

Start Date: August 18th, 2017

Cooling Tower System:
2x 450-ton towers

UET Reactor Sizing:
1x 4x4 UET Reactor

The Client:

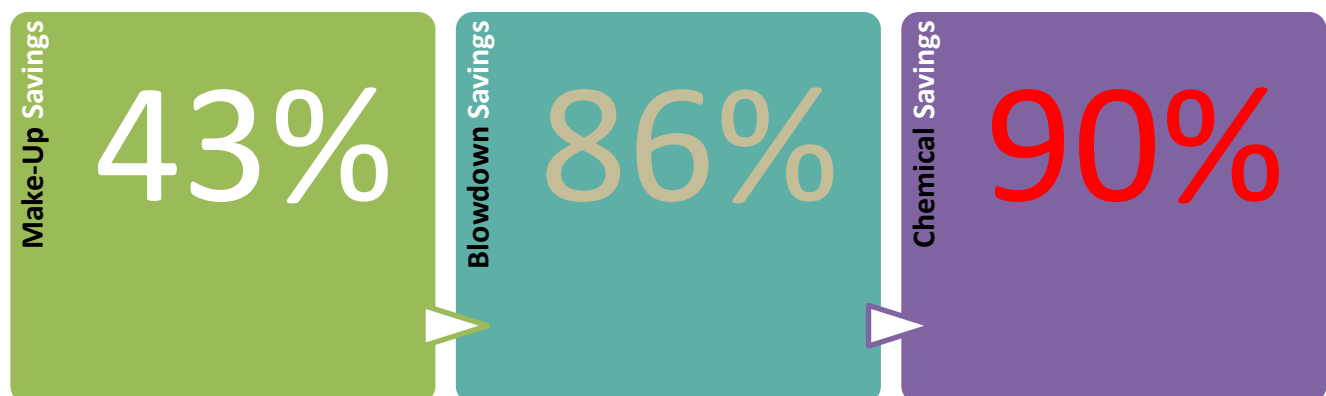
This installation is for a national aeronautics government group which specializes in aerospace development. This site is on a military installation located in California, whose challenges included water scarcity, bio-contamination, and scale issues. They turned to Dynamic Water for a sustainable solution to their water treatment.

Dynamic Water installed a 4x4 UET reactor skid, which operates at a blowdown setpoint of 6500 uS.



Savings:

	Before UET	After UET
Cycles	2	8
Conductivity Setpoint (µS/cm)	1,600 µS/cm	6,500 µS/cm
Annual Make-Up Water Usage (gallons)	8,000,000 (estimated)	4,600,000 (estimated)
Annual Blowdown Water Usage (gallons)	4,000,000 (estimated)	570,000 (estimated)

