

# EVENTS

## CALENDAR

### JUNE

23

North Texas Golf Course  
Superintendents Turf

Seminar, Arlington-Sheraton, Arlington,  
TX. Contact: John Anderson, P.O. Box  
619014, North Fort Worth Airport, TX  
75261.

24

Midwest Sports Turf  
Institute, College of

Du Page, Glen Ellyn, IL. Contact Susan  
Glasgow, College of Du Page, (312) 858-  
2800, Ext. 2770.

25

Massachusetts Turfgrass  
Field Day, University of

Massachusetts Turfgrass Research  
Center, S. Deerfield, MA. Contact: R. J.  
Cooper, Department of Plant and Soil  
Sciences, Stockbridge Hall, University of  
Massachusetts, Amherst, MA 01003,  
(413) 545-2353.

### JULY

22

Kansas Turfgrass Field  
Day, Kansas State Uni-

versity, Manhattan, KS. Contact: Larry  
Leuthold, Horticulture Dept., Waters Hall,  
KSU, Manhattan, KS 66506. (913)  
532-6173.

28

Missouri Turfgrass Field  
Day, South Farm, Univer-

sity of Missouri, Columbia. Contact: Dr.  
David Minner, Dept. of Horticulture, 1-40  
Agriculture Bldg., Columbia, MO 65211.

### AUGUST

9-12

Park Planning and  
Maintenance School,

Clarion Hotel, Colorado Springs, CO. Con-  
tact: Frank Cosgrove, P.O. Box 6900,  
Colorado Springs, CO, 80934, (303)  
632-7031.

26

University of Rhode  
Island Turf Field Day,

Turf Research Farm, Kingston, RI. Con-  
tact: C.R. Skogley, URI, Plant Sciences  
Dept., Woodward Hall, Kingston, RI  
02881, (401) 792-2570.

# THE FRONT OFFICE

## OPINION PAGE

### THE BLACK LAYER: NATURE'S REVENGE?



For every action in nature there is a reaction. It's called the balance of nature and it applies to everything man touches on this earth, including sports turf.

The so-called "black layer" is a perfect example. This slimy, dark layer that smells like rotten eggs is becoming a significant concern to many managers of improved sports turf. The black layer appears to stunt root growth during damp weather or in heavily-irrigated sites, and gives off gases potentially toxic to the turf. Recent publicity has caused some turf managers to look for the layer, located usually in the top

few inches of soil. From the feedback it appears that turf managers are finding the layer serious enough to warrant in-depth investigation into its causes and cures.

Research has begun, but it is hampered by a lack of funds. Studies at Michigan State University and Iowa State University are beginning to turn up some important connections between typical maintenance practices and development of the layer. But, as yet, there is no general consensus among researchers on how to eliminate the layer.

Ironically, the problem occurs primarily in soils that have been amended with sand to enable turf to withstand heavy play. The addition of sand to native soils, either during construction or by topdressing, has tremendously improved the durability and condition of greens and sports fields. It would be absolutely foolish to turn our backs on the techniques that have allowed the turf manager to provide the high-quality natural surfaces expected by the sporting public.

Preliminary findings have shown that Mother Nature is fighting back against man-made conditions in the soil. By varying the types and sizes of sand used to amend soils, sports turf managers have created layers below the surface that trap water as well as many surface-applied fertilizers and nutrients. During periods of heavy rainfall or heavy irrigation, the waterlogged soil in this layer lacks enough oxygen for soil organisms to do their job of decomposition properly.

Instead, bacteria produce the foul-smelling layer that further complicates drainage and serves as a barrier to roots. To make matters worse, it appears these bacteria are causing sulfur and iron, possibly applied by the turf manager, to react together to form part of this black, slimy material.

I'm not a soil scientist by any stretch of the imagination, but the evidence presented so far could cause some turf managers to stop using products that have been shown to provide turf with the strength necessary to withstand today's heavy levels of play. To give up so quickly on gains that have brought the industry this far would be a terrible mistake.

