plant growth regulators and other chemicals.

Bandy says the mode of action also determines whether a combination product will be effective, and that's what limits the number of fungicides that can be combined. Many fungicides rely on foliar uptake and are designed to release on contact with the leaves, while granular fertilizers have to be watered in to be taken up by the roots. In addition, there are some fungal diseases that can be aggravated by turf growth, so applying a fungicide combined with certain fertilizers may aggravate the problem instead of helping it.

"Fungicides are the most difficult chemicals to combine," Bandy says. "If they're not going to work, we're not going to produce them."

Why market growth has stagnated

Neyman says one of the reasons the combination product market hasn't exploded the way some people thought it would in the last five years is that superintendents have concerns about the products' efficacy.

"When I talk to superintendents, I get questions that suggest they worry about whether a combination product will work as effectively as separate applications of fertilizers and pesticides," Neyman says. "Superintendents, by nature, are cautious about trying something new if the traditional ways are working well enough."

Neyman also says there's a reluctance on the part of superintendents to apply pesticides wall-to-wall, which is the delivery method most common if it's combined with fertilizers. "It doesn't fit in well with the integrated pest management philosophy of treating specific areas rather than using broadcast pesticides," he adds.

Companies are reluctant to market combination products because the profit margins are small.

But there's another market factor at work as well. Simplot's Johnson says companies are reluctant to market these products aggressively to superintendents because the profit margins are so small.

"The margins on combination products are extremely low, which is one of the reasons they're such a good deal for superintendents," Johnson says. "Many times the fertilizer part of the combination is practically free."

The other challenge for manufacturers is the changing regulations that govern how combination products are registered, Johnson says. Under previous rules, companies only had to register the pesticide component to stay in compliance with states' environmental regula-

Continued on page 72

Continued from page 71

tions. Now, more states are requiring that both components be registered, he adds.

"I heard the president say in his State of the Union speech [in January] that he's against double taxation," Johnson says. "For chemical companies in the golf market, it's the double registration that's hurting us."

The key to making combination products more profitable will be adding extra value to them, he says. That could include strategies like improving the fertilizer component to the point where superintendents decide it's a "must have" to adding additional pesticides to the list of usable products in combination.

"Early on, we were all successful at selling the value of combination products, but that has dropped off some," Johnson says. "We've got to keep reaching for new opportunities and new selling strategies to keep the momentum going, and we will." ■

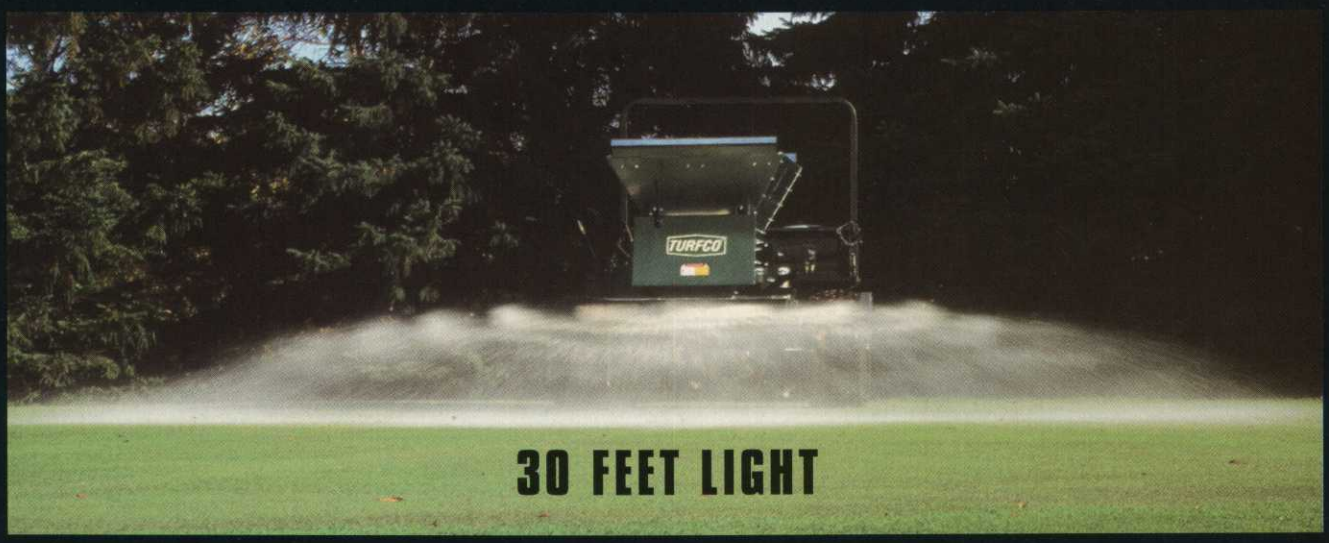
Factors to Consider When Choosing A Combination Product

