

## RECORDED BENEFITS

- Minimized RO membrane fouling
- Reduced maintenance cost
- Reduced membrane cleaning frequency
- Maximized permeate output and quality
- Improved mill water quality
- Improved mill reliability

## Paper Mill Significantly Reduces Microbiological Fouling of Reverse Osmosis Installation

### Chargepac™ Coagulant and Generox™ TR Chlorine Dioxide Generation System

#### Customer Challenge

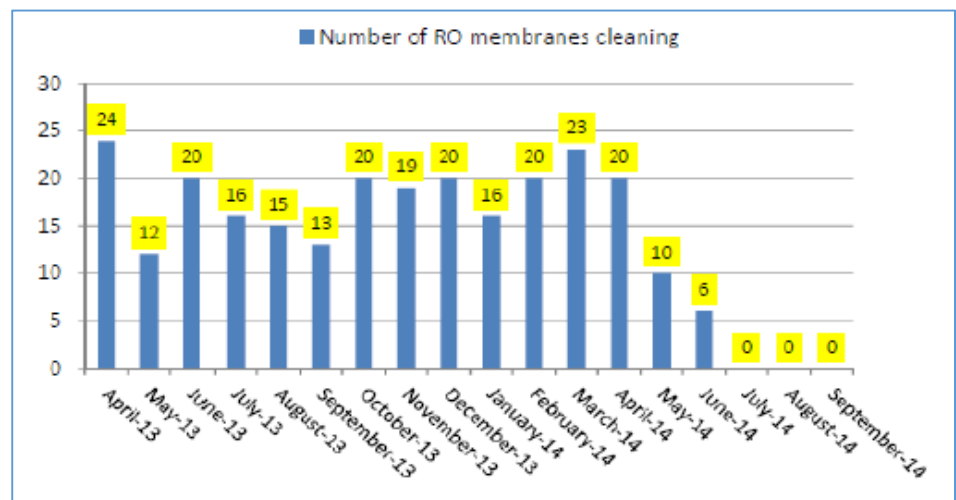
A European paper mill observed severe fouling on the reverse osmosis (RO) membranes utilized in the production of high-pressure boiler make up. Clarified and filtered river water was the source of the RO feedwater. This fouling resulted in high maintenance costs caused by frequent membrane replacement, increased membrane cleaning and permeate capacity loss. A membrane autopsy revealed that fouling on the reverse osmosis membranes was caused by two phenomena, aluminum silicate scaling and microbiological fouling.

#### Recommended Solution

Solenis proposed replacement of the aluminum-based coagulant with an aluminum-free Chargepac coagulant. Solenis also proposed a microbiological treatment program utilizing the Generox TR chlorine dioxide generation system, reacting Generox 225A and Generox 225B, to provide a selective oxidizer.

#### Results Achieved

These two Solenis solutions resulted in a significant reduction in fouling of the reverse osmosis installation. The frequency of membrane cleanings was reduced from 20 per month to zero. The Solenis solutions improved reliability of the whole pretreatment system and a significant reduction in maintenance labor and cost while maintaining and improving overall mill water quality.



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