CASE STUDY

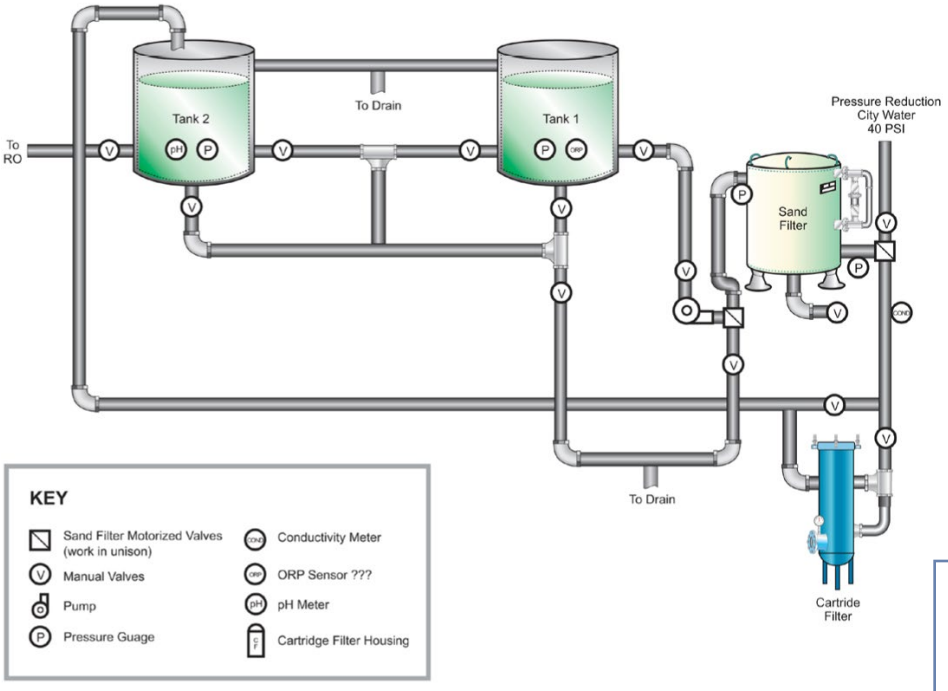
University Medical Complex Saves $500k in Annual Water Costs with ChemTreat Program

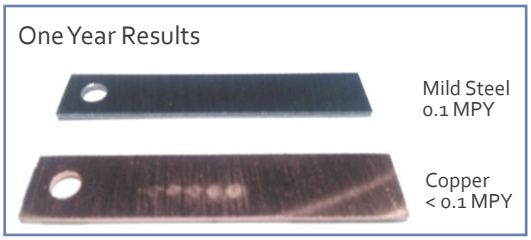
Background

A major university medical complex needed to replace more than a dozen aging cooling towers and add ten new buildings, all while transitioning to a centrally located chiller plant.
As part of this new system, the facility wanted makeup water to come from five sources, each with varying water quality properties:

- City water
- Available creek water
- Collected rainwater
- Retrieved condensate
- Reused, RO-filtered blowdown water

Facility personnel were also looking to save on costs and improve the sustainability of their water treatment program by extending the life of RO membranes and pre-filter cartridges, improving system monitoring, and reducing scale and corrosion.





Results are examples only. They are not guaranteed. Actual results may vary.

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Solution

The previous process was not capable of handling a new 32,000-ton centralized plant using multiple makeup water sources.

The university partnered with ChemTreat for in-depth expertise and on-site support with this project.

After a thorough system evaluation, the ChemTreat team provided a list of recommendations and worked with the university to implement the improvements.

CHEMTREAT'S RECOMMENDATIONS INCLUDED:

- Repositioning a sand filter in relation to the RO filtration system.
- Adding 1-micron filters to supplement the 5-micron filters for suspended solids removal (a limiting factor for RO membrane efficiency) to extend filtration run duration between cleanings.
- Implementing CTVista® intelligent water management software to solve communication issues.
- Enhancing the cooling treatment program to manage the variable water quality of five different makeup sources.

Results

Redesigned Pretreatment Process

- Pretreatment cartridge life extended from three days to over a month.
- Off-line cleaning times reduced from five hours four times per week to just three hours every three weeks, reducing downtime, system disruptions, and costs.

CTVista® Monitoring System Implementation

Thanks to the installation of CTVista®, all team members with data access could write reports and other observations within a centralized system, allowing all program participants to review data and determine the appropriate course of action.

Cooling Treatment Program Enhancements

- Biocide program improvements reduced bacteria counts from 10^3 cfu/mL to 10^2 cfu/mL.
- A consistent corrosion rate of <0.1 mpy established.
- Conductivity maintained at a consistent level throughout multiple water sources.

WATER SAVINGS

With ChemTreat's support, the university was able to save over $500,000 per year in water costs thanks to improvements to its water treatment processes.

Annual water savings from reclamation projects:

- **>12 million gallons of condensate**
- **>20 million gallons of creek water**
- **>25 million gallons of recovered blowdown**

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