If you decide to use a combination product, here are some ideas from the experts on what to consider:

- Decide what active ingredient makes the most sense for what you're trying to accomplish.
- Choose a company known for its quality of fertilizer because it's the delivery system for the pesticide in combination products.
- Ask the sales representative how the products are combined. (Some incorporate the active ingredient by adding a higher concentration of inert particles before blending with fertilizer. Others impregnate every particle with the active ingredient.)
- Select a company with known formulation expertise in the area of granular combination products because the quality of formulation is a factor in pesticide efficacy and ease of application.
- Pick a fertilizer that meets your needs (Note: That may *not* always be a nitrogen-based product, depending on subjects like soil type, turf variety and other seasonal factors.)
- Determine what particle size is appropriate for the job (smallest for greens, medium-sized for tees and fairways, and standard sized for roughs. See "How to Measure for Product Uniformity" on page 70 for details).
- Check to see how uniform the particles are throughout a product.
- Stick with products that have science to back up their claims of efficacy.
- Make sure the products won't interfere with the performance of other products used on the course.
- Use a good spreader that is properly calibrated within a given size guide number (SGN. See "How to Measure for Product Uniformity" for details).

– F.H.A. Jr.

INTRODUCING WIDESPIN™ 1530.



ONE MACHINE. A MULTITUDE OF APPLICATIONS.

WIDE SPIN™

The new WideSpin™ 1530 – finally a multi-functional top dresser that will master virtually any top dressing program you can dream up. Do a conventional heavy spread up to 15 feet wide – 3 times wider than ever before. Or top dress as light as a walking fertilizer spreader, and cover all of your greens in just two hours. Reduce the number of tire tracks. Use a variety of materials. And work every part of your course. With just a few simple adjustments, the patent-pending WideSpin technology can switch from heavy to light top dressing in a matter of minutes. No attachments to change. No messy hydraulic connections.

The next generation of top dressing is here, and it comes with the industry's only 3-year warranty. Get the ultimate top dressing coverage plan. Arrange a demo of the WideSpin 1530 today – **call 800-679-8201.**

TURFCO®

THE LEADER. SINCE 1961.

Minneapolis, Minnesota U.S.A.
www.turfco.com

CIRCLE NO. 126

Get Your Fill

Golf courses that need soil for building tees, adding contours or capping fairways should look for free dirt for their projects

BY MARK LESLIE

"Clean Fill Wanted." It's a sign you see along the country roads of America, often on a property cursed with a swampy spot or a deep ditch the owner wants filled. Golf courses that need soil for building tee boxes, adding contours or capping fairways should look for free "clean fill" for their projects.

That is precisely what happened at Ohio University (OU) in Athens, Ohio, and Reserve Run GC in Boardman, Ohio, two golf course projects designed by Barry Serafin of New Albany, Ohio. Serafin says costs for topsoil stripping and relaying can easily double or triple if the material has to be hauled from a distance.

When OU officials decided to lower Peden Stadium by 7 feet in order to add 1,700 seats, they needed to find a place to deposit about 20,000 cubic yards of earth. At the same time, Serafin and builder Quality Golf were planning to completely reconstruct Ohio University GC next to the stadium and needed "clean fill."

