SUSTAINABLE WATER TREATMENT TECHNOLOGY



WHY TREAT COOLING TOWERS?

SCALE CORROSION BACTERIA







INCREASES ENERGY, MAINTENANCE AND CLEANING COSTS

SHORTENS EQUIPMENT LIFE AND INCREASES CAPITAL EXPENSES

6X MORE INSULATING THAN SCALE AND HEALTH/SAFETY RISKS



TRADITIONAL WATER TREATMENT



Typical Tower Chemical / Control Installation



WHY DOES TRADITIONAL WATER TREATMENT FAIL?

- 1. PROGRAMS RELY ON BLOW DOWN CONTROL
 - SOLENOIDS FAIL
 - MAKEUP FLOATS FAIL
 - CONTROLLER REQUIRE FREQUENT CALIBRATION
- 2. MULTIPLE CHEMICALS NEEDED
 - DIFFICULT TO MAINTAIN PROPER DOSAGE
 - ONSITE INVENTORY AND SECONDARY CONTAINMENT REQUIRED
 - WATER QUALITY VARIATIONS
- 3. POOR CHOICE OF PROGRAM CHEMISTRY
- 4. INCONSISTENT SERVICE PROVIDER
 - LEADERSHIP AND TRAINING SUPPORT



CAPTURE H2O'S SUSTAINABLE APPROACH

- PARTNERSHIP WITH OUR CLIENTS
- IMPROVE FEED SYSTEM -
 - Use Solid Feeders and Solid Chemistry
 - ELIMINATE PUMPS AND TANKS
 - ELIMINATE CHEMICAL HANDLING AND TRANSFERS

INCORPORATE PERFORMANCE MONITORING

- USE EXPANDABLE COND/PH CONTROLLER PLATFORM
- OBTAIN REBATES FROM SOCALWATERSMART.COM
- MAKEUP AND BLOWDOWN WATER METERS
- REAL TIME CORROSION MONITORS
- FLOUROMETER TO CONTROL CHEMISTRY
- WIRELESS ROUTER AND AIR CARD
- **PROVIDE OPERATOR TRAINING AND MANUALS**



TYPICAL INSTALLATION



Typical Cooling Tower Installation



TYPICAL INSTALLATION





SOLID FEEDER EXPANDABLE PERFORMANCE CONTROLLER

TYPICAL INSTALLATION



CORROSION MONITOR

PRE-TREATMENT ON LARGE SYSTEMS



TYPICAL RESULTS

- WORLD CLASS SCALE, CORROSION AND BACTERIA CONTROL
- ELIMINATION OF LIQUID CHEMICALS, PUMPS AND TANKS
- WATER REDUCTIONS
- SEWER REDUCTIONS
- SIMPLIFICATION OF WATER TREATMENT PROGRAM
- MORE CONSISTENT AND RELIABLE PERFORMANCE
- WE BRING VISIBILITY TO YOUR COOLING SYSTEM



CLEAN COOLING TOWERS AND CHILLERS





CLEAN CHILLERS



TYPICAL CORROSION RESULTS

NACE INDUSTRY STANDARDS FOR OPEN RECIRCULATING COOLING WATER

	Excellent	Good	Acceptable
Mild Steel:	<2.5 mpy	2.6-4.0 mpy	4.1-5.5 mpy
Yellow Metal:	<0.4 mpy	0.5-0.8 mpy	0.9-1.2 mpy



TYPICAL MILD STEEL CORROSION - 1.5 MPY

TYPICAL COPPER CORROSION - 0.08 MPY



MICROBIOLOGICAL CONTROL

----- Bacteria 12,000 10,000 Total Aerobic Bacteria, cfu/ml 8,000 6,000 4,000 2,000 1,1,2,8,2,2,2,2,0,0 912112010 10/1/2010 10/25/2010 1182010 11/2/2010 132011 11172011 512412010 2011 4201 228201 1201 201,121,21,41201,2120101

Date

REMOTE PERFORMANCE MONITOR

- MONITORS WATER QUALITY, WATER USAGE, PRESSURE, CONDUCTIVITY AND PH AND CHEMICAL LEVELS
- MONITORS 24/7/365
- SEND ALARMS AND REPORTS TO USERS
- EXCELLENT DIAGNOSTIC TOOL



REMOTE MONITOR WATER / SEWER USAGE



REMOTE MONITOR CONDUCTIVITY AND PH



REMOTE MONITOR STEEL CORROSION



IMPLEMENTATION

- SITE SURVEY
- EQUIPMENT SIZING AND PRICING
- APPLY FOR REBATES
- EQUIPMENT INSTALLATION
- MONTHLY SERVICE

