater desalination technology as an appropriate solution.

OUR SOLUTION

PROXA, in joint venture with Water Solutions SA, designed and commissioned a 7.5 MLD seawater to potable water plant. The scope of work included the marine intake, onshore process plant, product injection and brine return. The Strandfontein plant's product water (potable water compliant to SANS 241) is injected directly into the city's reticulation network.

HOW PROXA ADDED VALUE

Speed, financing and innovation meant that PROXA was able to assist the city meet its requirements. Our ability to deliver units from an existing fleet of rental units, combined with global procurement, meant that we could meet the emergency timelines. And, given the context of the project, we provided off-balance sheet financing for the plant over a contractual period of 24 months with revenue collected from the supply of water into the city's grid.

Innovation in design and construction to ensure rapid installation and minimal site works further reduced the project programme. PROXA also built the desalination plant in a modular format to enable future expansion. What's more, given the shallow intake in the sea bay, robust pretreatment was implemented using advanced filtration cleaning systems to protect the membranes and ensure plant availability.

FEED WATER

Seawater from an open intake

PRODUCT WATER

Potable water compliant to SANS 241 injected directly into the City's reticulation network.

PERFORMANCE TARGET

◇ 7.5 MLD potable water

PROCESS

- ◇ Open water abstraction
- ◇ Screening
- ◇ Coagulation
- ◇ Advanced Media Filtration (MF)
- ◇ SWRO
- ◇ Disinfection
- ◇ Remineralisation

PROCESS RELIABILITY

A highly experienced team designed and built the plant with support from PROXA's local technical center. PROXA will continue to operate and maintain Strandfontein for the duration of the project contract. Full standby equipment was included to ensure that production is not interrupted during breakdowns or maintenance.

ENVIRONMENTAL PROTECTION AND COMMUNITY INVOLVEMENT

The City of Cape Town, PROXA and Water Solutions SA collaborated with the local community for input. Local skills were employed during the project construction phase and the building used to house the plant is designed to serve as a community hall once the project is concluded. At the end of engagement, the plant will be demobilised from site and the area will be rehabilitated.

The inclusion of an environmental officer from the onset of the project ensured minimal impact on the environment during construction.

Client: City of Cape Town