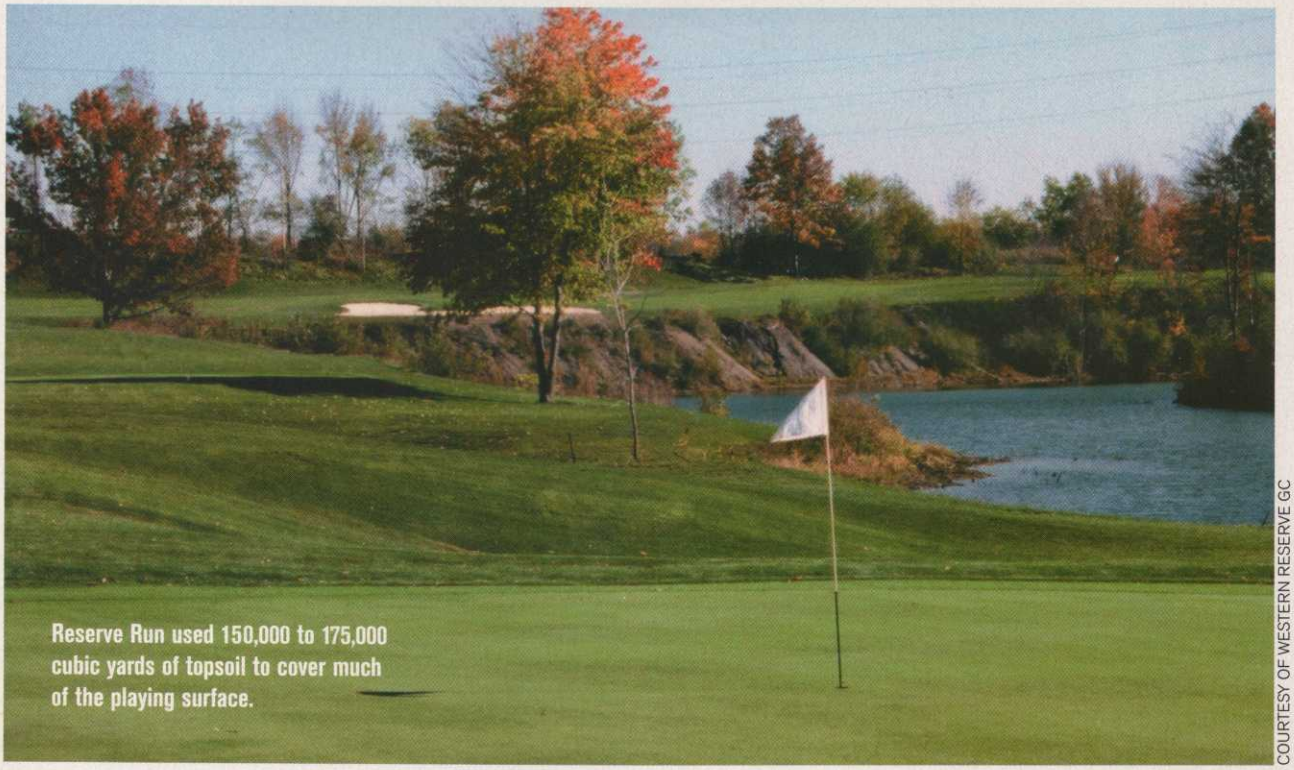
When Scott McDonald and Rick Vernal decided to build 18-hole Reserve Run GC, the property was an old 150-acre coal-mining site that Serafin describes as "barren soil with no nutrients at all." But, fortunately, Wal-Mart was building a new superstore down the road, and the contractors stripped all the topsoil for the store and parking lot and delivered it to the golf course site.

"I wouldn't call what came out of Peden Stadium 'clean fill,' " Serafin says. "We found a little of everything — old foundations, logs, bricks. It was not the best mix to work with, but it was good enough for fill. But the topsoil from Wal-Mart, once it was screened, was fine."

The particular circumstances at OU and Reserve Run worked well, says Serafin, who adds that similar situations could occur at a number of courses.

