



# Jaytech, Inc. E-Newsletter

"A candid conversation about water treatment issues facing today's mechanical engineers."

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## Contact Me At:

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## Cooling Tower Cleanliness: A Must

Whether or not you have cooling towers or evaporative condensers, the cleanliness of the equipment is vital to your system's successful operation. Water treatment programs are designed to prevent scaling, reduce corrosion, and control biological growth in cooling systems. A proper water treatment program can increase your efficiency, improve the safety and esthetics of your system, and mitigate your legal liability.

The latest water treatment programs for open recirculating systems are highly automated, incorporating automated feed and control equipment and products that require little attention. An unintentional result of automating these systems has been that the owners of these systems discount the physical cleaning requirements of the system and put off routine maintenance until contaminants exceed the parameters of the water treatment program. The resulting scaling and fouling of these systems are not the result of a sub-standard water treatment program, but rather disregard for the manufacturer-prescribed maintenance schedule.

***"The extent of impurities in the air and water determines the frequency of most maintenance services and also governs the extent of water treatment which can vary..." – Baltimore Aircoil Maint. Manual***

Water treatment programs address scaling, biological contamination, and corrosion by utilizing anti-scalants which provide proper crystal modification to stop scaling, microbicides to control biological growth, and corrosion inhibitors to address aggressive water. Physical contaminants such as dirt, leaves, and food wrappers are unaffected by these chemicals and must be manually removed. In fact, easily biodegradable matrix' such as leaves and cottonwood debris can increase the biocide demand until the chemical becomes ineffective. Additionally, fumes from adjacent facilities as well as grease from food exhaust vents can contaminate the system and dictate the type of microbicides that will be effective.

## Helpful Links

<http://www.baltimoreaircoil.com>

<http://www.harmsco.com>

<http://www.evapco.com>



*“If the unit is located in an industrial area where there are chemical fumes, the impurities in the air will be washed out in the re circulated water and may cause scaling or corrosion.” – Evapco Maint. Manual*

So how can you keep your system clean?

First and foremost, ensure that your open recirculating system is cleaned as often as is specified in the equipment manual. This should involve pressure washing, rinsing, and vacuuming if necessary, per the instructions in the system manual. If access to the system is difficult, a catwalk can provide a safe working environment. In addition, the system should be visually inspected on a regular basis. Both BAC and Imeco recommend, “inspecting the general condition of the tower monthly.”

Next, follow the recommended maintenance service guidelines as listed in the Operating and Maintenance Instructions manual from your cooling tower manufacturer. Regardless of the manufacturer of your specific system, cleaning the pan or sump will be listed as the primary procedure, followed by non-water treatment related maintenance.

Lastly, consider the option of a cyclone filter for the open recirculating system. Many systems are prone to certain types of contamination including fertilizers, dirt, road debris, garbage, cottonwood, and bird droppings, among others. The water treatment program can bleed off dissolved solids but only physical removal can eliminate the larger debris. Filtration can “polish” the bulk water and effectively maintain a safe and clean system as well as reduce chemical demand.

For more information on filters, feel free to contact your Jaytech representative or visit Harmsco Filters online.

In order to maximize the effectiveness of any water treatment program for your evaporative condensers and cooling towers, removing the suspended solids and debris through physical cleaning is necessary. Proper, regular maintenance along with a comprehensive water treatment program will ensure a long, trouble-free service life for your evaporative condensers and cooling towers.

For further information on maintaining clean cooling towers and evaporative condensers refer to:

**Baltimore Aircoil**  
**P.O. Box 7322, Baltimore, MD 21227**  
**(410) 799-6200**  
[www.BaltimoreAircoil.com](http://www.BaltimoreAircoil.com)

**Evapco, Inc.**  
**P.O. Box 1300 Westminster, MD 21158**  
**(410) 756-2600**  
[www.evapco.com](http://www.evapco.com)

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## Welcome Newcomers

I would like to welcome several new members to this e-newsletter. If you know of anyone that would like to receive this e-newsletter just let me know and we will include him or her in future issues.

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### The Industry Insider – by Patrick Stimpert, SYSCO Food Services

So It's time to clean the sump again. I can remember being a new technician and being "gifted" with this task. The un-clogging, draining, shoveling, lifting, scraping, and grinding, oh the fun! As I aged, so did my knowledge of the potential problems associated with this seemingly simple task. The physical dangers alone should force discipline of a proper water treatment program, not to mention the scaling effects. Very early on in my refrigeration career, I spent the time to learn proper water treatment and realized that much of the backbreaking work and danger can be minimized with proper testing, calibration of control



equipment, and weekly maintenance of the system. The basic but critical bleed solenoid is one great example. The least costly item of the entire system, but ends up costing you the most overall in the water treatment program if not maintained properly. I can't begin to tell you the countless hours spent by refrigeration technicians unplugging or repairing this key component of the system. If the solenoid becomes plugged for even a short period of time you will lose money through man-hours cleaning the system, excess chemical usage, additional electrical usage, efficiency loss due to scaling, and possibly mechanical failures. Your daily rounds should look to see if this valve functions properly. Most of today's cooling tower conductivity controllers have a bleed-testing switch just for this purpose. I've seen several systems that use pre-screens or "Y" strainers installed prior to the solenoid to prevent plugs. This once a day check can save you a backbreaking day.

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### Jaytech Tip

*"Jaytech Tip-1" Does your cooling tower fill rest near or on the floor of the pan? This is common with some late model towers. If so, you will notice debris accumulating in the lower portion, in which scale and fouling will collect and adhere to. Consider customizing the bottom 5" of the fill by cutting it out thereby keeping the debris from accumulating.*

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## Next Issue:

Solid Chemical Feed Board Maintenance

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## Have an idea?

If you have an idea or topic you would like more information about, send me an e-mail at [mjuhl@jaytech.com](mailto:mjuhl@jaytech.com) and we'll answer it! Remember, it must be water treatment related and be of interest to other professionals such as you.

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