



Customer:

Pettit National Ice Center, Milwaukee, WI

Description of Business:

Pettit National Ice Center, located in Milwaukee, WI, is a U.S. Olympic Training Site and the only indoor sea-level ice oval in the U.S.

**Culligan Success Story
Pettit National Ice Center**

Pettit National Ice Center Cuts Operating Costs, Perfects Ice Quality with Culligan® Commercial and Industrial Solutions.

SITUATION/PROBLEM:

Pettit National Ice Center, located in Milwaukee, WI, is a U.S. Olympic Training Site and the only indoor sea-level ice oval in the U.S. The facility has helped many top speed skaters reach their Olympic medal dreams – while also providing a location for frequent national and international competitions. In fact, all of the U.S. speed skaters who have participated in the last five Winter Olympics have competed or trained at the Pettit Center. In addition, nearly 500,000 annual visitors take advantage of the Center’s ice facilities for recreational skating and hockey play.

In order to maintain the optimal speed and safety required by the Center’s professional athletes and its community visitors, ice conditions must be perfect. The Center’s oval is created through a layering process that takes one month to complete. Each layer of ice must be 1/100 of an inch thick and the oval floor must stay at 17-18 degrees to ensure each layer freezes quickly. The top layers of the oval must be periodically recreated to ensure a consistently smooth surface.

Achieving and maintaining this perfection can be a challenging process and it hinges on using only the highest quality water at all times. Impurities from city water can form a layer near the surface of the ice due to very organized water molecules below. This not only dulls the ice’s surface but also causes friction – which can pose safety hazards and affect speed skaters’ times. Impurities, oxygen and dirt can also increase the time it takes for water to freeze or prevent uniform freezing across the surface of the oval.

Unfortunately, the deionization (DI) system that was installed when the Center was constructed had become outdated. This led to electronic failures, inconsistent water quality and higher operating costs due to poor resin quality in the system’s tanks. As a result, the Center was running manual regeneration cycles twice per week, requiring 10,000 gallons of water every week and thousands of dollars in additional chemicals.



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Solution:

The Center contacted a local Culligan dealer to review its specific needs and identify an improved DI system to increase its overall water quality. After a thorough review, Culligan recommended utilizing an automatic deionizer system. The system uses ion exchange to reduce unwanted contaminants, delivers a flexible configuration of weak base or strong acid-base resin tanks and offers the option to automatically or manually control system processes.

Demonstrating its commitment to continuous product improvement, Culligan recently introduced the Culligan Premiere Deionizer System as part of the Culligan commercial and industrial water treatment product line. The Premiere Deionizer operates with fewer valves and offers a flexible configuration of single, mixed bed, or duplex alternating systems with optional automatic or manual controls – resulting in improved reliability. The Premiere System also features a pumped regenerant system that provides consistent regenerant usage and auxiliary outputs for controlling discharge neutralization.

The results/Customer Benefits:

Culligan's innovative approach to the Center's specific needs for high purity water resulted in a significant return on investment. The DI system is now part of a multiple process treatment system that produces high quality water required for the Center's specialized applications. The Center selected an automated DI system with a two bed, weak base resin tank. With these features, the Center can monitor both DI water usage and water quality – including the amount of total dissolved solids (TDS) – daily.

Choosing the proper size DI system for the Center's needs was critical, since they have very little time to regenerate – only Monday through Thursday each week. Regeneration cycles have been reduced to three to four cycles per month due to improved resin quality of the DI system's tanks and better control over when regeneration cycles occur. Regeneration cycles can be scheduled based on TDS and water volume or the Center can designate a certain time of day or week for regeneration cycles to occur. Controlled, consistent regeneration cycles have also reduced regenerant chemical waste because the same amounts of chemicals are used for each regeneration cycle.

This reduced waste will save the Center over \$5,000 per year in chemicals and reduce waste water by 10,000 gallons per week. Additional savings include an impressive 5% savings in annual energy costs from \$367,000 to \$350,000.

The easy to use, low maintenance Culligan system has also reduced the amount of time the Center's staff needs to spend maintaining and operating the DI system. Staff can easily monitor gallons used and total dissolved solids and regenerations can be programmed to take place overnight – providing peace of mind before national and international level competitions that require perfect conditions.

Culligan Advantages:

- Highly efficient and reliable products.
- Local, expertly trained service technicians with years of experience with these systems.
- Regularly scheduled water quality and system performance checks.



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