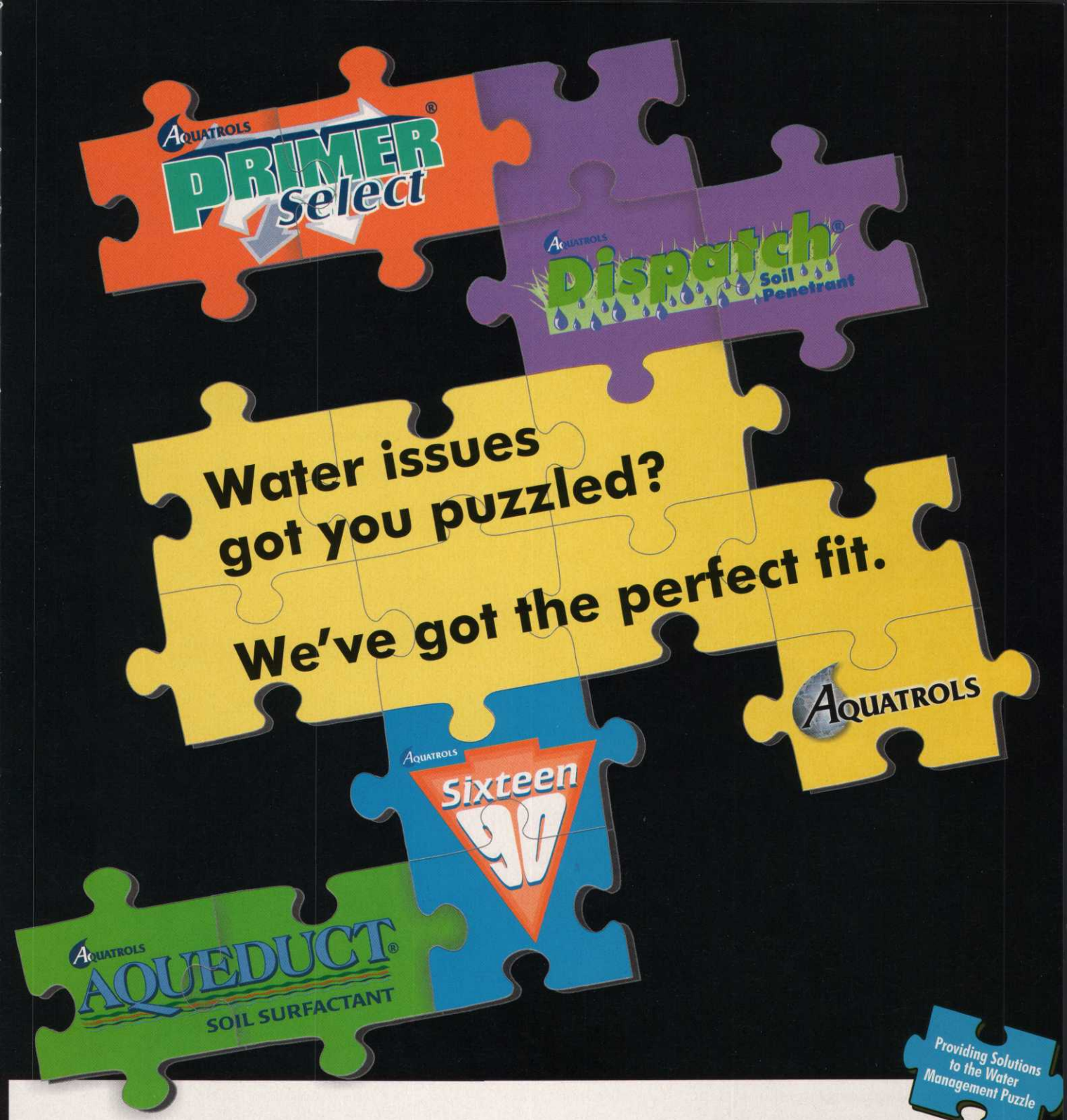
"It might be a dam, a housing development or a new mall being built," Serafin says of the sourcing of fill. "These

Continued on page 76



Reserve Run used 150,000 to 175,000 cubic yards of topsoil to cover much of the playing surface.

