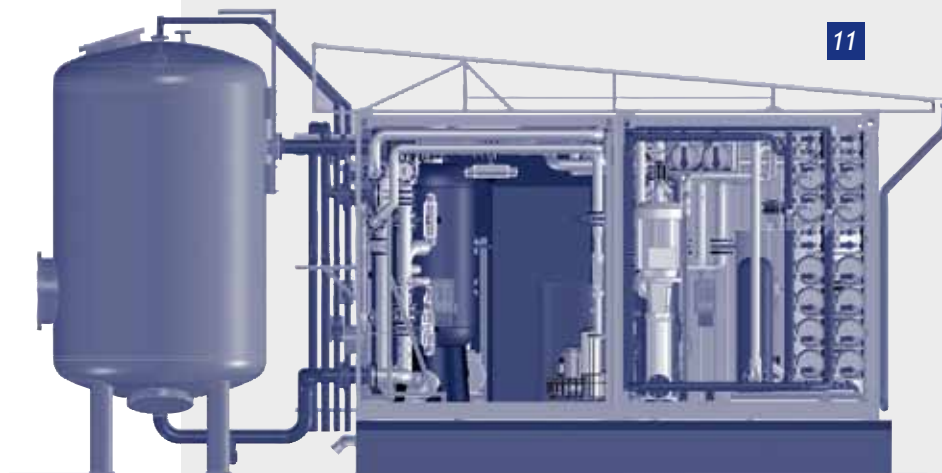


## PROJECTS

# OSMO delivers water treatment system to Namibia

11 Reverse osmosis system stored in a container



As part of modernisation in a copper mine in Tsumeb, Namibia, additional cooling systems are being installed and OSMO Membrane Systems was commissioned with supplying the water treatment plant. The spring water treated in this way will replenish a cooling tower in the form desalinated water from the end of 2014.

Scarce water resources require high water usage efficiency

The plant technology consists of a combined system for removing iron and manganese at the inlet side; desalination is implemented using a multi-stage reverse osmosis system. Due to scarce water resources, the customer placed special emphasis on the highest possible water use efficiency. In general, reverse osmosis systems work with a permeate yield of 75 to 80%, i.e. the treatment generates approx. 20 to 25% concentrate, which can only be used for undemanding applications. With the newly developed process technology “Factor X”, OSMO impressed the end customer: the main objective of the modified treatment technique is to increase the obtainable permeate yield without loss of quality. In this case, the obtainable yield – depending on the components in the raw water – is between 82 to 87% because the existing silicic acid level is very high at up to 35 mg/l. The permeate quality achieved is less than 50 µS/cm with an inlet quality of 2,500 µS/cm. The net plant output is 2 x 35 m<sup>3</sup>/h.

With the newly developed process technology “Factor X”, the permeate yield is increased without loss of quality.

Lower investment costs using mobile container units

To keep investment costs for building systems on site to a minimum, the customer decided for the plant to be erected using containers. The reverse osmosis systems were housed together with the air-conditioned control cabinet in two 40” containers. The upstream iron removal systems are situated in close proximity to the container, with all the valve technology being housed within the container to reduce possible adverse effects, such as a termite infestation. To keep the installation and start-up times on site to a minimum, the container units were completely assembled and pre-tested in the main OSMO factory, and accepted by the customer. The systems were then reassembled for sea transport. The system was put into operation in the fourth quarter of 2014.