

Club's reservoir pays off

By building two lakes, a Midwest Club was able to solve its watering system problem and beautify the course at the same time.

To water or not to water—that was the question—in the summer of 1964 at Norwood Hills Country Club golf course near St. Louis, Missouri. Irrigation would result in better greens, yes; but, irrigation costs money.

So, when the directors made up their minds to go into it, they moved fast but with caution. They had just recently hired course superintendent Don Clemans, an agronomy graduate specializing in turf, from Purdue University. With his know-how and the support from Chairman Roger Linsin of the irrigation committee, the job was done well at reasonable cost.

First, they studied films and slides of similar work done on courses at Indianapolis and Kansas City. Then they asked the Russel Daniel Company of Athens, Georgia to look at the course and make recommendations. Later the company was awarded the contract for the plan.

Since local water lines couldn't supply the amount needed, the

Daniel Company recommended that a reservoir be built to temporarily store 20 million gallons of water. Graham Daniel, head of the firm, suggested that they get in touch with their local soil and water conservation district.

An agreement was made between Norwood Hills and the St. Louis County Soil and Water Conservation District whereby the district would give technical assistance as far as possible in all phases of soil and water conservation. Norwood Hills agreed to install all works of improvement according to Soil Conservation Service specifications.

Howard Funk, technician of the USDA Soil Conservation Service assigned to the district, found after soil, geological and topographic investigations, a site suitable and feasible. The reservoir was designed by SCS engineers.

To supplement the water derived from rainfall, a six-inch water line from the County Water Co. was

run into the reservoir. To obtain fill material for the reservoir, a borrow pit was located in an adjoining watershed. This formed a smaller lake from which water was pumped to the reservoir. After irrigation was in operation, sub-surface flow increased, some of which impounded in the adjacent small lake.

In May 1965 the system was in and working. Water goes to points over the 300 acre course through 13 miles of pipe. It is fed into lines by two pumps, powered by 75 hp motors and building up to 140 pounds pressure. They can deliver 1,300 gallons per minute.

The water comes on by program. Time clocks on each of the 25 controllers handle 10 circuits each. Each circuit can be set to run any length of time up to sixty minutes, any or all days of the week. They can program for 14 days at a time and forget it.

It took 65½ miles of wire, 440 electric valves, 1,050 electrical connections, and 4 control panels for 250 circuits to build the power supply system.

Now for some arithmetic. Last summer Norwood Hills used 55 million gallons of water for irrigation. They bought 30 million of it from the County Water Co. for \$8,000. The rest was pumped from their own supply.

The lakes cost \$25,000. This year's experience suggests that the Country Club will use about \$5,000 worth of water a year from them making them amortize in five years. The whole project cost a quarter of a million, but the largest item was the delivery system, which would have cost the same without the addition of the lakes.

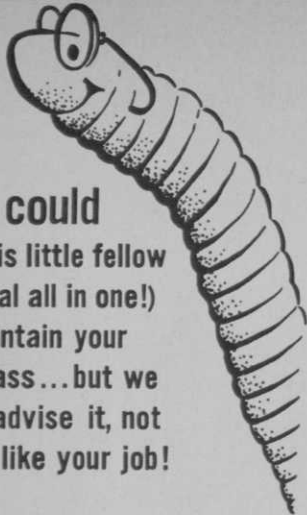
Then there is the added beauty the lakes provide. One tee is now located on the earthfill of the reservoir. Ducks inhabit the lakes. Ornamental shrubs are being planted on the shore lines. Who can put a price tag on these?

The agreement between Norwood Hills and the soil and water conservation district brings other advice and counsel. Assistance was given on repairing and improving a 40 year old lake. To determine soil types, permeability, and probable response to soil treatment, a



In foreground is small lake with the dam of the large lake in the background. Back of dam was seeded to crown vetch and the top was seeded to zoysia. Pumps for system are located in house in the right center of picture. Large lake stores about twenty million gallons of water for use by the irrigation system.





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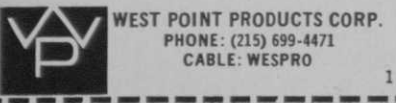
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3 p.m.- Feedback panel
 4 p.m.-Specialized club roundtables
 6:30 p.m.-Pennsylvania Dutch reception, dinner

Friday
 March 8 9 a.m.-Potpourri film and slide presentations, Learning laboratory—Training techniques in operation
 Ladies tour, lunch at Cherry Hill Inn.
 Noon-Old and new luncheon—honoring charter members, 25-year club members, past presidents, first-timers, SAC awards
 2:30 p.m.-Country and Town club roundtables
 Evening free

Saturday
 March 9 8 a.m.-Tax development breakfast
 9:30 a.m.-Closing business session
 1 p.m.-Men's reception, luncheon Afternoon free
 7 p.m.-Formal reception
 8:15 p.m.-Banquet and dance

Sunday
 March 10 7:30-11:30 a.m.-Farewell buffet breakfast □

reservoir Continued

soil survey was made by SCS soil specialists.

It takes a lot of experts to keep modern golf courses in action. Besides the greens experts—Norwood Hills called on irrigation, soil and water conservation, plumbing and electrical experts. Whether you're an expert golfer or not, when you play Norwood Hills you will reap benefits brought about by other kinds of experts. It may seem a little strange that conservation is one of them, but to soil and water conservation districts—solving these problems is par for the course. □