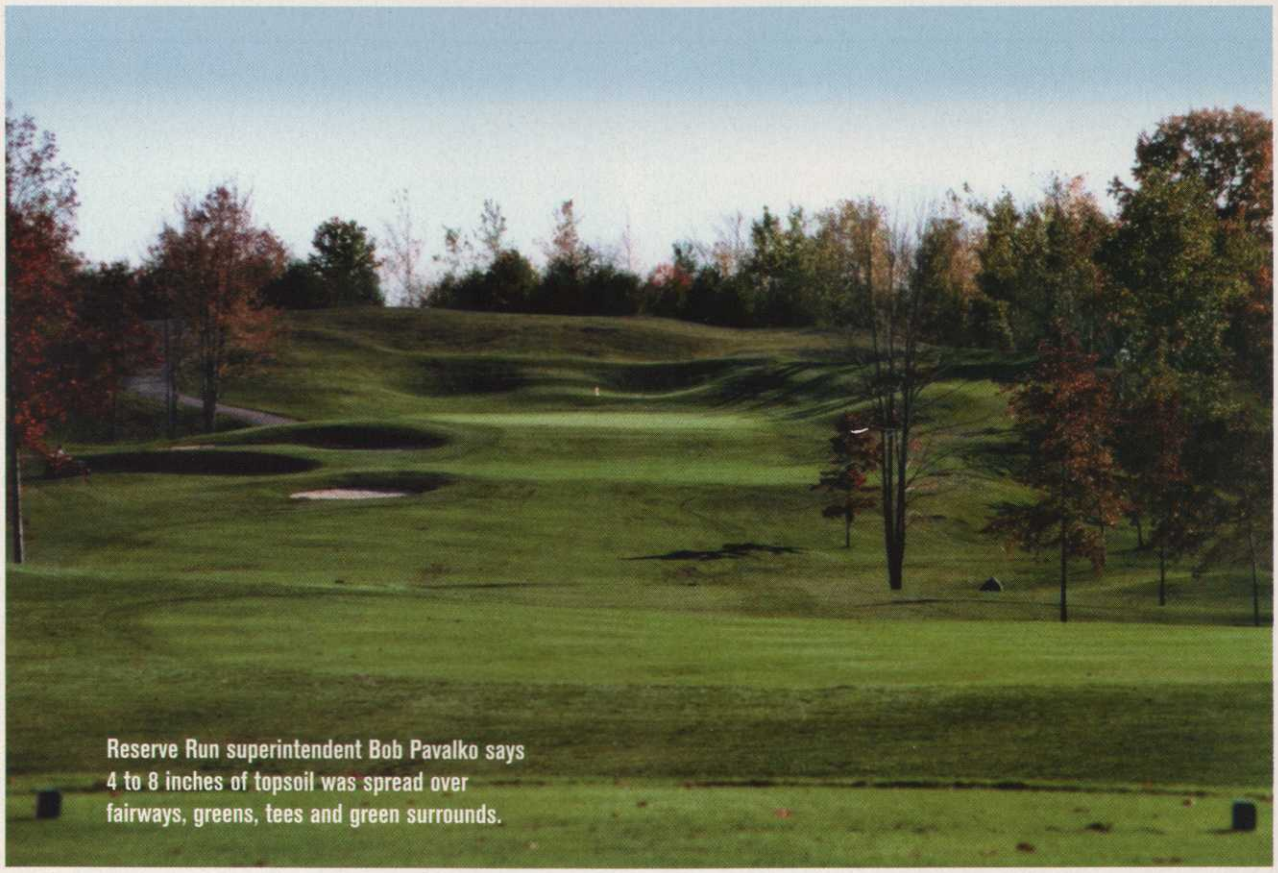
COURTESY OF WESTERN RESERVE GC



Water management. It's an integral piece of the overall picture. But have you thought about how important that piece really is? You know that water is vital for plant growth and plays an important role in carrying fertilizers and pesticides into the rootzone. But how to get it there uniformly? That's where Aquatrols can help. We provide a range of surfactant products tailored to work together to meet the specific needs of your turf. **No need to be puzzled – we've got the missing pieces.**

AQUATROLS 5 N. Olney Ave. • Cherry Hill, NJ 08003 • USA • (800) 257-7797 • www.aquatrols.com

CIRCLE NO. 127



Reserve Run superintendent Bob Pavalko says 4 to 8 inches of topsoil was spread over fairways, greens, tees and green surrounds.

Continued from page 74

projects have to find a place for the earth they are digging up, and a golf course would be as good as anyplace."

At Reserve Run, Serafin was given 150,000 to 175,000 cubic yards of topsoil to cover much of the playing surface, according to McDonald. Superintendent Bob Pavalko says 4 to 8 inches was spread over greens, tees, green surrounds and fairways. Even with few drainage tiles, the land is so "shaley" that "it drains tremendously well," he says.

"It was a blessing," Serafin says. "The course turned out great and has some very challenging and dramatic holes."

McDonald could not estimate how much he and Vernal saved by not having to pay for and haul the earth from afar, but topsoil costs about $8 to $10 per cubic yard, which includes transportation.

