

## Bermuda On Target

**Superintendent praises Bull's-Eye for surviving an extreme, unforeseen water shortage**

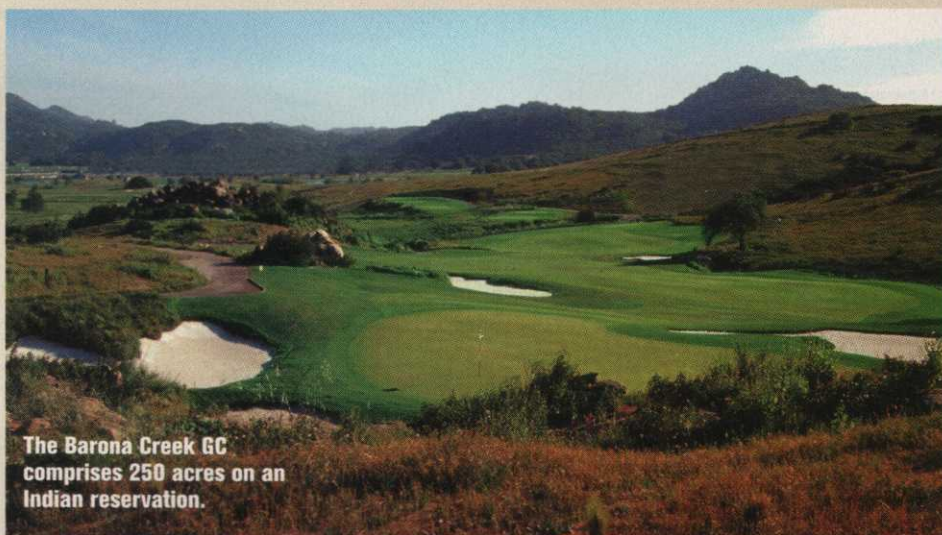
**O**pen since last January, Barona Creek GC is a 250-acre course nestled among the rolling terrain, natural rock ledges and hundreds of oak trees on the Barona Indian Reservation in Lakeside, Calif. Since the club shares its water supply with the tribal community and a casino — both of which get first priority — a conservation-minded design plus a tight water budget were planned to keep the championship course within a safe yield of the aquifer. But no one foresaw the kind of water shortage that would occur during construction, leaving acres of newly installed sod high and dry.

### Problem

Restriction in irrigation pipelines caused a severe water shortage during Barona Creek GC's construction and threatened to damage new sod.

### Solution

A drought-tolerant bermudagrass that also withstands heavy foot traffic and poor water quality.



The Barona Creek GC comprises 250 acres on an Indian reservation.

### The problem

The water shortage began during construction in the spring of 2000. Installation crews had already finished several large lakes, small ponds, recirculating artificial creeks and 12 holes of sod when they realized the water lines were becoming restricted. The distribution network, some of which included 40-year-old piping, could not supply water to the community and casino, fill the needed 31 million gallons of water features and irrigate the newly laid sod all at the same time.

"No one anticipated this amount of restriction in the lines," says superintendent Sandy Clark. "As we were filling the lakes and irrigating more and more turf, it became evident very quickly that this water distribution system was not going to work."

By August, the catastro-

phe hit critical mass. Clark and his team were forced to ration water to the turf — first to the more established sod and then to the newer, more vulnerable areas. The sod received about 50 percent of the water it was supposed to receive during 60 hot days in September and October.

### The solution

Aside from postponing the course's opening from October to January for renovation to the pipelines, Clark says the solution to his water shortage was the improved bermudagrass specified for the course.

"If you're constructing a new golf course, it all comes back to the superintendent working with the architect to make sure the grasses are specified to fit the area," Clark says.

Clark and designer Todd Eckenrode, then with Gary

Roger Baird Design International, knew the course called for drought-tolerant grasses that also perform well and look beautiful. While they chose an old standby for the fairways, Tifway 419, they selected a new bermuda called Bull's-Eye for the roughs. Introduced in 1999 by West Coast Turf, Bull's-Eye bermuda comes highly ranked in quality studies conducted by the National Turfgrass Evaluation Program. It ranks well in its tolerance of drought, heat, heavy foot traffic and poor water quality, including effluent water. "We put Bull's-Eye through stresses that I would never recommend any superintendent consider," Clark says.

Along with its high-stress tolerance, Bull's-Eye is valued for its look, which includes a course texture and a deeper blue-green color.

"Bull's-Eye really creates a

nice contrast between the roughs and fairways, which is what we were going for," Clark notes.

Bull's-Eye also has a compact growth habit, featuring tightly packed leaves near the soil's surface. The ball doesn't sink down in it for good playability, Clark says.

### Outcome

"After an initial shock response of going a little off color, Bull's-Eye recovered," Clark says. "We've seen recovery virtually every place." Clark says he was also happy with the turf's transition last spring.

Eckenrode, now a principal of Origins Golf Design, says Bull's-Eye proved its



**Superintendent Sandy Clark eyeballs a handful of Bull's-Eye bermudagrass.**

drought tolerance.

"It's capable of handling the stress and is an excellent grass for low-water use," he says. "Sandy has been able

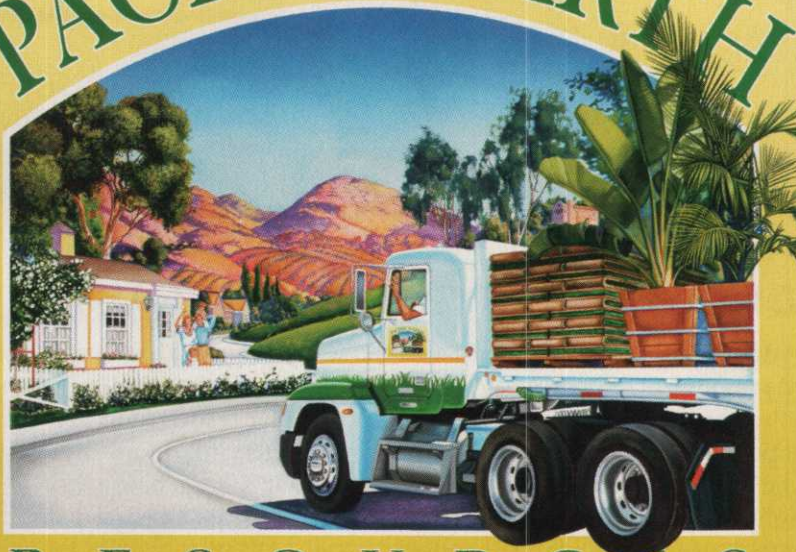
to produce a playing surface that is high in quality despite the obstacles. In addition, the course is playing fast and firm, which is a classic design trait we wanted from the beginning as it allows the strategies and many alternate routes of play to come to life."

A multi-million dollar expansion is planned for the reservation, including another casino and a resort hotel. Mindful of community concerns regarding the course's water usage, plus the possibility of another drain on the water distribution network, Clark continues strict water management. "We've got to make sure we don't take more than

our share," he says.

The design, which includes only 90 acres of sod, helps, too. Clark estimates the course will only use between 200 to 310 acre-feet of water per year, depending on rainfall. About 15 percent is currently recycled effluent from the casino's waste-treatment plant and the rest is from the reservation's wells. However, as future development on the reservation grows, Clark estimates he'll have nearly 750,000 gallons of recycled effluent water available per day for irrigating. "This will be more than enough water for our needs, and Bull's-Eye has a high-tolerance for effluent water," he says. ■

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