



No other options

Evaluating the costs of using reclaimed water vs. city H₂O. Which makes the most sense for your agronomic needs?



Reclaimed water benefits

- Goes through extensive filtration and disinfection process.
- It is monitored and tested continuously to make sure that it exceeds state safety standards.
- Facilities that use reclaimed water mark locations where it was used with clear signage.
- In areas where reclaimed water is used as opposed to potable water, cities can conserve valuable drinking water.
- Cheaper and golfers won't notice much difference with the use of reclaimed water; it is generally used when courses are closed.

“The effluent is clean by most standards, but we are a little concerned about sodium, chloride and bicarbonates.”

— Rick Owens, Laurel Hill Golf Club

by David McPherson

Laurel Hill Golf Club really doesn't care what side of the political fence you're on. The golf club in northern Virginia recently tapped into the Norman M. Cole Jr. Pollution Control Plant Water Reuse project – part of the federal aid program and coordinated with and permitted by, the Virginia Department of Environmental Quality and other local agencies; it is also partially funded through the American Recovery and Reinvestment Act. This hefty H₂O handout was a government gift the six-year-old course in Fairfax County, Va. could not refuse.

With water conservation top of mind in Washington and water levels in the nearby Potomac River and Chesapeake Bay an issue, this project was a win-win for everyone. It was good for the environment, good for the County, good for the federal government, and most importantly good for the golf club as it gets a relatively clean water source at 75 percent of what they were previously paying.

“The water authority gets credit for not dumping into the Potomac River and eventually the Chesapeake Bay as everyone is very concerned about the health of the Bay,” says Laurel Hill Superintendent Rick Owens. “We knew we weren't going to have enough water from the get-go since the irrigation lake we had is not big enough and permit issues prevented it from being enlarged. So this project is a very good thing for us.

“You can debate the political merits of the [government's] stimulus package all you want, but as a county-owned golf course, we didn't have to pay for that effluent line coming our way, other than a few expenses to hook it up ... so it was a windfall.”

While the summer of 2012 is the first full season the course has used effluent water, results of extensive testing have already shown no ill effects.

“The effluent is clean by most standards, but we are a little concerned about sodium, chloride and bicarbonates,” Owens says. “It is also written into the contract that the County will pay for us to buy gypsum if needed, which helps precipitate out the salt. For example, if we buy \$10,000 in

gypsum that comes off the top of our water bill.”

Laurel Hill Golf receives the effluent via an eight-inch line coming from the water treatment plant, which is located about five miles away. The line dumps the reclaimed water into the club’s wet well in its pumping station. The wet well has a check valve going out into the lake, so water can’t go out into the lake.

“It operates on a sensor,” Owens explains. “If we get down to a low level in our pond, then the reclaimed water starts dumping into the wet well and another valve ensures we don’t pull water out of the pond anymore. Reversely, we can shut off the flow of effluent if we have enough lake water.”

With a dry summer, the lake level is way down; Owens says

odds are they will use mostly reclaimed water for the rest of this season. The Water Reuse Project will provide up to 24 million gallons of treated reclaimed/reused water to irrigate not only the golf course, but also the baseball field at Lower Potomac Park. According to Owens, there is no chance this water source will dry up anytime soon.

“There will always be plenty of water,” he added. “It’s a treatment facility for Fairfax County, which has one million people and is steadily growing, so I don’t think that will be an issue.”

While many clubs consider switching to effluent water for the environmental savings alone, the set-up costs are often an issue and an expense too great to overcome. Just ask Doug Heinrichs.

Catching up with Heinrichs,

CGCS, at Montreux Golf & Country Club (the host of the PGA TOUR’s Reno-Tahoe Open) he says water management is one of his biggest challenges. Since Montreux sits close to 6,000 feet above sea level, all their irrigation water comes from a nearby mountainside creek. A mild winter that saw only four to five inches of snowfall compared to an annual average of six to ten feet, and the creek is at the lowest level he has ever seen in his 14 years at the Jack Nicklaus-designed course.

“I haven’t had to cut back to the point where we are losing turf, but I’ve had to be more prudent than ever this year managing our water,” Heinrichs says.

Faced with this lack of water, is effluent an option the seasoned superintendent would consider

in the future?

“We looked at it a few years back, but it’s not cheap to convert to effluent,” he commented. “We are at nearly 6,000 feet so you have to get the effluent up here ... that alone is very expensive. If it was readily available next door, it might be a different story. People think effluent water is free ... it certainly is not.”