"They hauled topsoil for 91 days and had a D-9 bulldozer pushing dirt every day from 6 a.m. to 6 p.m.," McDonald says. "On our end, my partner's blacktop company did the earthwork, while Zinni Golf Construction built the course."

"It might be a dam, a housing development or a new mall being built. These projects have to find a place for the earth they are digging up, and a golf course would be as good as anyplace."

– BARRY SERAFIN, ARCHITECT

At OU, where Serafin wanted the fill spread, Quality Golf first removed the existing 1 to 2 feet of good sandy topsoil. After the fill was spread and shaped, the original topsoil was brought back.

Until it was used, the earth was stockpiled along the seventh hole. Serafin designated one-third of it to help contour the fairway of the par-4, 450-yard seventh hole. Much of the remainder was used to raise half the fairway of the first hole about 2 feet. The par-5, 520-yard hole was one of the low spots on the property. "In order to put in the drain tile, we had to raise the fairway a couple of feet," he says.

James Burkart of Columbus, Ohio-based James Burkart Associates, who is working with OU on a variety of athletic department construction projects, says the Peden Stadium excavation material was placed along a levy on the Hocking River until it was needed. "We created a 'fill slope' along the back of the levy and seeded it so it looked fine until Barry needed it," he says. "If planning is carried out properly, there are a lot of projects that can be done as close as possible to help out other projects. This happened to be unusual since it involved a golf course."

But, as Serafin points out, perhaps "unusual" should not apply to golf projects. ■

Leslie is a free-lance writer and public relations specialist from Monmouth, Maine.

always thinking ahead.

The truth about biostimulants from the company you trust.

Let's cut through all the hype about biostimulants. Fact is, many products marketed as "biostimulants" are little more than expensive, liquid fertilizers, and we've got analyses to prove it. They may make your turf look healthier for a short time, but they aren't going to improve its condition in the long run.

Becker Underwood understands the need for real biostimulants – powerful biological compounds and nutrients that help turf stay healthy, especially during levels of high stress. And we've got the answers: Vigaroot™, Canteen™, BioGain™ and BioGain WSP® + Sprint®. Used together as a complete program, they will positively deliver the performance you want and need. Ask your distributor about the true biostimulants from Becker Underwood.

It's just one more way we answer your needs with honest and effective solutions.

www.beckerunderwood.com

Guoping Yang, Ph.D.
Research & Development

BECKER UNDERWOOD®

Becker Underwood® Inc. 801 Dayton Avenue • P.O. Box 667, Ames, Iowa • 1.800.232.5907 • fax 515.232.5961 • www.beckerunderwood.com

CIRCLE NO. 134

Strengthening Command and Control

A 22-year old irrigation system at Riviera CC made it difficult to water the golf course efficiently. An upgraded control system put the superintendent back in charge

BY FRANK H. ANDORKA JR., MANAGING EDITOR

Matt Morton, superintendent at The Riviera CC in Pacific Palisades, Calif., is not a control freak, but he wanted to control his irrigation system. Unfortunately, the 22-year-old system didn't have a central control system. It would take guts to start an upgrade of the irrigation control system ahead of the course's premier event in February 2002, but it had to be done.

"We had fallen at least two generations behind with our controllers, and it was really difficult to irrigate the course in a timely fashion," Morton says. "We definitely needed to do something because the system was prehistoric."

