

An Unfortunate and Unique Distinction

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North Oaks Golf Club

North Oaks Golf Club has the unique and unenviable distinction of being one of only a few clubs in the state of Minnesota being impacted by the non-native and invasive species: the Zebra Mussel. Because our irrigation source is directly connected to the Mississippi River we are prone to challenges presented by the pesky mollusk at several levels.

At the intake to our pumps we must be diligent to limit the growth and subsequent encrustation of the suction lines whose purpose is to pull water from Pleasant Lake. To do this we employ the dive team headed by Tom Suerth of Waterfront Resources to scrape the screens in the early fall. This half-day project removes the adhered mussels from the intake screens and allows for free water to be drawn into the pumps prior to being

The treated water isn't harmful to humans and is typically more neutral than rain water.

The final element we must control is the impact of crushed Zebra Mussel shells that are drawn into the system during the operation of the pumps. Most are unaware that the Zebra Mussel doesn't always reside in one location. In fact, it isn't unusual for this nasty invasive to

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"swim" through the water system adhering itself to one object for a while and then again to another. During this floating stage the creatures are susceptible to being pulled into our suction lines along with the irrigation water.

The shells are then crushed by the



Tom Suerth, left, and his trusty diving buddy, Derek Lee, are all smiles before they take the big plunge!

impellers of the pumps and pushed into the main line to either be blown out of the irrigation heads or in an isolated case, the small bits may plug an irrigation head or valve creating either a wet spot or a dry spot. This can be very frustrating for the players and Green Staff.

The solution to this malady will be the installation of an automated self-flushing filtration system designed to remove debris down the size of a grain of sand. The unit will be manufactured this winter and installed first thing in the spring.

Yup, Zebra Mussels are here to stay. And yes they are an issue to contend with. As they continue to expand their presence we can only hope that a natural predator is discovered to help control this nuisance pest.



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sent onto the golf course. Because the Zebra population is exploding, we anticipate having Tom's crew out twice each year begging in 2012.

Once in the main line our water is monitored for pH level. This reading is critical in the management of the Zebra Mussel larvae. Zebra Mussel larvae are sensitive to slightly acidic water. To reduce the pH of our water (often as high as 9.3) to 6.4 we inject a nitrogen buffered sulfuric acid into the main lines. Once treated the water cannot support healthy larvae or even small Zebra Mussels that may have been sucked into the system.



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This photo depicts the size of a Zebra Mussel as it lay next to a set of keys.