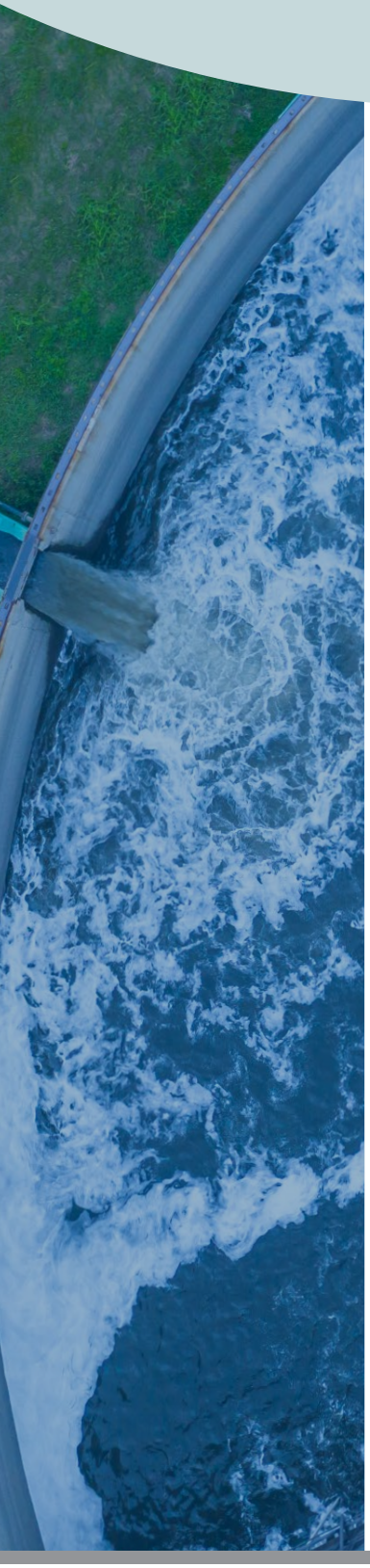
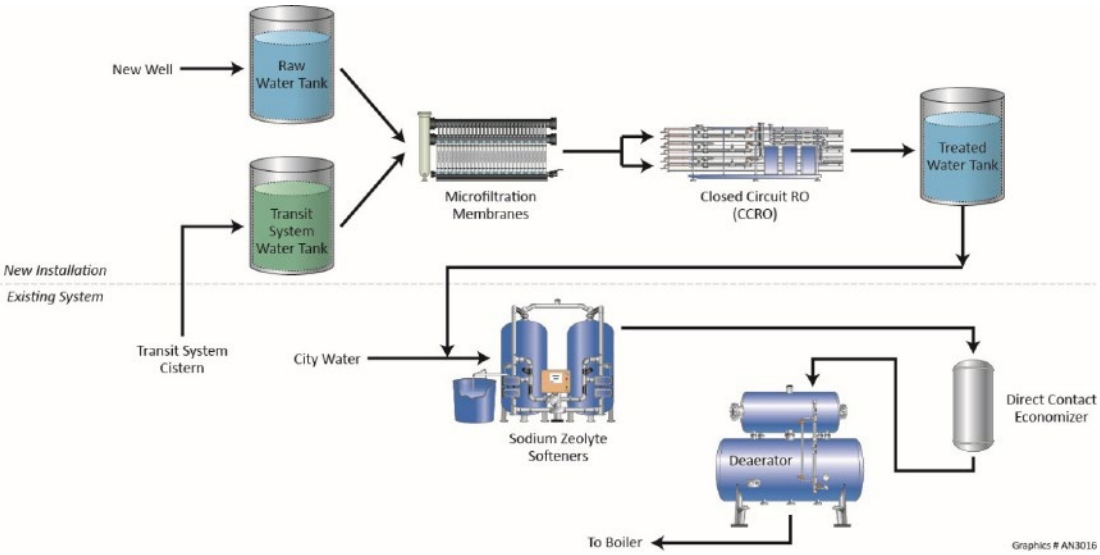
CASE STUDY

Steam Plant Saves $700K per Year with ChemTreat Reverse Osmosis Chemical Treatment Program



BACKGROUND

Every year, approximately 30 million gallons of ground water are collected in a transit system station in northern California. This water is then redirected to a steam generating facility, where it is filtered, purified, and made into steam to provide heating, hot water, and steam to buildings in downtown San Francisco.



The steam plant wanted to expand their use of ground water and potentially add an onsite well to reduce costs associated with using expensive municipal water.

The main issue to be resolved was controlling silica scale potential while producing the maximum amount of water possible. The ground water and city water vary greatly in quality, making treatment a challenge. The ground water has a high concentration of silica (up to 60 ppm), which causes silicate scaling on critical system assets.

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SOLUTION

The local ChemTreat team provided consultation on the process design and the chemical treatment program to help the steam generation facility expand their use of ground water. ChemTreat consultants generated dozens of projections that considered the blended possibilities of different water sources to help the customer achieve optimal water efficiency.

A technical expert from ChemTreat's pretreatment team visited the site to establish the cleaning methodology necessary to keep the machinery in top operational shape. A silica analyzer was installed, and the closed-circuit reverse osmosis system set up to automatically adapt the recovery to help prevent silica scaling. ChemTreat also began feeding silica antiscalant RL9009 and biocide CL206 for controlling microbiological fouling.

RESULTS

The automated treatment program constantly adjusts as the customer's process varies so water efficiency goals are met. The ChemTreat team was an active consulting partner throughout the process.

Adding ChemTreat antiscalant and controlling feed pH to slow down silica polymerization allowed the customer to reduce the frequency of reverse osmosis membrane cleaning from once every few days to once every few months. ChemTreat's water treatment technology and expertise allowed the plant to increase their use of ground water and potential well water while minimizing silica scaling, saving the plant $700,000 per year with a potential to increase that to $1,600,000 with the addition of an onsite well.

> *"ChemTreat's expertise and diligence has allowed us to maximize the benefit we are realizing from our water treatment investment and has allowed us to be one of the leading sustainability stories in San Francisco by saving 30M gallons of potable water a year."*
>
> *- General Manager*

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