Don't jump the gun. Researchers agree that once the soil has had a chance to drain properly, nature reverts back to standard decomposition—even breaking down black layers that became established during wet periods. The turf manager has the knowledge and tools to correct drainage problems by breaking through subsurface layers with aerators and by restricting surface-applied water. He can also prevent the formation of soil layers in the future—by carefully selecting the sand he uses during topdressing to match that already in the soil.

The whole black layer affair has made one thing very clear—we need to keep a closer eye on what's below the surface and constantly consider the impact of management practices on the soil. If it is necessary to venture away from "organic or natural maintenance" to get the job done, we must be prepared for the consequences of nature fighting back to keep in balance.

*Bruce Shank*



# Huntsville Renovates Parks To Meet Demand



Huntsville Municipal Golf Course was totally redesigned and reconstructed. Lakes, sand traps, bentgrass, and other improvements turned a poor course into hopefully one of the best in the nation.

**A** recreational boom does not adequately describe what's taking place in Huntsville, AL. The city and nearby Marshall Air Force Base, considered "strategically remote enough" after World War II to hide German rocket scientists and their families, has rapidly become one of the centers of aerospace technology in the country. Largely under the leadership of Mayor Joe Davis, Huntsville has taken a position in the forefront of high-tech industry, its population has swelled and its recreation needs have outpaced everyone's expectations.

When the community realized that its recreational facilities were not keeping up with the population or demand, it passed a \$50 million referendum to pay for a spectacular assortment of new sports facilities. They include a 10,000-seat stadium for the Oakland A's AA Huntsville Stars, renovation of the city's two golf courses, a combination softball/soccer complex with concessions, and numerous improvements to more than 150 park fields throughout the city.

In true space-age fashion, the technology applied to build and renovate these facilities is a step ahead of today's standards. For Jim Schumacher, assistant director of parks, the recreational renewal has given him the opportunity to implement some of the latest innovations in sports facility management.

Schumacher, a turf management graduate from Mississippi State University and certified golf course superintendent, happened to be in the right place at the right time. "I was hired to be superintendent for the golf courses and agronomist for the parks," he recalls. "It was clear from the beginning that both the golf courses and the parks had a serious problem with their irrigation systems. The challenge of renovating one and perhaps both golf courses sold me on the job. I really wanted to get involved in construction."

Before the first shovel of dirt was turned at the golf course, the director of parks asked Schumacher what could be done to improve the park fields. He replied, "The same thing that needs to be done at the golf courses, switch to automatic irrigation."

"Both golf courses and 38 parks had old quick-coupler systems with poor coverage," said Schumacher. "Hours of manpower were needed just to operate them every week." Most importantly, bermudagrass needs daily irrigation from April to October to stand up to sports use. "We simply did not have the manpower to ensure proper watering, and it was being done on a real hit-and-miss basis." Understandable since the parks department has over 100 soccer fields alone.

"We get about 50 inches of rain each year," he says, "but it all seems to fall between December and April. We easily can

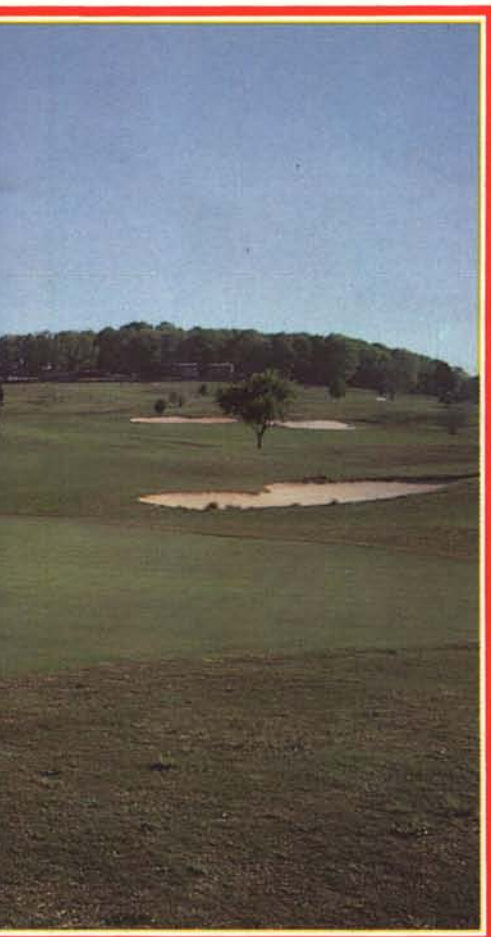
go five or six weeks straight without rain during the rest of the year. There's no way to have respectable turf here without irrigation."

