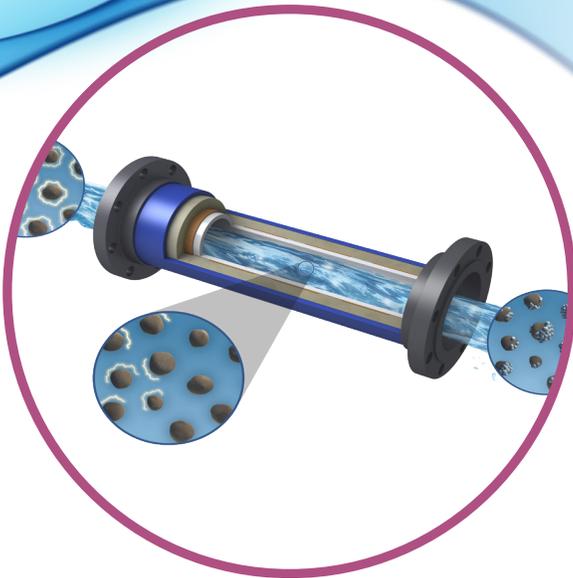




Wave 2.0™

Water Treatment Technology



MAKING WATER WORK

System Stability

Maximizing Cooling System Performance

Cooling Systems use a significant amount of water, which requires treatment in order to prevent scale, corrosion, bacteria growth and fouling. Wave 2.0™ chemical-free, water treatment supports stable system operation, as these common problems are under consistent control. To ensure the cooling system operates reliably, every Wave 2.0™ has updated InstAlert 2.0™, remote monitoring, integrated into the Control Panel.

Additionally, since nothing replaces the human touch, routine service by competent water treatment professionals – trained and certified by Griswold Water Systems – is a key component to a smoothly operating cooling system. That's why every Wave 2.0™ comes with a year of monthly, onsite service by our Certified Service Partners.

- ✓ InstAlert 2.0™ uses 3/4G cellular connectivity reporting to service providers and facility operators. This notification of system parameters supports rapid correction in the event of an excursion, avoiding expensive upsets.
- ✓ InstAlert 2.0™ can monitor up to 4 separate systems. Water conservation can be verified. Stored power allows an instant, emailed notification before a power loss would prevent such action. Control Panel is NEMA 4/4X and UL rated
- ✓ Optimal heat transfer efficiency is maintained: systems are free from scale and bio-film, manual cleanings are minimized, run-time is preserved.
- ✓ AutoSeek™ software allows for field correction if the Wave 2.0™ signal is compromised.
- ✓ Advanced system features such as UL approval of all sizes, NEMA 4 ratings, shop-durable construction, power efficiency, and more, contribute to long-term, cost-effective performance.



"A big part of the success has been Griswold's monthly service and their online monitoring. On a couple of occasions they have called me in the morning to check for a stuck tower float valve before my maintenance men even found it. It's perspectives and paybacks like this that are only realized years later."

John Porto, Florida Production Engineering

Wave 2.0™ Water Treatment Technology

Beyond Pulsed Power

Griswold Water Systems uses electrodynamic field generation to create uniquely effective electric fields in the flowing water of a cooling system. This digital technology far surpasses the voltage pulses created by yesterday's circuitry. Our innovative, micro-processor-based Wave 2.0™ produces electric fields that are significantly more stable and reliable than previously created using pulsed power. Wave 2.0™'s induced signal:

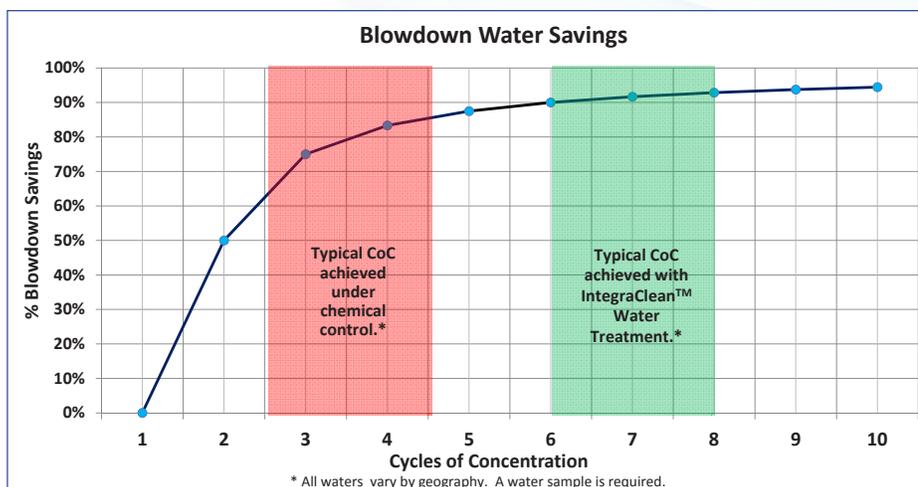
- ✔ Creates stable electric fields that are orders of magnitude more potent than those of other technologies
- ✔ Allows for routine Wave 2.0™ application as a low cost side-stream; excellent for retrofit applications
- ✔ Produces never-before-seen excellence in biological control
- ✔ Enables GWS to build a full range of sizes, 2" - 24"