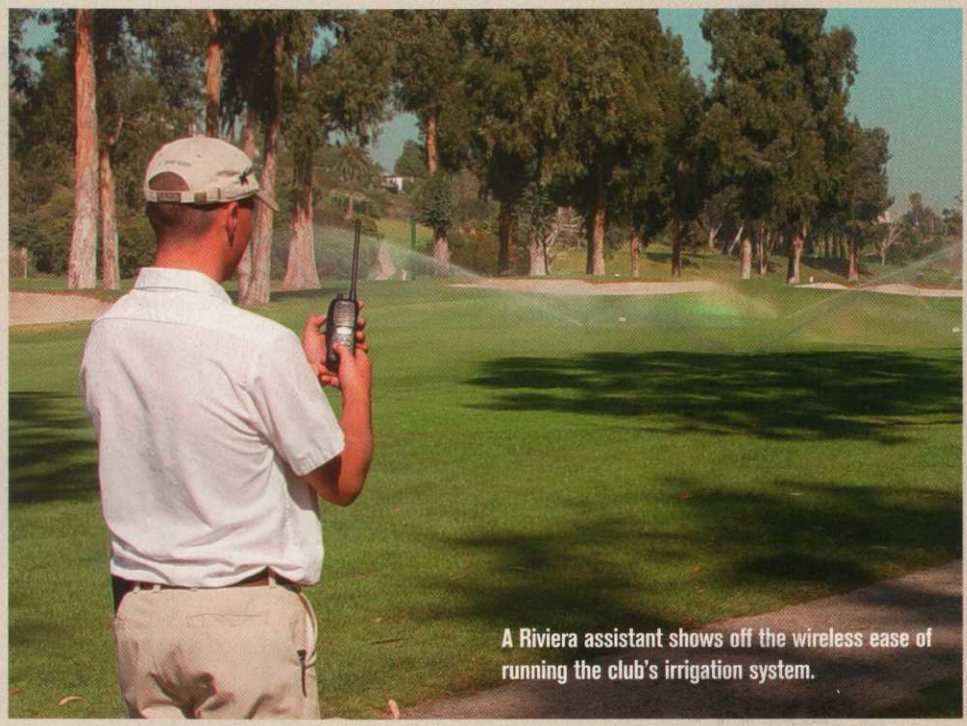
With so many possibilities for upgrades, however, Riviera's decision-makers didn't want to rush to make a choice. So they bided their time during the summer of

Problem

Without a central control system, Riviera's older irrigation system (circa 1979) didn't allow the superintendent to change the watering schedule easily. The 90 satellites didn't communicate, so each station had to be changed manually.

Solution

Installing a Signature control system gave superintendent Matt Morton the ability to change the entire program from any satellite or central mainframe. It shortened the water window and gave him more control over his system.



A Riviera assistant shows off the wireless ease of running the club's irrigation system.

PHOTOS BY MATT MORTON

2001 and tested a variety of products. But they also had to be careful because it rarely rains from March through December in Southern California. "You have to be good at water management, and our old system didn't allow us to be as good as we wanted to be," Morton says.

The problem

The system that irrigated Riviera's historic fairways and greens was installed in 1979, at a time in irrigation technology when central control systems were few and far between. As a result, when Riviera's irrigation technicians wanted to update the irrigation program, they had to travel around to the course's 90 satellite stations (which control nearly 4,000 heads) and change them individually.

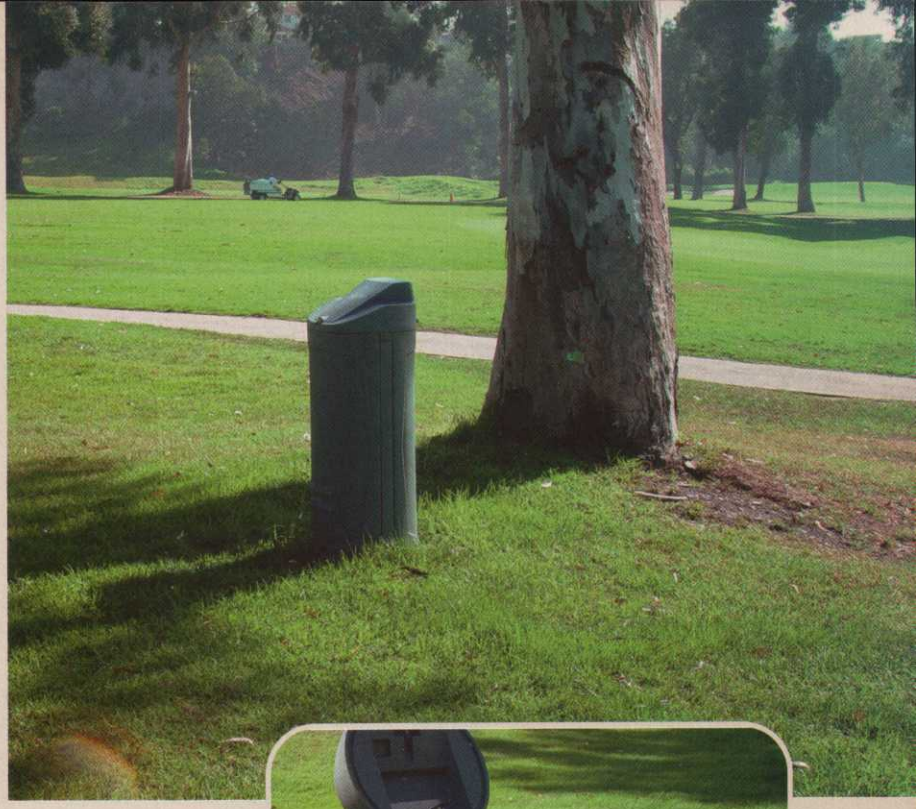
"There was no way to do it efficiently," says Morton, who was an assistant to then superintendent Paul Ramina at the time. "We'd send our irrigation technicians out to make changes, and it would take them a long time to get around the course. That was a waste of man hours we could have used on other projects if we'd just been able to update the system from a central location. We had to become more efficient."