To demonstrate what could be done for the parks, Schumacher installed an automatic controller and converted the quick couplers to impact sprinklers at Fern Bell Park. This park was chosen since it had two softball fields, one Little League baseball field and one soccer field—all with lights. Within three weeks the fields improved dramatically. "One look was all it took for people to see the difference between automatic irrigation and manual," he recalls. That fall, he overseeded with perennial ryegrass mixed with Kentucky bluegrass to show the taxpayers what overseeding could do for fall football leagues and fall and spring soccer leagues.

The situation at the golf courses was actually worse. The fairways weren't irrigated at all. By August, only the most drought-resistant weeds remained green. Greens and tees took hours to water by hand. Schumacher did what he could to improve the greens while he started making a list of recommended changes for the older course, Huntsville Municipal Golf Course, to present to the golf course committee. On the top of the list was a new irrigation system.

Schumacher's dreams came true when the golf course committee presented its





reens and a new irrigation system have turned a

proposal for passage by the city council. Not only would he get a new irrigation system at Huntsville Municipal, but the entire course was to be redesigned by Kirby, Griffiths Associates of Atlanta and reconstructed by Wadsworth Golf Construction. The old course was to become one of the top ten municipal courses in the country.

Mayor Davis liked the idea and wanted the city to set an example for other cities to follow. After all, he had already set a standard for all the renovation work by building one of the largest baseball stadiums in the minor leagues. With a stadium like that it didn't take much to convince the Oakland A's move its AA Nashville Stars to Huntsville.

Not only did the city council approve the proposal, it agreed to consider partial redesign of the Jetport Golf Course, the city's other golf course. While Kirby, Griffiths went to work on the design, Schumacher started looking for an irrigation system. Although he was looking just for the golf course, he couldn't forget the problem with the parks. "Why couldn't we use the same heads, valves and controllers for both the golf courses and the parks?" he speculated. At least the components would all be the same in case of repairs. At best, the entire system could one day be tied together for maximum control.

There was no argument that the golf course should have one of the latest com-

puterized irrigation control systems if it was to be one of the best in the country.

Schumacher was interested in computer programs combined with reporting back features for components which give the superintendent the ability to make water-saving adjustments from his desk. With one central controller, the irrigation manager can check the pumping system, status of individual zones, pressures throughout the system, moisture sensors, amount of water applied per head, and even turn lake fountains on or off. By pressing a few keys, he can instruct the appropriate satellite controllers to reduce or increase the length of irrigation cycles according to evaporation/transpiration predictions for the day.

At the end of the day the computer can print a report of everything that took place with the system that day. One of the best points about a computerized irrigation controller is that its capabilities are expandable by simply changing a program or increasing its memory.

More than one company makes systems like these and all of them have been effective for golf course management. Ironically, it was Schumacher's determination to find a solution for the park fields that swayed him toward Rain Bird. "Golf course systems are hard-wired to the central controller," he reasoned. "With 38 parks spread out over roughly 150 square miles, hard-wiring is impossible."

When Rain Bird showed Schumacher their Maxi III System for the golf course, they brought along information about another system they had, called the Maxicom, that could communicate with field controllers by phone. Suddenly, Schumacher had a solution for the parks—one central computer communicating by dedicated phone line to a control unit at each park.