Water Savings

Improving the bottom line

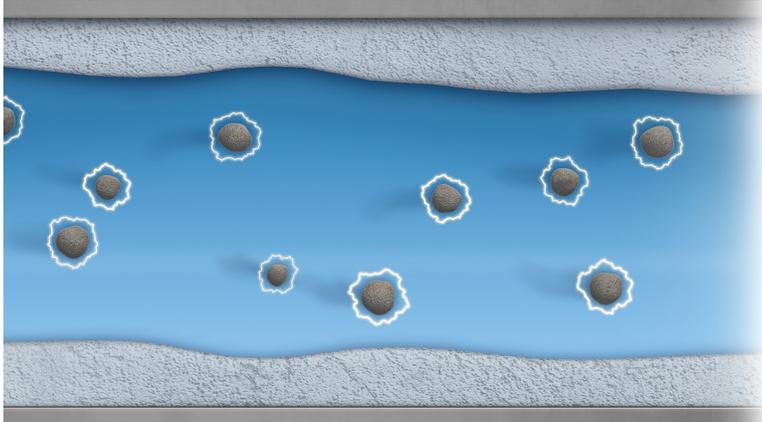
Both make-up and discharge water costs are dramatically reduced when Wave 2.0™ is engineered with GWS solids management as part of IntegraClean™. Higher Cycles of Concentration are routinely possible, chemical-free discharge can bypass costly sanitary sewer, and onsite reuse of discharge further enhances ROI. If these measures are put into use, dramatic operational economies are possible.



Improving C of C while reducing system upsets supports significant water savings. Blowdown discharge expenses are also cut dramatically.

An Elegant Process

Controlling Scale Through Electrodynamic Fields



- Evaporation causes minerals in the water to reach the point of saturation, and a driving force is created.
- CaCO_3 comes out of solution and forms hard limestone scale on the equipment surfaces



- The numerous suspended particles (dirt), present in the system water, would be acceptable sites for this CaCO_3 precipitation.
- A naturally occurring surface charge prevents the CaCO_3 from doing this.
- Minerals are forced to find a surface on the equipment.

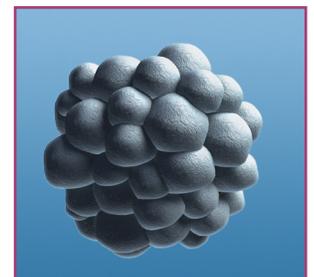
- Wave 2.0™ uses digital processors to create powerful electrodynamic fields.
- The alternating polarity of the fields removes the surface charge on these suspended particles, rendering them electrically neutral.



Without the surface charge, CaCO_3 will plate out around the particles rather than scale on the equipment surfaces. Two reasons it does this:

- Proximity - Particles closer than the equipment surface
- Relative Velocity – Particles flowing at the same rate as the CaCO_3 dissolved in the water.

- This creates a harmless, non-sticky limestone powder
- The powder particles keep growing in size over time until they reach 50-70 microns in size, and settle in the basin, or are removed by filtration (centrifugal separators are best)

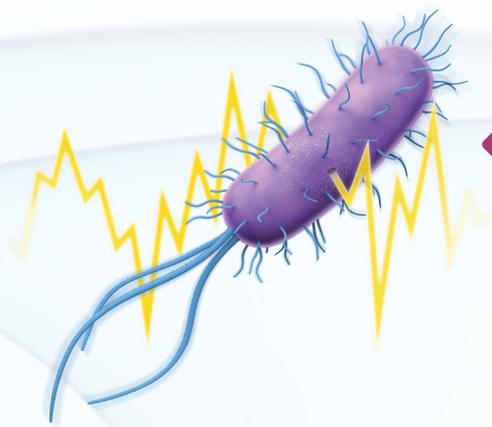


A Green Solution

Eliminating Hazardous Biocides

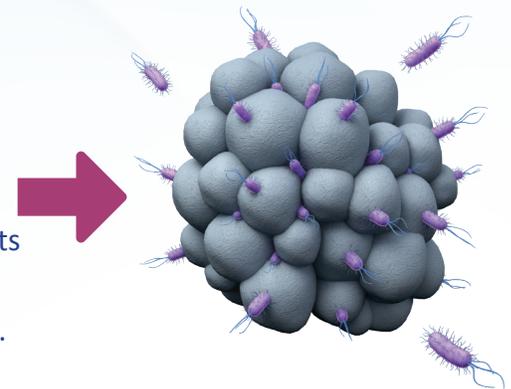


Wave 2.0™ provides reliable, consistent Biological Control, often to drinking water standards. This dramatic performance, which exceeds that of toxic biocides, uses these two methods:



Electroporation occurs when the extremely strong Wave 2.0™ electric signal strikes a bacterium, damaging its ability to reproduce.

Bacteria are subject to **Encapsulation** as they are drawn into the forming powder. Access to nutrients is limited and their reproduction is prevented.



- ✔ Wave 2.0™ chemical-free water treatment eliminates the use of millions of gallons of hazardous biocides each year.
- ✔ Wave 2.0™ use removes the risk of employee exposure to dangerous chemicals.
- ✔ Chemicals cannot become entrained in cooling tower drift nor contaminate discharge water.
- ✔ The absence of any chemicals allows the discharge water to be re-used for other purposes, such as landscaping.
- ✔ Substantial savings in water purchase and discharge costs accompany the knowledge that a facility is contributing to overall sustainability practices.
- ✔ Eligible for LEED points in several ways.

The Griswold Family of Companies

In The Water Business Since 1936

GRISWOLD WATER SYSTEMS | GRISWOLD CONTROLS | CLA-VAL

Our mission is to provide our customers with chemical-free water treatment that will allow their cooling systems to enjoy long term stability and operate in a consistent and reliable way. GWS pledges to guarantee customer satisfaction by:

- Engineering integrated water treatment and filtration products
- Maintaining a high level of applications experience and an in-depth water treatment knowledge base
- Manufacturing the best in shop durable products
- Providing dedicated field service to enhance our customers' enlightened operational practices
- Supplying exemplary electronic monitoring to augment regular human oversight



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