



Manufacturing company meets water treatment challenge with Culligan's innovative solution

Challenge

A large Midwest manufacturer of PET (Polyethylene Terephthalate) plastic containers for conventional applications (i.e. soft drinks, food, juices, teas, sports drinks, beer, flavored alcoholic beverages etc.) needed to find an innovative solution to the water treatment challenges faced in its facility.

In the past, the company used city water in their manufacturing process. On average, the facility used approximately 600,000 gallons of water per month in Year 2008. Using city water posed four significant challenges for the facility. First, due to a scarcity of supply and significant demand, the company was charged a substantial rate for water. Second, the facility paid an additional surcharge to the EPA, due to the heavy water use. Third, the city water contained traces of Molybdate. As a result, the concentrated wastewater stream from the company's manufacturing facility contained high levels of Molybdate. The high levels of Molybdate were over the maximum limits allowed by the EPA and resulted in additional fines. Fourth, the salt used to regenerate the softener system and chemicals used in the cooling tower system required manual handling and posed considerable workplace safety concerns.

The company had very few options to continue operations in its facility. First, it would continue to use the city water supply and pay the resulting fees and EPA surcharges and fines. Second, the company could use an alternative water treatment company that supplied equipment to treat the water supply, but increase operating and maintenance costs — approximately \$100,000 per year. The third option was to use Culligan International as the total water treatment solutions provider to meet the company's water treatment challenge.

Benefits

The Culligan solution helped the facility increase equipment and process efficiency, reduce operating and maintenance costs, and reduce process and wastewater. The facility was able to reduce the city water use by 55%. The Culligan solution will allow the company to avoid EPA monthly surcharges. Furthermore, the facility will realize 23% reduction in salt as a result of the brine reclaim system. Using the RO systems to feed the cooling towers will increase the heat transfer efficiency and reduce scale inhibitor chemical costs. Overall, the Culligan solution will help the company achieve a cost reduction of approximately 50%.



We ask the right questions so you get the right solution.

The Matrix process begins with a Culligan professional working with you to identify your specific water quality needs. By understanding these needs we can customize a system that gives you everything you require and nothing you don't – saving you money and helping you increase your return on investment (ROI). At Culligan, we take pride in working closely with our customers so we can provide comprehensive industrial water treatment solutions.

Solution:

Culligan was able to provide an innovative solution that resulted in significant ROI savings. Culligan proposed a solution, which allowed the facility to use water from a well, treated with a combination of modular water treatment technologies in the Culligan Matrix Solutions arsenal. The solution included pre-treatment water softeners, reverse osmosis systems, a wastewater treatment system and a brine-reclaim system.

The first component of the Culligan solution is the water softeners. The softeners reduce hardness (calcium and magnesium) and iron from the well water and provide pre-treatment for the reverse osmosis systems. Furthermore, softeners ahead of the reverse osmosis systems prolong the life of the RO membranes and produce substantial cost savings. The membranes will need less cleaning and less frequent replacements reducing operating and maintenance costs.

The second component of the solution is the reverse osmosis systems. The RO systems are used to further purify the feed from the softener system and provide water to the cooling towers. Using reverse osmosis water to feed the cooling towers will reduce dissolved solids and scaling. This will increase the cycles of concentration and optimize the use of make-up water resulting in significant savings.

The third component is the waste treatment system that treats the waste stream from the reverse osmosis systems, the cooling tower blow down, the condensate and the oil skimmer. The reclaim system produces treated water and a non-hazardous land-fillable cake. In the past, high levels of Molybdate in the waste stream posed a substantial discharge challenge. The reclaim system allows the company to avoid costly EPA penalties.

The fourth component is the brine-reclaim system, which allows the company to re-use brine to regenerate the softeners. Furthermore, the brine-reclaim system is completely automated reducing manual handling and workplace safety concerns. With the Culligan brine-reclaim system the company will realize 23% in salt savings.

Finally, an end-to-end solution from a single source.



Place your commercial and industrial water treatment needs in the hands of a global leader.

For over 70 years, Culligan has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is completely dedicated to solving any and all water-related problems. As the unrivalled worldwide leader in water treatment, our sales representatives and service technicians know the local water conditions in your area. Being global and local ensures that no one is better equipped than Culligan to deliver customized solutions to any commercial and industrial water issues that affect your business and your bottom line.

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