A major concern of the park director was thousands of dollars wasted each year on electricity to light fields that weren't in use. "The rule was the coach of the losing team had to turn the lights off after the last game at night," explained Schumacher. "It was like penalizing him for losing. So, it wasn't surprising to regularly find the lights on some fields had been left on all night. We were spending about \$100,000 a year on electricity alone, and close to another \$100,000 on bulbs and maintenance!"

Finally, it was virtually impossible to control vandalism at all 38 parks. The annual loss to vandals was estimated to be nearly \$100,000. The city council wanted to install gates to close off the parks.

The remote controllers, called cluster control units (CCU), operate as instructed by the central computer. Not only will they control irrigation devices at each park, but decoders can be added so they can turn lights on and off, open and close motorized gates and perform any other task controlled by an electric switch. "We could have uniformity between the parks and the golf courses and also solve our major park problems," Schumacher realized.

The council already had a positive recommendation from the golf committee. The demonstration at Fern Bell Park, the possibility of reducing electricity costs and vandalism, and the Mayor's indorsement were enough to convince the council to finally invest in an automatic irrigation system for its parks. The city council approved a Maxi III for the golf course and a Maxicom for the parks.

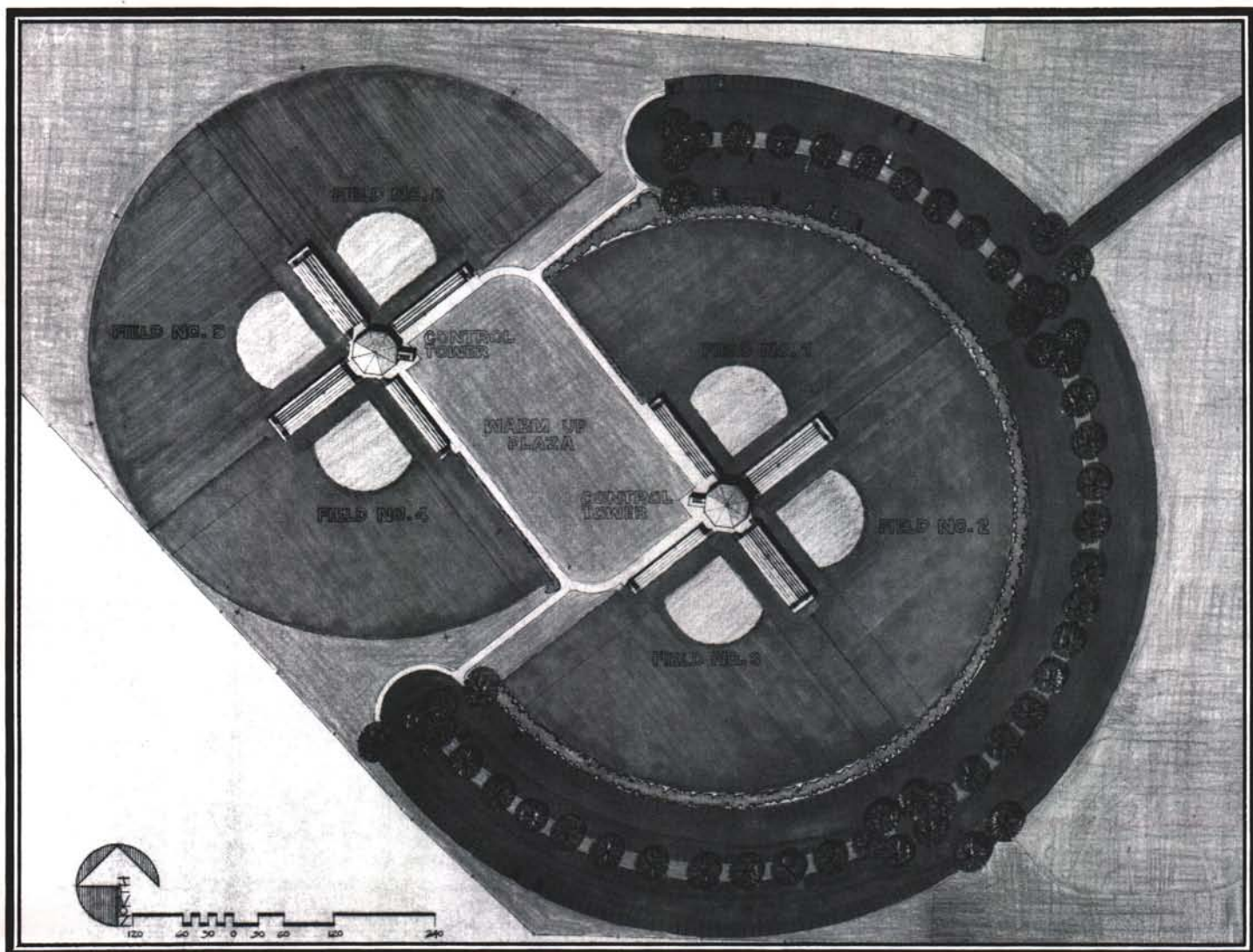
"Our three-man irrigation crew has installed CCUs and new pipes, valves and heads in six parks already," said Schumacher. "Our goal is to have 12 parks on the system within two years."

