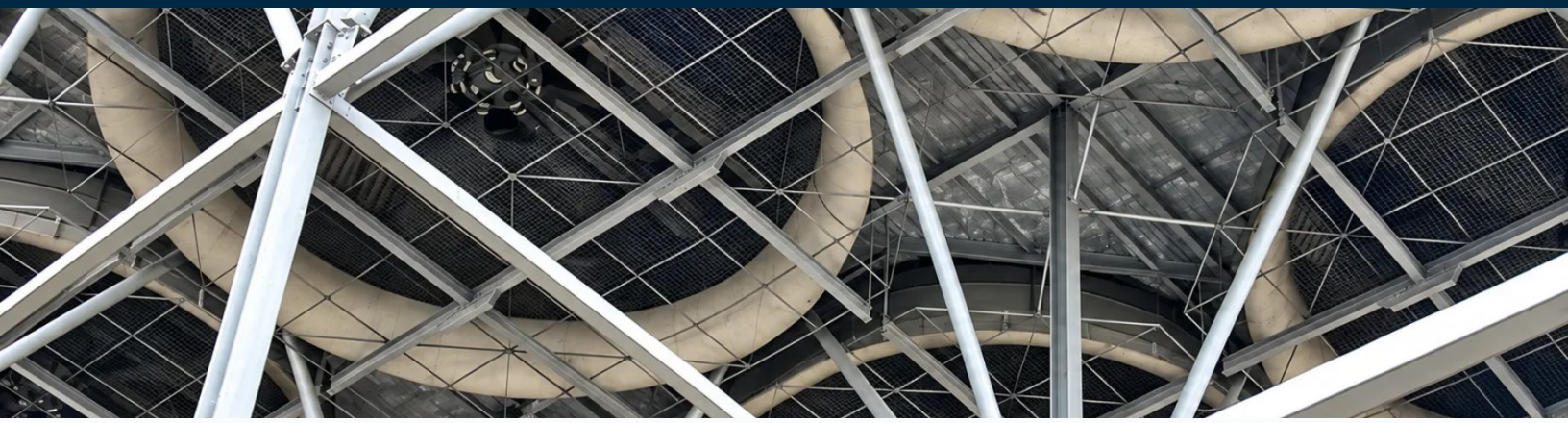
POWER GENERATION

24/7 seawater to demin for new coal power plant commissioning at a remote copper mine

A coal-fired station under construction in Chile's Lake District needed 315,000 GPD of demineralized water for a steam blow — more than its own plant could make. Ecolutia produced it from an open seawater intake.



CLIENT	LOCATION	SERVICE	DURATION
EPC – new build coal-fired power station	Chile	Commissioning: steam blow	7 months, 24/7

315,000 gal	0.06 µS/cm	>95%	<9.5 kWh/kgal
PRODUCED PER DAY	PRODUCT CONDUCTIVITY	SYSTEM AVAILABILITY	SEA-TO-DEMIN POWER USE

THE CHALLENGE

Demin from seawater, in a remote region

The steam blow phase required more treated water than the onsite plant — sized only for the station's daily needs — could produce. The customer needed an average of 315,000 gallons of demineralized water every day, continuously, to keep the steam blow progressing without interruption.

The project site is in a remote part of the country, and the only available feedwater source was an open seawater intake with a salinity of up to 51 mS/cm — demanding significant additional treatment before the RO membranes could even begin to treat it.

PROJECT SNAPSHOT

Feed source
Open-intake seawater (51 mS/cm)

Output quality
0.06 µS/cm · <20 ppb SiO_2

Flow delivered
220 GPM

Technologies
MMF, GAC, SWRO, BWRO, IX

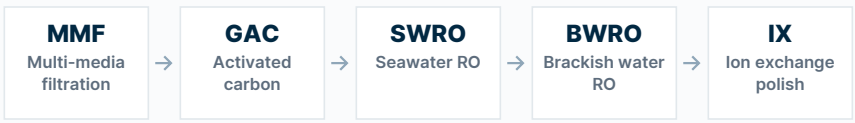
THE SOLUTION

Filtration, double-pass RO and regen-in-place polishing

Two Proteus systems provided two-pass multimedia and GAC pre-filtration to <0.5 NTU and <3 SDI at 660 GPM. A Triton SWRO (40% recovery, 99.4% rejection) and BWRO in series took conductivity from 51 mS/cm to just 5 µS/cm, and a third Proteus setup with duty/standby ion-exchange trains polished to the final demineralized water quality — regenerated in place to avoid shipping resin long distances to a regeneration service facility.

- ✓ PLC automation across the fleet, networked over Ethernet for data exchange and automated shutdown
- ✓ Remote monitoring enabling 24-hour production with fewer engineers needed on site
- ✓ Drinking-water-compatible chemicals — backwash and brine returned directly to the sea

TREATMENT FLOW PATH



THE RESULTS

Over 95% availability — with an unexpected extra step

Backwash intervals stretched to five days, keeping availability and water efficiency above 95% and the DI tanks permanently topped up, at under 9.5 kWh/kgal from seawater to demin. When the site's own ion-exchange plant was not ready, Ecolutia's engineers quickly reconfigured the fleet to polish evaporator water as well — and the steam blow completed quickly, entirely on Ecolutia water.

NEED SEAWATER TREATMENT?

Demin water from any source, fast.

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Talk to us about a similar project

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CONTACT US