



GREEN PURCHASING CASE STUDIES: MT. SCOTT POOL BENEFITS FROM A "BRIGHT" IDEA

CITY OF PORTLAND, BUREAU OF PURCHASES
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Park Services is so impressed with Mt. Scott's UV filter that they plan to install them at other City pools.

PURCHASING GREEN

In fall 2005, Park Services installed an ultraviolet (UV) filter at the Mt. Scott Community Center's indoor pool to address high levels of chloramines in the water. Although chlorine is an effective disinfectant, it reacts with organic material in pools (such as perspiration, body oil, and urine) to create

combined chlorine, or "chloramines." Chloramines are responsible for the bleach-like odor, eye and skin irritation, and respiratory problems often associated with chlorine. The UV filter, which is a supplement rather than a replacement for chlorine, uses light to destroy these offending chloramines.

As of September 2008, these filters were also installed at Mt. Scott's lap pool and at the Southwest Community Center's pools. Filter installation at the Matt Dishman and Columbia Pools is also planned.

BENEFITS

Within 24 hours of introducing the UV filter, the chloramine concentration of Mt. Scott's pool dropped from 2 ppm to 0.3 ppm—an 85 percent reduction. This dramatic decrease in chloramines has significantly improved water and air quality at the facility, creating a healthier environment for swimmers. Since chloramines are also responsible for the corrosion of unpainted metal surfaces—such as handrails, ladders, and a facility's heating, ventilation, and air conditioning (HVAC) system—costs associated with the upkeep of the pool are reduced.

The UV filter replaces more resource-intensive methods of controlling chloramines. Superchlorination, the standard practice of getting rid of unwanted chloramines in pools, involves adding ten times the amount of chlorine present in a pool and then adding

AT A GLANCE

WHO

Mt. Scott
Community
Center Pool

WHAT

UV filter

COST

\$ \$30,000-
\$40,000
per pool

\$ Reduces
maintenance
costs by
preventing
corrosion
of facility

BENEFITS

- ✓ Increases water and air quality
- ✓ Replaces more resource-intensive options
- ✓ Reduces swimmers' exposure to bacteria and viruses

more chemicals to bring the chlorine concentration back to normal.

Because a superchlorinated pool must be closed for up to two days until it reaches safe chlorine levels, the popular Mt. Scott pool did not use this approach. Instead, Park Services added fresh water to the pool by backwashing the filters twice a day and increased air circulation by opening doors and operating fans. This solution did not sufficiently reduce chloramines and also wasted water and energy.

In addition to reducing chloramines, the UV filter is adept at killing chlorine-resistant pathogens such as bacteria and viruses. Cryptosporidium, or "crypto," is one of these pathogens, an intestinal parasite that is increasingly becoming a concern for swimmers. UV filters sterilize 99.9 percent of crypto, significantly lessening the risk of infection.

COST

Adding a UV filter costs about \$30,000-\$40,000 per pool.

Although expensive, Park Services feels the gains in swimmer health are well worth the additional cost. The UV system is virtually maintenance-free, requiring only an annual replacement of its light bulb, which costs about \$2,200.

PERFORMANCE

UV technology has a long history of successful application. It has been used in the food, beverage, and pharmaceutical industries as a disinfectant treatment for decades. It's even routinely used to purify municipal drinking water. Using UV filters to sanitize pools is common in Europe, and Mt. Scott is one of the growing number of pools in the U.S. that is benefitting from this technology. The improvement in water and air quality at Mt. Scott has been significant, and Park Services anticipates this will attract more swimmers to the pool. Their experience has been so positive that they plan to install UV filters in other City-owned indoor pools and all proposals for new pools will include this technology.

"We are excited about the initial results of our UV system at Mt. Scott Community Center Pool and are optimistic that installing UV systems at all our indoor pools will not only prolong the life our buildings, but also improve the swimming environment for our guests. It has definitely been money well spent."

**Nancy Roth, Aquatic Program Supervisor,
Portland Parks & Recreation**

ABOUT PARK SERVICES

Park Services manages the extensive day-to-day maintenance of Portland's parks, gardens, and facilities as well as the operation and recreational programming of all community centers and swimming pools. Park Services is part of Portland Parks & Recreation, which is the steward of 10,000 acres of land at more than 250 locations.

FOR MORE INFORMATION

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