

Midwest Breezes



Burning Sulfur, Jeff Leonard, Chalet Hills Golf Club

We generally associate high pH and bicarbonates with water that is drawn from deep wells, but at Chalet Hills the ten-acre irrigation reservoir is fed entirely by surface water. It has tested as high as 8.9 pH, and the bicarbonates are also quite high.

For the 2006 golf season, Jeff Leonard used a sulfur burner to lower the pH of his irrigation water. The concept is fairly simple: elemental sulfur is loaded into a hopper which gravity feeds to a combustion chamber at the base of the unit. As the material burns, sulfur dioxide gas rises into an aspirator where the gas is scrubbed out of the air by irrigation water. The water which flows out of this process is a concentrated sulfurous acid solution in the range of 2.0 to 3.0 pH.

The discharge from the sulfur burner flows into Jeff's reservoir 20 feet away from the pump house intake line where it quickly dilutes. Jeff reports that the irrigation water is in a range of 6.0 pH. The sulfur burner does not provide the precise range of pH control that acid injection does, but for Jeff's purposes the concept has worked very well.

The black layer which had become a growing concern in his USGA greens is almost completely gone after only one season of using the sulfur burner. The overall health and color of Jeff's irrigated turf is noticeably improved. An unexpected benefit is the complete eradication of algae and several aquatic weeds in his irrigation reservoir. Jeff built a trailer for the sulfur burner so that it could be moved to other ponds on the property to clean up algae infestations. Apparently algae can not flourish in

non-alkaline waters; this might explain why the lakes in the north woods are generally so clean.

When the irrigation season began, Jeff connected the sulfur burner to the pump house. The unit ran all day every day until the end of the irrigation season. This year Jeff used 3 to 4 fifty-pound bags of elemental sulfur a day. By the end of the year Jeff used approximately 10 tons of material, at a cost of \$200/ton.

Brad Anderson, CGCS



Elemental sulfur in its purest form.



Jeff's portable sulfur burner on wheels.

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