



Add value.
Inspire trust.

Water Services – Membrane Services

Increasing the performance of
Ultrafiltration/Nanofiltration/
Reverse Osmosis membrane plants

VISIT OUR
WEBSITE



Your challenges

Global demand for water is projected to exceed supply by 40 per cent by 2030. As desalination becomes a key source for clean water, Ultrafiltration (UF)/ Nanofiltration (NF)/ Reverse Osmosis (RO) membrane plants will be an integral part of water infrastructure worldwide. However, RO plant operation often reveals a troubled history of under delivery, interrupted production and unplanned cost increases due to higher consumption of energy and chemicals, event-driven unscheduled membrane replacement, degrading performance and shortened membrane lifetime.

What RO membrane services does TÜV SÜD provide?

TÜV SÜD offers complementary services, one focused on the characterisation of the RO membrane element condition and a second aimed at RO plant operations and maintenance optimisation. The unique value-maximising potential of the RO plant optimisation draws on the insights gained from element characterisation.

Why are these services important?

Plant owners and operators face constant pressure to save costs in terms of membrane replacements, consumables, energy and labour. Moreover, utilising common system-oriented operating KPIs is not sufficient for driving sustainable optimisation. RO membrane elements are critical to plant performance yet their condition is largely unknown and only indirectly measurable, as operations do not allow inspection of the complex physical-chemical processes inside the elements. This lack of comprehensive RO membrane condition documentation is a major disadvantage when seeking to optimise plant performance and engaging with membrane, chemical and other component suppliers.

How can we help you?

We help RO plant owners and operators with continuous monitoring of membranes through in-house accredited laboratories and technical advisory drawing upon extensive RO plant operating and troubleshooting experience. To realise the significant and sustainable optimisation potential that exists in an RO plant, deep

Case study

▪ Situation

Middle East desalination plant (24 MGD) experienced performance problems that impacted permeate water quantity and quality while adding to operating costs due to increased cleaning frequency, energy consumption and premature element replacements.

▪ Actions

Advanced inspection and testing techniques identified the root cause. Based on the findings, system design changes and different operation/maintenance practices for the pre-treatment and RO system were recommended.

▪ Results

Plant performance was restored and operating costs improved due to fouling reduction, optimised cleaning practices and increased element life.

understanding of the membrane element level lifecycle performance is needed. A sustained element-oriented understanding enables optimisation efforts to be qualified and quantified in a risk-mitigated manner. As an independent and impartial technical advisor, we are not tied to any vendor technologies. Our only agenda is the performance of your plant.

Our membrane services

▪ Continuous membrane element characterisation

A structured condition test programme is conducted on selected RO elements providing consistent and comparable information on the element condition. This detailed history supports preventive maintenance measures and Root Cause Analysis if performance degrades.

▪ Sustained fact-based UF/NF/RO plant optimisation

Leveraging your operating team's experience, we develop an integrated, prioritised optimisation programme targeting savings in consumables, energy and labour. Once sufficient plant operating history has been documented, an optimised operation and maintenance strategy is developed. It is prepared as a business case synthesising technical / financial / risk considerations and sensitivities.

Your business benefits

- **Save money** – with systematic UF/NF/RO plant operation and maintenance optimisation and extension of membrane life.
- **Sustain performance** – with in-depth operational insights of your plant, ensuring delivery of planned quantity and quality.
- **Minimise risk** – through increased plant production availability and reduced downtime of systems and components.
- **Enjoy global support** – with a worldwide network, access to leading practices in the RO sector and the best local knowledge in all key markets.

Add value. Inspire trust.

TÜV SÜD is a trusted partner of choice for safety, security and sustainability solutions. It specialises in testing, certification, auditing and advisory services. Through more than 25,000 employees across over 1,000 locations, it adds value to its customers, inspiring trust in a physical and digital world.

Related services

TÜV SÜD provides the following related services:

- Water Services – Water Efficiency
- Water Services – QA/QC
- Water Services – Risk Assessments

Our ASEAN offices

SINGAPORE

Tel: +65 6778 7777
Email: info.sg@tuvsud.com
www.tuvsud.com/sg

INDONESIA

Tel: +62 21 2986 5795/96
Email: info.id@tuvsud.com
www.tuvsud.com/id

MALAYSIA

Tel: +60 3 7859 8822
Email: info.my@tuvsud.com
www.tuvsud.com/my

PHILIPPINES

Tel: +63 2 687 5673
Email: info.ph@tuvsud.com
www.tuvsud.com/ph

THAILAND

Tel: +66 2 564 8041
Email: info.th@tuvsud.com
www.tuvsud.com/th

VIETNAM

Tel: +84 28 6267 8507
Email: info.vn@tuvsud.com
www.tuvsud.com/vn

Follow us on social media



@tuvsud



[linkedin.com/company/tuvsud](https://www.linkedin.com/company/tuvsud)



fb.me/tuvsudASEAN



twitter.com/tuvsudASEAN



youtube.com/tuvsud