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The field at Davis Stadium is maintained by the Oakland A's grounds crew. Schumacher serves as consulting agronomist for the stadium.





A combination softball/soccer complex will be built during the coming year. The double-pinwheel design resembles commercial softball complexes.

## Huntsville Renovates

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Twice a day Schumacher sits down at the Maxicom, calls each park CCU, and checks for any irregularities. The system tells him exactly when the lights went off, how much electricity was used, or if the irrigation program operated properly. "If a night game runs late or games are cancelled, the league calls us up and we can change the timing on the lights by phone," he says. "I know exactly how much water and electricity was used at any of the six parks. This gives us an actual figure to determine field use fees."

Electronic gates have now been installed at the six parks. They open and close according to a predetermined and programmed schedule. If Schumacher needs to open or close a gate for any reason, he simply gives the command to the gate through the Maxicom. For safety's sake, a switch was installed on the park side of each gate. "We wouldn't want to force anyone to spend the night in one of our parks waiting for the gate to open the next morning," laughs Schumacher.

At first, the thought of learning how to operate the IBM personal computers that control both the Maxi and the Maxicom con-

cerned Schumacher. "Believe me, I was computer illiterate. So, I started out with the simple stuff and in a few hours I got the hang of it. If you do something wrong, the irrigation program lets you know and tells you how to fix it. One of the best things about the personal computer is that it can operate all types of software, not just the irrigation programs. When I'm not using the computer for irrigation, I use it to write letters, generate reports and keep track of budgets."

The irrigation program enables Schumacher to water all fields at the same time instead of a few at a time with the old quick-coupler system. The parks use city water while the golf courses have wells. Since there is no need to have a crew member present when the system is running, irrigation can take place at night when city water consumption is lowest. If there are any problems, like a stuck head or broken pipe, the computer will let you know the following morning. A default program can turn off any zone automatically if irregularities in water pressure or volume are detected.

"The players seem to care more about the parks now that the fields look better," Schumacher reveals. "We mark them once

a week with a combination of paint and Roundup. Skinned areas are rolled daily during baseball season. All fields are irrigated after the last game at night so they are dry before the first game the next day. "The best way to wreck a field is to play on it while it's wet," he warns. All six parks currently irrigated by Maxicom are also overseeded and aerified. He aerifies in April before applying preemergence herbicides. The parks have Ryan units pulled by tractors. "This year we purchased two deep aerators called Turf Quakers," says Schumacher. They operate like side-by-side vibratory plows, cutting a series of narrow slits as deep as a foot into the soil. By slicing through sub-surface layers, he has improved drainage and eliminated wet spots in the fields. He plans to use both types of aerifiers in the future.

