



## Case Study

**Customer:**

**Western Technology Center, OK**



US Case Study

**Category: Commercial Applications: Tankless Water Heaters and Cafeteria**



A bank of 6 Rinnai tankless water heaters



Before installation



After installation: clean sink area and tray

**The Challenge:** The Western Technology Center in Oklahoma was experiencing ongoing scaling issues in their cafeteria building requiring costly planned maintenance and chemical use. Six Rinnai tankless water heaters had to be descaled every month with the cleaning process requiring most of one day. The heaters are fitted with keypads that flash a “descale required” code when necessary. In addition, staff were struggling with scaling problems wherever water was in use in the kitchen and service areas. This resulted in regular cleaning to remove scale accumulation.

The commercial dishwasher was a particularly difficult problem requiring frequent extensive cleaning with harsh chemicals.



Previously, a wraparound scale prevention device had been fitted in an attempt to solve the scaling issues. When this proved to be unsuccessful a larger wraparound device was provided which was also ineffective.

**The Solution:** Fortunately, the Western Technology Center did not give up on their goal to find a chemical free solution to their scaling issues. After reviewing the company's website they called in Fluid Dynamics NA to assess their system.

The following equipment was specified and installed:

- A 2" Scaleton to treat the buildings main supply line.
- A ¾" Scaleton fitted before the commercial dishwasher
- A ½" Scaleton fitted to the feed for the ice machine and soda fountain

**Results:** The installations have been a great success. The tankless water heater keypads have not flashed the "descale required" code since the installation of the Fluid Dynamics equipment. The tankless water heaters are still checked and cleaned routinely every few months as part of the planned maintenance program but no hard scale is found, just a soft sludge that's easy to drain.

In the kitchen the results have been similarly impressive. The commercial dishwasher manufactured by Hobart no longer requires any attention for the removal of scale. The Hobart representative who periodically visits the Western Technology Center was shocked by the before and after results.

The kitchen surfaces that previously required chemical cleaning to remove scale are now easily cleaned without the use of harsh chemicals.

The ice machine and soda fountain are now scale free.

A detailed written testimonial follows from the Western Technology Center.







# WESTERN TECHNOLOGY CENTER

February 1, 2013

To whom it may concern:

Our facility is located in a very hard water area and scaling on equipment and all plumbing lines has always been a very difficult and expensive problem. We've tried many different treatment methods to remedy these issues with no success. We are a technology school and in early in 2011, we were continuing to have significant issues with limescale buildup in the kitchen area of the Culinary Arts Learning Center of our campus located in Oklahoma. This problem was very costly and time consuming for our maintenance staff. We tried a "wrap-around" device that was touted to eliminate the problems. When the original unit had no effect, the company sold us a larger unit, which was also ineffective.

I was searching the web for solutions to this ongoing problem when I came upon the website of Fluid Dynamics NA. In March, 2011, we purchased a commercial Scaleton unit from them and installed it on the primary water line that supplied six commercial tankless water heaters which provided hot water to the kitchen facilities. Prior to the installation of this equipment, including after the installation of the wrap around unit and the use of harsh chemicals for the cleanup of the water heaters, the red lights on the water heaters came on every three to four weeks indicating that scale removal was necessary. The cleanup was a time consuming, expensive task that took almost a full day about once a month. Since the installation of the Scaleton unit, the lights have not illuminated on the water heating units and the units have remained free of any hard scale. We do continue to clean the units every few months as a precaution and the black, hard scaling that we used to remove monthly no longer comes from the units. The cleaning process is done on a much less frequent schedule and takes approximately one tenth of the time that the previous clean up took. The only type of residue that comes from the heaters now is a soft gray sludge, which is attributable to the accumulation of total dissolved solids found in our source water. Without the formation of scaling in the heaters, these contaminants accumulate in the bottom of the units in a sludge form and are quite easy to clean out.

Our facility also experienced significant scaling issues with all areas of our kitchen and service areas that had running water associated with them. We treated our commercial dishwasher with a separate Scaleton unit. Before the installation of the Scaleton, it was necessary to extensively clean our dishwasher and use harsh chemicals on it to remove the scale buildup. This cleanup procedure was necessary frequently as we use our dishwasher continually in our operation. We also had an ongoing problem with the floor under the dishwasher accumulating a white scale buildup, which required cleaning several times per week. After the installation of the Scaleton, our dishwasher no longer has scale buildup and, therefore, no maintenance is necessary regarding scaling. We purchased our dishwasher from Hobart Company. Over a year after our installation, our Hobart representative was in our facility and was amazed at the condition of our dishwasher. He had seen it before the Scaleton and the contrast of the before and after condition left him in awe. Also, the floor under our dishwasher no longer turns white with scale buildup. It gets wet with every wash and we mop it regularly, however, if the water dries up there is occasionally a very light white "dust" type residue that cleans right up with a regular mopping. No more scrubbing and using chemicals on our floor.

We also installed a Scaleton on our ice maker and soda fountain. The results were the same. We no longer experience scale buildup on either and neither requires the extensive cleanup and scale removal that it once did. I would highly recommend the products of Fluid Dynamics NA. Our facility is cleaner and our equipment is protected from the costly effects of scaling since we installed this equipment almost two years ago. The elimination of the cost of scale removal, chemicals, maintenance personnel time and the repair or replacement of equipment resulted in savings sufficient to offset the cost of the Scaleton units within the first year. Again, we are very pleased with the results of this treatment method for our hard water problems. The personnel of Fluid Dynamics NA have also been attentive and responsive to our needs.

Best Regards,

Maintenance Supervisor