



Swim Academy Finds Effective Solution to Salty-Tasting Water, Clogged Injectors

Background

Propel Swim Academy, which opened in early 2018, is designed to provide swimmers and their families a clean, comfortable and friendly learn-to-swim environment. The award-winning facility, based in South Riding, VA, features three separate pools, including a full size 25-yard lap pool. The swim academy receives approximately 1,100 swimmers per week.

Having clear, safe pool water at all times was a top priority when designing this state-of-the-art facility. So was bather comfort. The facility features a cutting-edge air filtration system that creates a clean breathing environment for everyone – even those children who have respiratory problems such as asthma. Each pool is heated at 90° degrees F. and air temperature inside the facility is maintained at a steady 92 degrees F.

Water Too Salty

With bather safety and comfort being such critical components in the facility's design, management became concerned when Propel Swim Academy's patrons and staff began noticing a salty taste in the pool water. One 6-year-old even shouted out "it's like we're in the ocean!"

"We learned our salty tasting water was due to the liquid chlorine we were using in relation to our facility's advanced water filtration systems," Propel Swim Academy General Manager Nick Curl says. "One of the biggest advantages of our Defender® Filters is that they are Regenerative Media Filtration (RMF) systems that require no backwashing, providing us significant water and energy savings."

The academy's RMF systems also filter down to one micron, which is exponentially better than conventional sand filters, plus they take up a quarter of the space. Although they don't require backwashing, which provides numerous advantages, RMF filters cannot prevent the accumulation over time of Total Dissolved Solids (TDS) present in liquid chlorine. TDS levels in pool water have a significant bearing on bather comfort and water taste. Liquid chlorine contains sodium hydroxide (caustic soda), which is added by manufacturers to help stabilize the bleach solution. High sodium hydroxide levels in pool water can produce high TDS levels, which can adversely affect water taste, feel and balance.



Clogged Injectors

Besides salty-tasting pool water, liquid chlorine use also brought another persistent problem -- the facility's chlorine feeds were continuously getting clogged with salt buildup, especially at the injector fittings. "I had to go in and chisel through all three of them about once a month," Curl says. "And because there was no rule of measure, I had to frequently shut down each system to inspect the tubes. Sometimes they were okay and other times I'd find they were clogged so badly it could have seriously affected chlorine levels in the pool if not cleared out immediately." Along with manual chiseling, Curl also ran an acid solution through the feeders in order to get the injectors completely clean, and this often made the pH in the pool water drop too low. "All of this was both a pain and an extra worry that was 100 percent brought on by our using liquid chlorine."

Making An Important Switch

Propel Swim Academy needed a chlorination product it could be fully confident in, especially after its strategic selection and significant investment in state-of-the-art filtration systems and related equipment. To ultimately solve the problem, Endless Summer Aquatics, Inc., the facility's equipment, product and service provider, drained and cleaned all three pools, removed the 350-gallon liquid chlorine storage tank and related components from the site and installed three **Pulsar**® 45 chlorination systems in its place to serve the pools.

"The **Pulsar**® product with the Defender® RMF system is a good combination and allows operators to receive the full benefit of the filter's no backwash feature," Rich McGonegle, President of Endless Summer Aquatics, says. "With **Pulsar**®, the facility is putting in far less total product than liquid chlorine, so there's far less effect on TDS. Plus, it doesn't drive up the pH like liquid chlorine does."

The **Pulsar**® dry calcium hypochlorite briquettes and tablets provide a longer storage shelf life than liquid chlorine, thereby avoiding the rapid and wasteful degradation of chemical strength that can severely impede chlorination consistency. Also, the use of bleach can cloud the water. Studies have shown that



Pulsar® Plus Calcium Hypochlorite and chlorinators can provide significantly more consistent chlorine residual in the desired range than typical bleach systems, ensuring more accurate and dependable chlorine use. **Pulsar**® Plus calcium hypochlorite is also cyanuric acid free.

The Right Solution

For Propel Swim Academy, the problems with salty taste of the water were gone as soon as the facility switched from liquid chlorine to **Pulsar**® chlorine systems."

"Because the **Pulsar**® chlorine generates far less TDS in the water compared to liquid chlorine, salt accumulation in the pool is now quite low," Curl says. "The problem of clogged injector nozzles also vanished. We definitely use a lot less acid now and our alkalinity is much more stable. To bring alkalinity up, we're now adding sodium bicarbonate only one-half to two-thirds as often as we did back when we were using liquid chlorine."

Curl says that in terms of scheduled maintenance, periodically cleaning the **Pulsar**® units is certainly far easier than cleaning the injectors back when the facility was using liquid chlorine. "I can clean all three **Pulsar**® units in the time that it took me to clean just one injector fitting.

"Propel Swim Academy has been involved with swimming and education for over 20 years, and its new facility is its first opportunity to put everything it has learned to work in one place. With the recent switch from liquid chlorine to **Pulsar**® chlorination, personnel can now concentrate on providing effective, year-round, developmental swim lessons while having full confidence their facility provides its users a safe and comfortable environment.



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