Schumacher has set up test plots at one park to show the differences between irrigated and nonirrigated turf, 100 different varieties of cool-season grasses, and the impact of aerifying. "Aerification not only improves the condition of overseeded areas, it enables some of the Kentucky bluegrass to survive the summer mixed in with the ber-

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mudagrass," he points out. "We are also trying a number of turf-type tall fescues for possible year-round use. The plots are open to the public so taxpayers can see what certain grasses look like before they seed or sprig their own yards."

With all those fields to mow, Schumacher needs large equipment that can be easily transported from park to park. He likes the cut from the park's tractor-drawn seven-reel gang mower. The Jacobsen unit has hydraulic lift to simplify transportation between parks. Recently, he started using a Mott Interstate fine-cut flail mower to see if he could approach reel mowing quality with less equipment maintenance. After one year Schumacher feels the fine-cut flail has a place in park field maintenance.

One of the most exciting new responsibilities facing Schumacher is constructing a softball/soccer complex. Again, Huntsville went a step beyond normal. The new director of parks, Ken Gibson, and Schumacher liked the "pinwheel-type" softball complexes which have four softball fields surrounding a central concession area. Rather than settling for a single pinwheel, they opted for two with a soccer field in the middle. "It's going to look like two Pac Men facing each other with a soccer field between them," describes Schumacher. "We eliminated one softball field from each pinwheel to fit the



Schumacher communicates with cluster control units at six different parks twice a day.

soccer field in. The entire area will be lighted, have stands and hopefully someday will host both softball and soccer championship games."

With the exploding popularity of soccer, the city has also decided to turn the runways of its old airport into a 20-field soccer complex. The new facility will then be next to the city's 25-year-old Jetport Golf Course which may also be completely renovated.

Despite an unusual interest in the parks, Schumacher is at home on the golf course. Two years of planning and work ended in May when Huntsville Municipal Golf Course

re-opened. Schumacher and superintendent Charles Agnew love to watch the expression on golfers faces when they approach the first tee and see solid Tifway 2 fairways, bentgrass greens, more than 50 traps and six lakes with fountains. "Many golfers who gave up on the course three years ago are coming back," boasts Schumacher. "They can hardly believe it's the same golf course."

More than 1,000 sprinkler heads dot the course, connected by 40 miles of wire and 15 miles of pipe. The Maxi III computer controls the heads through 28 field control units. Pump stations at two wells are also operated from the desktop computer. The pumps are run only when the system is operating to conserve energy. Even the fountain aerators in the lakes are programmed to go off at night.

"We keep a close eye on the weather," says Schumacher. "Anytime we get rain we adjust the cycles to save water." Admittedly this is guesswork, but a new Rain Bird weather station that constantly records humidity, wind speed, evaporation rate, and temperature information is planned for installation soon. "The computer takes the information from the weather station and calculates evapotranspiration, the amount of water lost from the turf by evaporation and transpiration (through the foliage)," says Schumacher. "It sounds complicated, but it boils down to the amount of water that needs to be replaced through irrigation on

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a given day. By applying only what's needed, we will save water and energy."

The experience of renovating one golf course has Schumacher anxious to get started on another. The Jetport course has wide, flat fairways—the type of course good for beginners. "It's important for a municipal course to be realistic about the public golfer," says Schumacher. "While some sand and water hazards may challenge the golfer, too many scare them away. But, playing on bare fairways is just as discouraging. Beginners deserve well-groomed turf just as much as scratch golfers, and that can't happen without efficient irrigation."

All this work may seem spectacular for any city to do over a ten year period. The amazing thing is Huntsville has done it in less than five years! Ground was broken for Davis Stadium in the fall of 1984 and was ready for the Stars opener April 19, 1985. The redesign of Huntsville Municipal Golf Course started last year and the new course, with a new name, opened in May. Renovation of the park irrigation and lighting systems also started last year and will be complete in less than two years. Construction should begin this year on the softball/soccer complex.

