



Conservation Solutions Corporation

Energy & Water Efficiency

FlowMark Pulse Power Eliminates Hard Rock Calcite Scale in Clean Steam Boilers Providing Steam to for Steam Rooms

Water Treatment

Eliminate Hard Rock Calcite Scale on Steam Boiler Heat Exchangers

THE PROBLEMS

Calcite scale is a problem with clean steam systems especially on heat transfer surfaces such as steam boilers or heat exchangers. The calcite scale causes:

- 1.) Fouling of equipment
- 2.) Increases energy use
- 2.) Causes additional expenses relate to heat exchanger replacement
- 3.) Difficult & time consuming to remove calcite scale often with a hammer drill

Calcite Scale Manually Remove from Boiler #1 with hammer drill



SOLUTION

Conservation Solutions Corporation installed a FlowMark electronic resonance pulse power water treatment systems on the water supply before two steam boilers. Boiler #1 had been cleaned and Boiler #2 had scale causing fouling.

The FlowMark Pulse Power System change the way calcium forms. Instead of creating a hard rock calcite scale, the calcium precipitates on the particles in the water to make a powder, which is either filter out in a filtration system or flows through the system to the steam room.

The FlowMark System also removes existing scale over time. Expansion & contraction occurs in the boiler with cracks forming in the calcite scale. Under normal conditions, the calcite would fill the cracks enabling the calcite scale to build-up. Using the FlowMark System, these cracks are no longer re-filled with calcite scale and the exiting scale eventually falls off. The existing scale also becomes softer and easier to remove. Calcite Scale is eventually eliminated from the heat transfer surfaces providing a long-term sustainable energy efficiency solution preventing future calcite scale from forming.



Dedham Health & Fitness Complex – One of Two Clean Steam Boilers



Heat Exchanger Elements heat transfer surfaces clean of scale after 3 months with FlowMark System

EXPECTED RESULTS

1. Energy Savings
2. Eliminate Existing Scale
3. Prevent New Hard Rock Calcite Scale from Forming
4. Reduce Cost to Replace Boiler Parts & Heat Exchangers
5. Significantly Reduce Maintenance