

All Seasons Energy Group Case Study: Silverlake Family Recreation Center Recreational Pool Erlanger, Kentucky

C A S E S T U D Y



Purpose

On November 3, 2006, Silverlake Family Recreation Center embarked on a test program to determine the savings that could be accrued by applying HydroPATH technology on the Recreational Pool. The purpose of the test was to improve the quality and clarity of the pool water so that the water would be more appealing for swimmers, to economize by reducing water and chemical consumption, and to operate in a more ecologically friendly manner.

All Seasons Energy Group proposed using internationally patented HydroPATH technology supplied by Savastat-USA to accomplish these goals. So, a P100 unit was placed on the water pipe before the filters and a W63 on the waterslide inlet pipe.

Method

A baseline test was run from November 3-13, 2006. This test consisted of a two-week period to collect baseline data, which was confirmed by comparing it with previous years' data. Then, from November 13-26, 2006, data was collected for two weeks with the P100 and the W63 operational. The Silverlake Family Recreation Center's aquatic staff compiled all the data.

Data

The data collected included the following: water usage during backwashing and make-up water, chemical usage, and utility usage. Since number of pool patrons for the baseline and the implementation phases were typical of past years, no correction factor was necessary.



The data was averaged for one week and projected for a year by multiplying. Then it was compared using simple percentages. Following are examples applying the backwash data, which show the greatest costs other than the utilities:

Backwash gallons **before** HydroPATH =

$$125 \text{ gpm} \times 5 \text{ min} \times 3 \text{ times per wk} \times 2 \text{ filters} \times 52 \text{ wks} = 195,000 \text{ gal per year}$$

Backwash gallons **with** HydroPATH =

$$125 \text{ gpm} \times 1 \text{ min} \times 3 \text{ times per wk} \times 2 \text{ filters} \times 52 \text{ wks} = 39,000 \text{ gal per year}$$

Before HydroPATH make-up water cost = 195,000 gal X .017 per gal = \$3315

Before HydroPATH backwash sewage cost = 195,000 gal X .027 per gal = \$5265

That is a total of \$8580 per year before HydroPATH.

With HydroPATH make-up water cost = 39,000 X .017 per gal = \$663

With HydroPATH backwash sewage cost = 39,000 X .027 per gal = \$1053

That is a total of \$1716 per year with HydroPATH.

With HydroPATH technology, make-up water and sewage per year and the cost of water decrease 80%.

Results

Below is a comparison of the costs **before** and **with** HydroPATH technology, using information compiled by the Silverlake Family Recreation Center aquatic staff:

	<u>Before</u>	<u>After</u>	<u>% Reduction</u>
Water	\$8580	\$1716	80%
Chlorine	\$1560	\$ 780	50%
Acid	\$1044	\$ 522	50%
Electric	\$1000	\$1000	0%
<u>Natural Gas</u>	<u>\$24,000</u>	<u>\$18,000</u>	25%
Totals	\$36,184	\$22,018	39%

A savings of \$14,166 would accrue annually.

In addition, the staff noticed an increase in the water's clarity and a reduction in chlorine (chloramines) odor.

Conclusion

The Recreational Pool would maintain better quality water with the continued use of the P100 and W63 units with HydroPATH technology. The members would be more satisfied with their recreational swimming, and these products would pay for themselves within 15 months. The decreased costs would amount to a savings of about \$71,000 over a five-year period.

Recommendations

Based on the data from the tests, All Seasons Energy Group recommends that Silverlake Family Recreational Center purchase the P100 and W63 units. Also, the Energy Group suggests similar savings would accrue by using Savastat-USA's HydroPATH units on the Olympic Pool. Finally, other water treatment options, involving Savastat and HydroPATH systems, would eliminate the need for a costly water softening system and would increase the life of water heaters and steam generators while reducing operating costs.

With these improvements, Silverlake Family Recreational Center can economize and help improve the environment by reducing amounts of energy needed to operate the facility.