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Dedham Health & Athletic Complex installs Flowmark pulse power water treatment system - by Dan Cook

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Dan Cook

Conservation Solutions Corp.

The Dedham Health & Athletic Complex is a fitness and recreation facility also offering kids programs, health, wellness and medical services located in Dedham, Mass. Lloyd Gainsboro, manager of the Dedham Health & Athletic Complex, “Wanted to transition the water supply for two cooling towers from expensive city water to well water without polluting the water with expensive hazardous chemicals. We also wanted to eliminate calcite scale on heat exchangers caused by hard water from the well supplying the cooling towers.”

The Solution

The Dedham Health & Athletic Complex worked with Conservation Solutions Corp. to invest in a “greener” water treatment technology with significant financial benefits. A Flowmark electronic pulse power water treatment system was installed on two Marley cooling towers and associated heat exchangers. A simple retrofit, the Flowmark coils wrap around the existing pipe and plug into the FlowMark control panel with no down time. New pulsafeeder conductivity meters and blow-down valves were also installed to precisely control conductivity levels and save on water and sewer costs.

Eliminate Expensive Hazardous Chemicals to Control Bacteria: The FlowMark system completely eliminated all hazardous chemical use for the cooling system. Controlling bacteria using electronic pulse power systems is more effective than chemicals with bacteria counts consistently less than 500 colony forming units per ml (CFU/ml). According to the Cooling Technology Institute, Legionella is not a concern if bacteria levels are below 10,000 CFU/ml. The FlowMark system made the cooling system is safer.

Water & Sewer Savings: The FlowMark pulse power system increases cycles of concentration on the conductivity meter resulting in significant water and sewer savings of over 21,500 gallons per week.

Eliminate Calcite Scale & Biofilm = Energy Savings: The cooling tower water supply was switched from city water to well water. The well water is hard water with higher calcium levels. FlowMark pulse power system completely eliminates biofilm and calcite scale by changing the way calcium forms as water evaporates from the cooling tower. Instead of a hard rock scale on cooling tower and heat exchanger heat transfer surfaces, the calcium forms as a powder that drops out in the low flow area of the tower basin. Biofilm is also eliminated as it is encapsulated by the calcium and zapped by the FlowMark pulse power system. Eliminating calcite scale and biofilm saves energy.

Corrosion Control: The calcium powder acts as a natural cathodic inhibitor and effectively controls corrosion. The cooling tower water is also crystal clear.

Cleaner & Safer Environment for Staff: The Dedham Health & Athletic Complex staff enjoy a cleaner and safer working environment since biological control in the cooling tower is guaranteed without hazardous chemicals. Conservation Solutions Corp. technicians provide a monthly water treatment service where the cooling system water is tested for bacteria, pH, conductivity and chlorides. The conductivity meter probe is cleaned, the conductivity meter is calibrated, and the cooling system is inspected. Dedham Health receives a monthly service report summarizing the results.

Dedham Health & Athletic Complex also has the option to use the blowdown water from the cooling tower for secondary uses such as irrigation to further reduce expensive sewer costs. Gainsboro is very happy with the results of the FlowMark Pulse power water treatment system and is "Especially please about the reduced operating cost by not paying for expensive chemicals, saving water and saving energy."

Dan Cook is president of Conservation Solutions Corp., Acton, Mass.

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