

Sustainable Cooling Water Treatment Technology

by Capture H₂O

Sustainable Treatment Technology

Capture H₂O, Inc. offers a patented water treatment technology for cooling towers that reduces water usage, eliminates blow down to the sewer and water treatment chemicals. Typical results are water reduction in excess of 40%, sewer discharge reduction in excess of 90%, total elimination of water treatment chemicals. The technology requires a small up front equipment purchase in combination with an annual service agreement. The equipment typically pays for itself in under 24 months based on water and sewer cost reduction. There are many other benefits of this technology such as additional LEED credits, carbon footprint reduction from energy reduction due to scale and biofilm removal, world class corrosion and bacteria control.

Implementation

If you are interested this technology, a representative from Capture H₂O will visit your site, conduct a brief system survey and provide a financial analysis.

The implementation of the technology will require the installation of the water pre-treatment system and an annual service agreement with Capture H₂O.

Please contact us for more information or to set up a visit to your site.

“ Water is our most important natural resource. Only 3% of all the water on Earth is fresh water.

Capture H₂O was organized to provide sustainable water solutions to its clients. Our mission is to deliver financially viable solutions that result in water footprint reductions without the bias of being affiliated with a specific technology. Water is our most important natural resource. Only 3% of all the water on earth is fresh water. Most of these fresh water sources are become contaminated and over utilized. This has and will continue to result in increased water prices and conservation mandates. Capture H₂O will identify and implement the most appropriate sustainable technology available to reduce and recycle the water at your facility. In addition, we look for ways to eliminate chemicals, reduce the energy and fuel needed to heat and treat the water in your facility.



Less Blue More Green

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A typical installation for a 1500 ton cooling system provides:

- Scale Control
- Total Microbiological Control
- Corrosion Control
- Water and Sewer Reductions
- Carbon Footprint Reduction
- Additional LEED Credits*



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Traditional Water Treatment Process

The goal of any water treatment program is to provide scale, microbiological and corrosion control throughout the cooling water system. This include the cooling tower, chillers, heat exchangers and the associated piping throughout the building. Traditional water treatment utilizes 2-5 chemicals in conjunction with a blow down controller to accomplish these objectives. This method of water treatment requires large volumes of water and chemicals to be discharge from the cooling water every day. Scale, corrosion and bacteria growth occurs when target chemical levels are not maintained in the cooling water or the blow down control equipment fails.

How Capture H₂O Technology Works

This technology utilizes high efficiency water softening in conjunction with the natural chemistry of the water to achieve world class scale, microbiological and corrosion control. Dual high efficiency softeners with a web enabled remote monitors are installed on the makeup water supply to the cooling tower. Scale control is achieved by removing the scale form ions from the water. After the recirculating water is soft, the need for blow down control is eliminated. The recirculating water begins to concentrate or increase in total dissolved solids. This allows the water to naturally increase in pH creating a biostatic environment. Bacteria and other pathogens cannot survive in the biostatic environment resulting in total microbiological control without the need for biocides. The biostatic environment occurs when the pH is above 9.5 and the conductivity is above 10,000 umhos.

Corrosion control is achieved by using the silica naturally present in the makeup water for the cooling tower. After the blow down control is eliminated, the silica levels in the recirculating water will increase in concentration. The high levels of silica, in the recirculating water exposed to high pH and total dissolved solids, will polymerize and absorb onto metal surfaces. This results in world class corrosion protection for all metal types throughout the cooling water system. Water and sewer reductions are achieved by increasing cycles of concentration and eliminating the need for blow down to the sewer.

Clean Tower Fill and Chiller Tubes

Capture H₂O Services

Capture H₂O will provide the following as part of the service agreement:

- Installation support
- Commissioning
- Operating Training
- Performance baseline
- Remote monitoring
- Monthly maintain & service
- Closed loop treatment
- Test equipment
- Reagents
- Performance Validation



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