

TECHTALK NEWSLETTER V O L 201

**DELIVERING WORLD-CLASS** WATER TREATMENT PRODUCTS AND SERVICES LOCALLY







## **RID FOUL ODORS!!!** FROM YOUR CLOSED LOOP WATER SYSTEMS

AUG 2012

Foul odors originating from the closed chilled (or hot) water systems, besides leading to tenant and employee dissatisfaction and complaints, often are a symptom of a much more sinister scenario occurring within the capital assets of your building. Foul smelling water is often a sign of bacterial contamination that left uncorrected, could lead to significant damage affecting the integrity of the piping systems in your facility.

Closed systems often harbor anaerobic bacteria that can thrive in oxygen free systems. While not as prolific in systems that have oxygen (open systems) these bacteria can survive in oxygenated systems by living under deposits.

Sulfate Reducing Bacteria (SRB's) are anaerobic bacteria that reduce sulfates present in most waters to hydrogen sulfide. Hydrogen sulfide in very minute quantities (part per billion) is very noxious (rotten egg odor) and in most cases is the cause for the foul smelling water in closed systems. As mentioned, these are very corrosive bacteria and if left unchecked, could lead to piping failures.

Foul smelling chilled loop water can be remedied via the effective implementation of a complete water treatment program for your closed systems.

The first step is to send a sample to a laboratory that has the capability of identifying and quantifying the type(s) of bacteria present in the closed loops. Once the bacteria is identified and quantified. remedial action can occur via the addition of specific biocides. Keep in mind that while the type of corrosion inhibitor may have an effect on the overall bacterial loading on the closed system, corrosion inhibitors will have zero effect on preventing the corrosion that occurs as a result of microbiological contamination.

### **KEEP FOUL ODORS OUT OF YOUR CLOSED LOOP SYSTEMS!** GIVE ESSENTIAL WATER TECHNOLOGIES A CALL WITH ANY OUESTIONS **REGARDING THE INTEGRITY OF YOUR CLOSED LOOP SYSTEMS!**







# **KEEPING COMFORTABLE**

#### HOW MUCH DOES IT COST TO KEEP YOUR BUILDING COMFORTABLE?

Maximizing chiller efficiency through the implementation of a sound water treatment program can dramatically reduce / optimize the costs associated with running your buildings air conditioning system. Let's take this opportunity to examine a few of the cost inputs.

First, let's assume you have a 500 Ton cooling system that runs 24/7 during the summer months. Let's also assume the following:

Water/Sewer Costs: \$3.00 / 1000 gallons

Design kW /Ton: 0.50

Electrical Costs: \$0.06 /kWH

Cycles of Concentration: 4.0 Cycles @ 10 Degree Delta T

	\$ per ton	\$ per day
Water/Sewer:	0.14	70.00
Electrical:	0.72	360.00
Chemical:	0.08	40.00
Total:	0.94	470.00 = Total Costs per day

A loss of heat transfer efficiency via scale (1/64 inch) or microbiological (.001 inch) would result in a 10% increase in kW/Ton to 0.55 kW/Ton. Electrical Costs per ton would increase to \$0.79 which would in turn increase electrical costs per day to \$395.00.

Poor blow down control and/or an inferior water treatment program resulting in 3.0 cycles of concentration maintained in the cooling tower would result in Water /Sewer costs to increase to \$0.18 per ton and chemical costs to increase to \$0.14. This calculates to \$90.00 for Water/Sewer and \$70.00 per day for Chemicals.



Poor Water Treatment, besides reducing the life span of your capital assets, will lead to an increase in operational costs. In this example with a 500 ton chiller, daily operational costs increased \$85.00 per day. This equates to \$12,750 in increased costs per 150 day cooling season.



### **PROTECT THE CAPITAL ASSETS OF YOUR FACILITY!!** CALL ESSENTIAL WATER TECHNOLOGIES FOR A COMPLETE REVIEW OF YOUR EQUIPMENT LAY-UP PROCEDURES!!