Getting back to Owens, luckily for him, the effluent was almost free. There were no installation costs for putting the line in other than a few incidental expenses. While this is the first summer the club has been irrigating with reclaimed water, the superintendent is already seeing significant savings.

“For the water treatment plant our cost is 75 cents on the dollar for what we were previously pay-

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ing for the treated water,” Owens says. “In a dry year, we can easily buy more than \$100,000 of water, so right there that’s a \$25,000 savings.”

EFFLUENT EVERYWHERE IN THE SUNSHINE STATE. Kevin Sunderman, superintendent at Isla del Sol Yacht & Country Club in St. Petersburg, Fla. is also a fan of using effluent water. He has no choice since that’s the only irrigation source he’s had available at the trio of courses in the Sunshine State where he’s worked for the past decade.

Because reclaimed water is all he’s used lately, Sunderman says it’s hard to compare the costs of reclaimed water versus other water sources. With no irrigation lake, well, or potable source available, Isla del Sol sources its

water directly from the city’s treatment plant.

“We have pumps that boost up the pressure for use on the golf course,” he explains. “The lakes are not an option because we are on Barrier Island, so we would have a lot of salt content in our lake water.”

Avoiding a water source high in salinity is one of the main reasons Sunderman says they use effluent. Overall, the quality of their reclaimed water is good, but it varies week-to-week.

“It has a lot to do with how much it rains and how many people in the area are using their supply because in the wintertime there are a lot more people here flushing toilets, etc. While in the summer, there are not as many people here, so it doesn’t have as much impact on our supply.”

Bicarbonates and salts are the two major issues the course faces when it comes to the quality of the reclaimed water. To combat this, they flush their soils with gypsum and spray the course with other flushing agents to knock the sodium off. The course also get traces of nitrogen build up from time to time in their effluent water – about a pound of nitrogen per 1,000 square-feet of turf in a year.

Sunderman says they pay approximately \$30,000 per year for their effluent water, plus an additional \$5,000 to treat the soils.

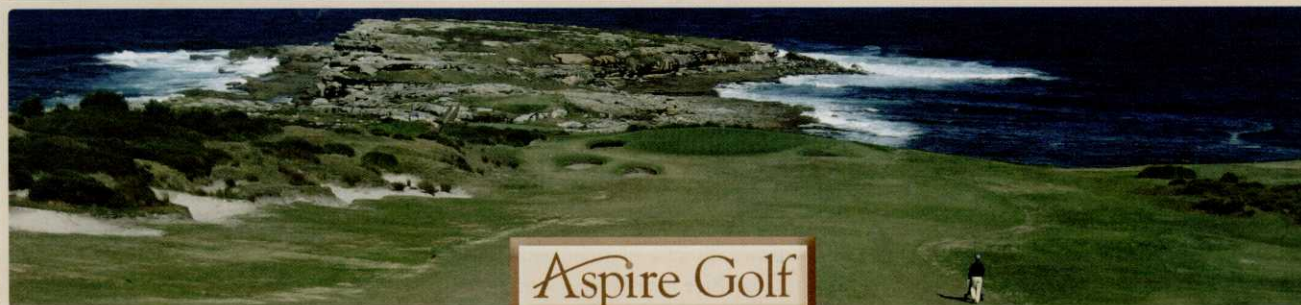
“The cost is better than spending nothing and not getting any water, so we are lucky to have that option,” he says. “Potable water would be much more and we would have restrictions on our use. If you don’t have a water

source, or if it is an unreliable source, effluent is a great option. Certainly, in terms of the environment, probably a better option than if you are getting potable water from lakes. We only have so much good water to go around on this planet.” **GCI**

David McPherson is a Toronto-based freelance writer and frequent GCI contributor.

For more online

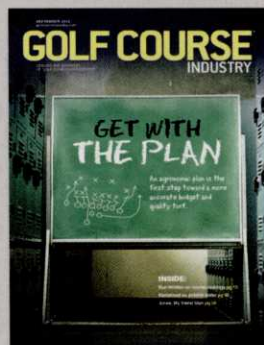
For an outline of the costs and maintenance practices necessary to manage reclaimed water, enter bit.ly/RYP35d into your Web browser for article published in the Green Section Record: “A Step-By-Step Guide For Using Recycled Water,” authored by USGA agronomist Pat Gross.



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