



# Aluminum Bottling Manufacturer CASE STUDY

WATER & ENERGY  
▶▶▶▶▶▶▶▶ **SOLUTIONS**



## Aluminum Bottling Manufacturer Combats Water Scarcity and Meets Municipal Standards with KLEENWATER™ System *Recycling 85% of Daily Wash Water*

When an aluminum bottling manufacturer sought to combat water scarcity and meet stringent municipal standards, they turned to Kemco's KLEENWATER™ System to recycle wastewater. Located just outside of Mesquite, Nevada the facility was forced to comply with stringent municipal wastewater limitations. Kemco provided the facility with a customized KLEENWATER™ System that utilizes the rotation of membranes during cleaning periods for optimal production and recycling of water.



Kemco provided this customer with a nanofiltration system paired with the Kemco KLEENWATER™ System including ceramic ultrafiltration and wastewater reverse osmosis.

Given that its primary water usage is the washing of aluminum cans, this facility had a particular need for the reduction of chloride and metals. This wash water is processed through a deionized system that removes salts, chlorides and metals, leaving ultra-pure water required for sanitation.

The water used during the sanitation wash is then recycled. For the recycled water to be cleaned, the KLEENWATER™ System utilizes a ceramic membrane to remove any TSS (total suspended solids), TDS (total dissolved solids) or oils that have precipitated out.

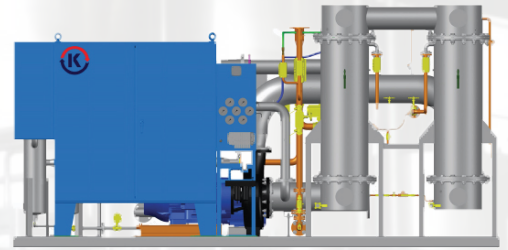
## Solution

This facility operates 24 hours a day and with a membrane cleaning cycle time of 8 hours. So, the Kemco team had to create a solution that allowed time for this cleaning to take place. Kemco designed a system that made water storage available during downtime and a rotation program between membranes.

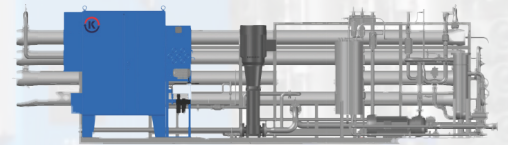
Membrane filtration uses a semi-permeable material that catches and holds a high volume of TDS. Membrane systems remove nearly 100% of contaminants in wastewater purifying it for safe reuse and discharge. In other words, membranes become dirty and need to be cleaned to maintain performance.

When one set of membranes is being cleaned, another set is kept on hand to be put to work. Instead of stopping production to clean membranes, they are replaced onsite while the other set of membranes is then rotated to be cleaned offsite daily.

### *KLEENWATER™ System Includes:*



Ceramic Microfiltration (CMF)



Reverse Osmosis (RO)

***Kemco designed a system that allows for 24 hour operation not halted by membrane cleaning.***

## Key Value

The KLEENWATER™ System installed allowed this facility to meet compliance and make a significant contribution in reducing its water usage. Using comparative data from a similar facility, it was determined that the facility would need a discharge permit. Additionally, this facility conducted a treatability test determining its non-compliance with municipal requirements. The KLEENWATER™ System allowed this facility to gain compliance and exceed expectations for water recycling.

## Key Environmental Value

Using the KLEENWATER™ System, this facility recycles 90% of daily wash water or approximately 85,500 gpd. (gallons per day). Since water scarcity is a growing concern for communities and individuals globally, facilities dependent on water must reduce water consumption and implement recycling measures. This facility relied on Kemco's team to gain compliance with a sustainability initiative protecting water as a vital natural resource.

## AT A GLANCE

***Facility Recycles 90%  
of Daily Wash Water***

***Approximately 85,500  
Gallons Per Day***