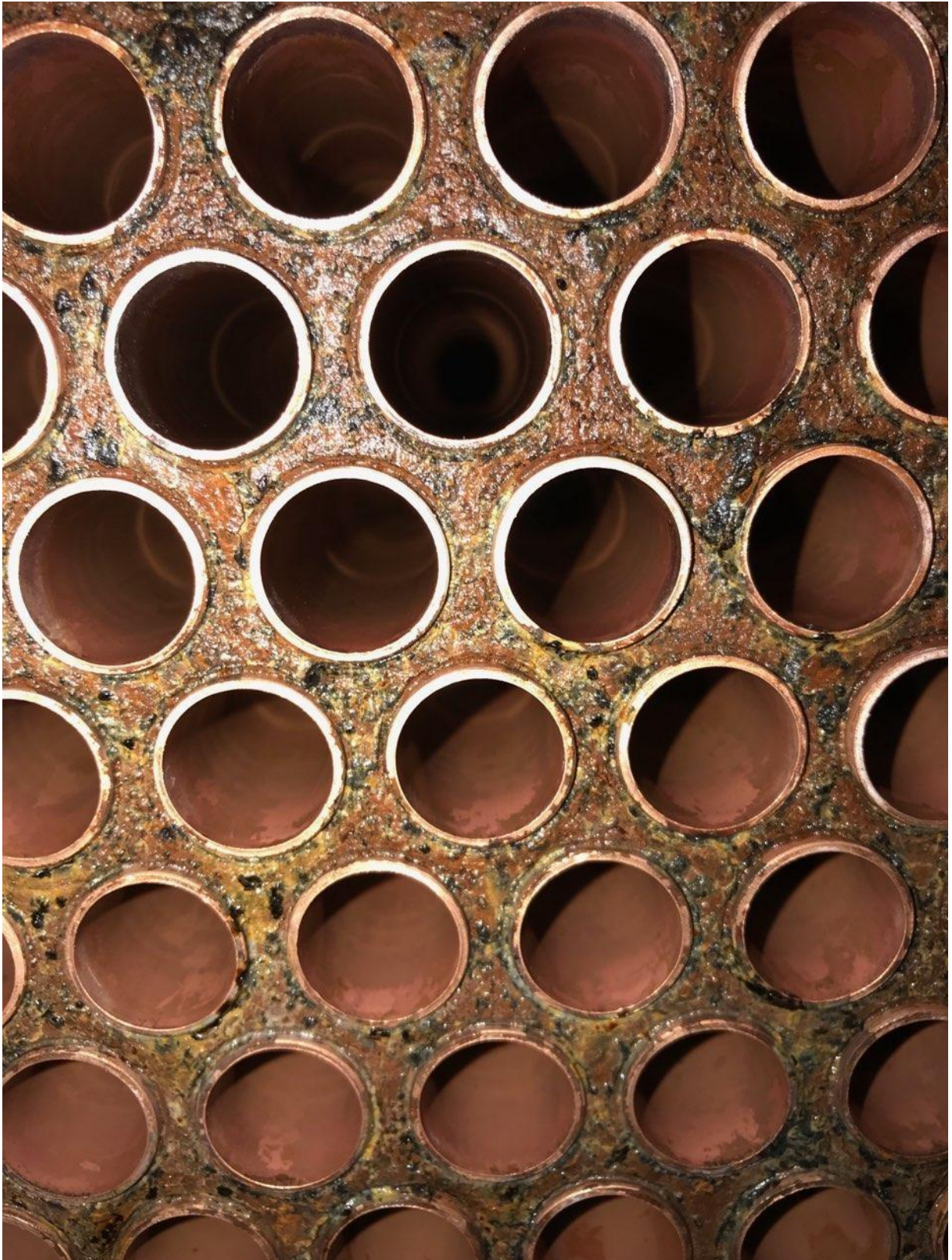


Accomplishments:

- Time Lapse Video: <https://www.youtube.com/watch?v=PPG4rizyS58>



Chillers opened after 3 months of operation:



- Water Savings –
 - Changing from an estimated 2 cycles to over 7 cycles of concentration yielded over 40% water savings.
 - Every year, this facility saves over 3.4 million gallons of water.

- Scale control –
 - Efficiencies in the heat exchanger have shown no signs of degradation in efficiency, with approach temperatures remaining flat with constant load.
 - The reactors remove roughly **1,200** pounds of scale a year.

- Corrosion control
 - Iron testing in the water consistently reads zero.
 - Coupon data from TRANE show negligible amounts of corrosion.

- Bio-contamination control
 - Regular dip slide results indicate that the towers have been maintained below the “Acceptable” CTI standard of 10,000 CFU/ml.
 - The only recorded algae bloom was in late July. As a response, DWT installed a supplemental biocide injection, which can be used for schedule dosing or shock dosage treatment.

Month	CFU/mL Aerobic Content
May 2, 2018	10 – 100 CFU/mL
June 12, 2018	100 – 1,000 CFU/mL
July 13, 2018	100 - 1,000 CFU/mL
August 10, 2018	0 – 10 CFU/mL (Bleach Installed 8-7-18)
September 18, 2018	0 – 10 CFU/mL
October 29, 2018	10 – 100 CFU/mL

DWT limits biocide usage to 1 gallon every 2 months, as too much sodium hypochlorite can generate scale in unwanted areas.

- Chemical savings – Addition of acids, inhibitors, biocides, and surfactants were halted indefinitely.