

OSMO builds river water treatment plant in German chemical park

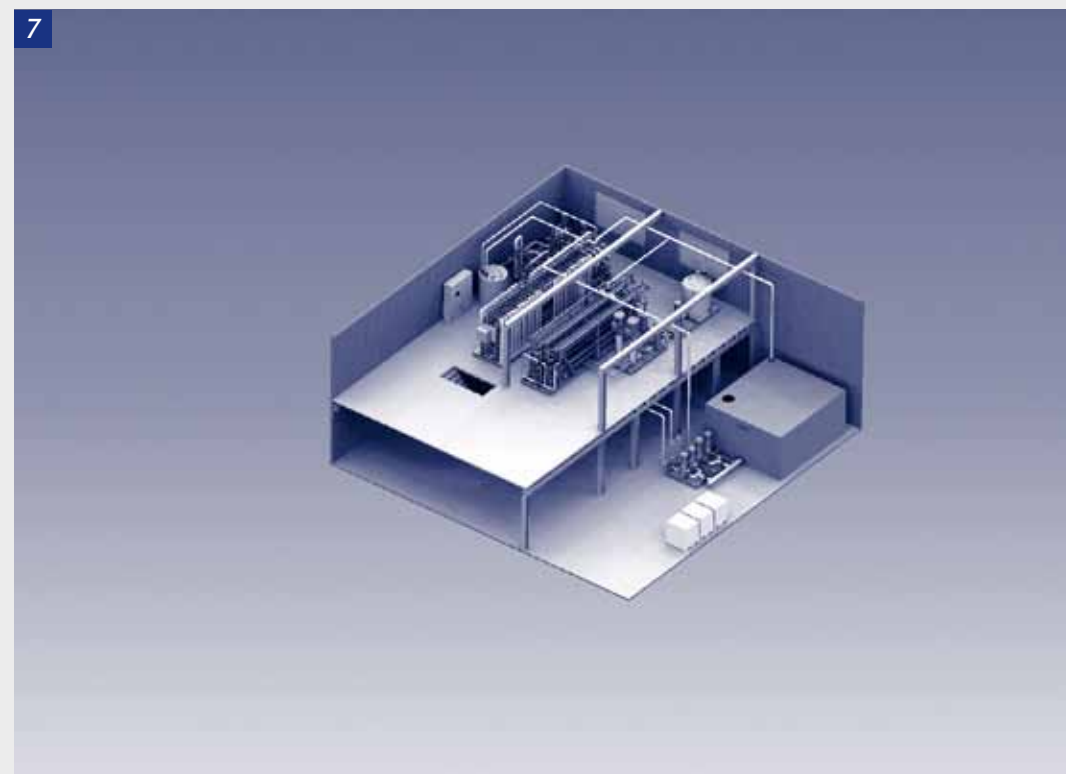
Not only does OSMO raw water treatment technology meet environmental specifications, it also offers economical benefits to the operator.

In the course of modernisation of the existing water treatment system for a chemical park in southern Germany, OSMO Membrane Systems was commissioned with the design and supply of the water treatment plant. The plant systems comprise pre-filtration, ultra-filtration and reverse osmosis.

Since more stringent environmental regulations prevent the utilisation of existing wells to full capacity, the previous chain of treatment had to be re-designed, or river water utilised for the processes. Since so-called surface water is, however, subject to strong seasonal variations in respect of salinity, temperature, solids and organic loading, a flexible and automatic water treatment concept was called for to guarantee a sustainable and stable chemical process. OSMO has many years of proven experience in this field – a similar plant has been running at a copper mill in Hamburg since 2002, among other – and was awarded the project.

How the plant works

After pre-filtration for the separation of coarse impurities, the ultrafiltration method is used to reliably remove any solids, regardless of the pollution level of the natural water. Disinfection of the water is also simultaneously assured. The dissolved salts in the UF filtrate are then removed in the downstream reverse osmosis plant. Organic and small colloidal substances, which potentially cause malfunctions in many production processes, are also removed. For steam generation in high-pressure boilers for instance, DOC values² are limited to



200 ppb only, to prevent chemical corrosion by organic acids in the water-steam cycle.

Higher organic loading is, however, also disadvantageous to many chemical processes, since this may lead to product soiling, e.g. visual flaws.

For residual desalination, the purified and desalinated water is then fed to the existing ion exchanger plant, which saves more than

90% of the regeneration chemicals due to pre-cleaning by the membrane systems.

The water treatment capacity of the OSMO plant amounts to approx. 2 400 m³/day and this can very quickly be increased to a daily capacity of 2 760 m³ by the integration of further modules, on customer request.

The plant was delivered mid-June 2012.

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2 The DOC value (dissolved organic carbon) is a parameter defining water quality