Outside of sports turf, Schumacher is also responsible for the landscape and medians in the city's new 1,200-acre Research Park. More than 70 acres of grass medians wind through the industrial park which contains



The irrigation system installed at this Little League field convinced Huntsville residents and the city council that a new irrigation system was needed for all park fields.

offices for numerous high-tech companies, including Boeing, McDonnell Douglas, Tel-edyne and others. "It's like having a one huge park with all the same maintenance, irrigation and lighting problems," he comments. "Now it's hard to imagine taking care of all these acres of turf without a computer," Schumacher remarks. "Irrigation is just part of it. With all the different types of recrea-

tional facilities in parks today, it's nice to know a computer is backing you up. Especially when the park department is forced to grow as rapidly as it has in Huntsville. Of course, it makes a big difference to have the support of the mayor and the city council. The best way to get that is just to demonstrate what you can do to the taxpayers in the way of sports facilities." ●

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## MILORGANITE CLEARED OF ASSOCIATION WITH LOU GEHRIG'S DISEASE

An epidemiologist has concluded that there is no statistical evidence to support the recent accusation by a Wisconsin neurologist that Milorganite may have caused three San Francisco 49ers football players to contract Lou Gehrig's disease (amyotrophic lateral sclerosis, ALS). Sales of Milorganite and other sludge-based fertilizers and composts declined after the *Milwaukee Sentinel* ran a story based upon information from Dr. Benjamin Brooks, a University of Wisconsin-Madison researcher.

Alfred Rimm, Ph.D., professor of biostatistics and epidemiology at the Medical College of Wisconsin in Milwaukee, has reported after an in-depth study that any link between Milorganite and ALS is "preposterous." Rimm reviewed medical records from the past five years to compare exposure to Milorganite with the incidence of ALS. "If anything, the incidence of ALS in southern Wisconsin, the area with the highest exposure to Milorganite, was lower than you would expect to find in any large city," reports Rimm. The incidence of ALS in the area was 1.24 cases for every 100,000 people compared to 1.9 cases per 100,000 found in major U.S. cities. "Furthermore, there has been only one case of ALS out of all the Milwaukee Sewerage District em-

ployees in more than 60 years of production. You would expect to find hundreds if \*\*\*organite did cause the disease."

...he records indicated that the greatest incidence of ALS is found with people who have experienced trauma to the body, including broken bones. "Football is a sport where trauma and broken bones are common. If you want something to pin the 49er's three cases of the disease on, pin it on the sport. We also found no record or recollection by the grounds crew that Milorganite was ever applied during the early 60s when the players used the field."

The Environmental Protection Agency sent an investigator to Milwaukee to review the evidence from both Brooks and Rimm. The conclusion of the investigator was that there was no connection between the product and the disease and that further investigation was not necessary.

"It's upsetting to see what unsubstantiated accusations can cause," says Rimm. "A number of ALS victims were preparing to sue the Milwaukee Sewerage Commission before the facts were presented. Sales of the product were unfairly impacted by the publicity."

It wasn't just sales of Milorganite that have been hurt by the negative publicity. "All sludge-based products have been hurt to some degree," says Hank Leibe of East Bay Mud in Oakland, CA. Leibe estimates that there are more than 200 producers of

sludge-based compost in the U.S. "Composts are a very safe and necessary way to solve a waste disposal problem in this country. Landfills for sludge are harder to find and higher in price. By mixing the sludge with an equal amount of wood chips or saw dust and composting the material, you get a biologically-safe product with a large number of benefits."

## SPORTS PRESS FEATURES SUPPLIER OF INFELD MIX

Jim Kelsey, president of Partac Peat Corp., is getting used to calls from national publications and networks about his product, Beam Clay baseball infield mix. First, the Associated Press called. Then *Sports Illustrated*, CNN, CBS and NBC. The start of the professional baseball season had motivated sports reporters to find out more about this "special dirt" grounds managers talk about.

"Reporters seem fascinated with the idea that the dirt on the mound is different than the dirt at the plate and that's different from the base paths," said Kelsey. CNN taped and aired a three-minute spot about infield preparation. *Sports Illustrated* ran an item in May. "It seems to be snowballing," says Kelsey.

The attention started when Kelsey's hometown newspaper ran a feature on his

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