

On the Wastewater Front

Communication key to successful effluent irrigation program

By Vicki Martz

Water quality and availability are probably the most important issues facing our citizens and businesses today. The depletion of this precious natural resource is a concern for us all.

The need to recycle water is mandatory in many states and will be a component in many of our future development and business decisions. Recognizing this need makes economic sense, especially when the cost of fresh water rises as supplies dwindle.

This, however, does not always translate into acceptance by a public that's wary of government intervention and skeptical of the technology that promises to clean the water to an acceptable standard. Public comfort has everything to do with public knowledge. Many citizens educated about the recycled water benefits for their communities will accept it.

One area of acceptance by the general population is the use of wastewater for irrigation on golf courses. Many courses have voluntarily or by mandate turned to effluent water for their irrigation needs. Their experiences, however, reveal the need for better and up-front communication between the effluent provider and the superintendent before a deal is struck.

Arizona, California, Florida and Texas are states in which potable water shortages have already led to a comprehensive use of effluent water for golf course irrigation. There are few standardized guidelines, however, among municipalities in these states. Issues as diverse as wastewater quality, what degree the water has been cleaned, and charges the treatment facility imposes on the end-user are areas of conflict that need to be resolved — especially as more states anticipate using effluent sources to conserve their water supplies.

The effluent or wastewater from sewage treatment facilities is generated in large volumes. Even when treated to third stage (tertiary), the wastewater often can't be released into existing streams or rivers.

However, providers (municipalities or private treatment facilities) assume that golf courses can easily use the water directed to them.

A golf course appears to be the perfect recipient of this treated water. However, providers have little understanding of the requirements and complexities of maintaining turf with the concentrations of metals, salts and nitrates that can be found in effluent water, even after third-stage treatment.

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ing the turf's water absorption. If the original potable water source is high in salts and picks up additional salts in the treatment process, the reclaimed water might be toxic to the turf over time, especially on heavy clay soils. Tight clay soil does not allow salts and metals to move through it. In both instances, a constant water testing program will determine if and how much fresh water should be mixed with the effluent to flush out these accumulations.

Industrial sources of effluent can have a high concentration of heavy metals, another source of plant toxicity. Initial water analysis can provide information on the amounts of the dissolved salts and solids. With this knowledge, the treatment facility can work with the superintendent to potentially minimize or alleviate some of the problem

conditions for healthy turf.

Compounding these issues, many treatment facilities require golf courses to accept effluent water every day and year-round, whether the course needs it or not. Irrigation needs are lower during periods of daily rains and during colder months when the turf is not growing, and placing too much water on turf can be just as injurious as not enough water.

Storage of excess water in holding ponds can be costly because a pond's storage capacity must be able to accommodate millions of gallons when the golf course has little irrigation requirement. This acreage can be hard to find when retrofitting an existing course and can be expensive real estate in today's development dollars. In addition, holding ponds can have an ongoing problem with algae bloom because of the higher concentrations of nitrates in effluent water. Drawing effluent water directly from a treatment plant is not always the ideal situation for golf courses.

In the spirit of cooperation, inherent problems with wastewater can be resolved and a program can be mutually beneficial for golf courses and treatment facilities. For example, some facilities provide their wastewater free to golf courses, acknowledging that the effluent discharged after treatment has been paid for by normal sewage rates.

The bottom line is that effluent water providers and superintendents need to discuss their separate challenges in-depth before agreeing on programs. An open dialogue between the two is essential if golf courses are to assist communities with their wastewater accumulation — and achieve a successful future of effluent for golf course irrigation. ■

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