

# CASE STUDY



## CONTAINERIZED BRACKISH WATER REVERSE OSMOSIS DESALINATION PLANT

Desalinating brackish groundwater eases water shortage in Cyprus city

- **Location:** Limassol, Cyprus
- **Customer:** Cyprus Water Development Department (WDD)
- **Capacity:** 10,000 m<sup>3</sup>/d
- **Solution:** Containerized Reverse Osmosis Brackish Water Desalination

### Background

The city of Limassol in Cyprus was experiencing an increasingly severe water shortage, with the growing population and expanding tourist industry placing extra pressure on existing supply. An aquifer in a residential neighborhood was

seen as a potential water source, but had high levels of salts and nitrates. The Cyprus Water Development Department (WDD) awarded Fluence a Build-Own-Transfer (BOT) contract to implement a cost-effective solution.

### Challenges

The aquifer's location in the middle of a neighborhood meant limited land was available for the plant, and the equipment couldn't be noisy. Because production of drinking water was

the goal, the finished product had to adhere to very strict quality demands. Remineralization had to be accomplished using minimal chemicals.

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## The Solution

At the facility, the water passes through pretreatment multimedia filters and 5-micron filters before undergoing two-stage brackish water reverse osmosis. Minerals are added to the reverse osmosis permeate to prevent corrosivity

and to improve taste. Calcite filters are used to correct permeate water conductivity, and the water is chlorinated. Waste is disposed of via the local sewage system.

## Results

The plant was completed in record time, five months from order to completion. It produces 10,000 cubic meters a day of high-quality drinking water without disturbing nearby

residents. The purified water complies with all requirements of World Health Organization drinking water regulations.

## The Technology

- Pretreatment with multimedia and cartridge filtration
- Reverse osmosis
- Remineralization