In addition, while modern irrigation systems allow superintendents to control individual sprinkler heads to ensure consistent coverage, Riviera's system didn't. "It was kind of crazy," Morton says.

When word leaked out that Riviera was contemplating an irrigation upgrade, Ramina was besieged with irrigation companies who wanted to provide the hardware and software, Morton says. Each company provided test controllers for Ramina and Morton to try before they made a final decision. After months of looking at different systems, Ramina decided on one. Then he received a call from a Signature Controls representative. "They didn't have much exposure out here on the West Coast," Morton says.

Curt Schaubel, sales director for Signature Control Systems, says the company hadn't provided its systems to a top 100 course in the West, so the opportunity to help Riviera with its problems was too good to pass up.

"We felt our system could address all of their concerns by allowing the superintendent to control any sprinkler head from any individual satellite on the course," Schaubel says.



The new Signature satellites (above) easily took the place of the older outdated system. Riviera's crew members ripped out the old system and rewired the new one once it was installed (below).

The solution

After testing Signature's products for a few weeks, Ramina was so impressed that he changed his mind and decided to go with its control system.

"We thought the central control system that Signature offered was terrific," Morton says. "It was an enormous improvement over what we had. We can have fun and get creative with the new controllers."

Morton says Ramina also liked the fact that the new satellite systems could be upgraded easily so the course didn't need to exchange hardware anymore. "New changes in software are downloaded in a matter of seconds, just like you would do at your home or office PC," Morton says.

The next challenge was deciding when to do the upgrade. As Ramina and Morton looked at the calendar, they realized the only logical time to make the change was in December 2001. In Southern California, golf courses get the most rain during that time, so it's the perfect time to make alter-

Continued on page 80

Read another Real-Life Solutions on page 92.

Continued from page 79

ations to an irrigation system because the rain will take care of watering the turf while the system is out of commission, Morton says.

But there was another potential snag that had nothing to do with the weather: The course had only six weeks to complete the work and get out of the way before the Nissan Open rolled into town.

"There are some people who would say that it took a lot of courage to alter your irrigation system six weeks before a major tournament," Morton says. "But we couldn't afford to make the changes during the summer because you'd risk turf loss. We just had to make sure everything went as smoothly as possible."

Fortunately, the satellite replacement proved to be fairly easy, Morton says. It only took one week.

"Our staff ripped out the old system, leaving only the concrete pedestals and wiring," Morton says. "The Signature team installed the new satellites, and we rewired them."

But weren't they worried that something might go wrong before the tournament?

"We had complete confidence in the system," Morton says. "Our biggest concern was that the learning curve for our irrigation technicians might be too steep. But it's an instinctual system, so it was easy to train them. We had a successful PGA event, and the controllers performed beautifully."

Outlook

What impresses Morton most about the system is the direction the Signature team members are heading. "They have taken a step toward the future in their design, and I respect the fact that they directly implement changes to the software from superintendents' negative and positive feedback," he says.

Morton says the course conditioning improved as he gained better control over the irrigation system. The golfers noticed, particularly in the heat of last summer.

"We had an extremely difficult summer — one of the driest years to date — and we came out above and beyond expectations," Morton says. "We received more compliments from the golfers than I can remember."

Morton is also happy that he won't have to worry about a major overhaul of the controllers when the club replaces its entire system from the ground up in two years.

"We're looking forward to 2005," Morton says. "With new piping and a flexible control system, we expect to have one of the best overall irrigation systems in the industry." ■