

Inching Closer to the Sun

By Tara Beecham

A look at today's hydroseeding materials and equipment

Quality, even in a recession, never goes out of style. Contractors seek effective, lasting erosion control on their project sites, as well as affordability. Because of the easy application process and the products' staying power, hydroseeding remains a viable, economically savvy solution during bleak economic times.

Pairing the right product with a particular site requires consideration of the

climate, the slope, and any surface challenges that need to be addressed at the project's onset. Steep slopes, limited access, and heavy rains recently provided a triple challenge for one Mississippi hydroseeding service, which it surmounted by using combination of erosion control techniques, balancing quality products with quality execution.

Reel Neet Erosion Control Service hydroseeded a new pipeline site stretching through Vicksburg, MS, working to stabilize the soil along a 10-mile stretch of a





Trajan Inc.

A newly constructed wall at Cheviot Hills Golf Course

right of way. Crews battled a series of environmental challenges, fighting to stabilize the highly erodible soil before winter's onset.

Just getting the equipment to the remote site was difficult during the storms, and pumping water to the machines proved to be a struggle as well, according to Bobby Thomas, president of Reel Neet, which is based in Southaven, MS. The company was contracted by Kender Morgan to hydroseed the site.

Workers remained sensitive to the site's needs, despite experiencing heavy rains during the construction period. "You've got water bodies and wetlands on the right of way," he says, explaining that the site experienced more than 8 inches of rain in October alone.

The contractor's primary goal at the site, however, was to anchor the soil, particularly on 2:1, 3:1, and 4:1 slopes found on the site.

The company used Titan 330 (T330) HydroSeeders from Fairfield, OH-based Finn Corp. Initially, Reel Neet used four of these machines at once on the site, but gradually reduced to using two.

The T330, which is used on a wide variety of sites ranging from mine reclamation areas to industrial and highway projects, has a 3,000-gallon working tank capacity and a maximum discharge distance of approximately 230 feet. These machines can mix not only

liquids and powdered products but also solids. The T330's mixing capabilities also include hydraulically controlled paddle agitation as well as liquid recirculation, and material passes through a two-valve straight line during discharge for increased output, higher pressure, and a further slurry discharge distance.

"They're a good product, with good service if you need help," says Thomas.

Seed for the site came from a mix that included natives such as byhalia, Bermuda, fescue, clover, and rye stem. "Byhalia and Bermuda are the most common in this area. They cut it for hay," Thomas says.

In addition to hydroseeding, the company used a variety of erosion control methods on the site including silt fence, sediment logs, and Flexterra, a flexible growth medium that bonds directly with soil and is produced by Buffalo Grove, IL-based Profile Products. The product's composition includes 75% thermally processed wood fibers and 10% proprietary crosslinked hydro-colloid tackifiers and activators, as well as a variety of crimped, interlocking fibers and moisture.

Reel Neet also used hydraulically installed matting. Even during the torrential rain conditions, practically every seeded area already had grass established by the time workers monitored it. Despite the odds seemingly weighed against it, the project was deemed a success.

"With the new products that are coming out for flexible growth material, I think it's going to be the coming thing," says Thomas as he looks towards future trends in hydroseeding.

Highways and Golf Courses

Highway projects often require hydroseeding services. In addition to considering the climate when selecting a seed mix, Tren Hagman, of Granite Seed in Lehi, UT, suggests keeping in mind the overall goals for the site. For example, if it's a critical area where soil is danger of erosion, select "faster-germinating species" instead of natives.

"If it's an area like a national park," he says, "you want to go with native varieties from that area."

Work on highway projects remains steady, says Ron Dietz, president of Dietz Hydroseeding based in Sylmar, CA, noting that while there's not a "spike" in that branch of hydroseeding work, the amount of work has not dropped off.

One sector that will always rely heavily on its green assets, golf



Trajan Inc.

This wall was constructed with earthen baskets.



Trajan Inc.

Flexterra and a seed mix were applied to the finished wall.



This wall measured 40 feet at its highest point.

courses continue to provide hydroseeding contractors with projects that provide an emerald glow today and establish strong roots for future foot traffic. Typically, when one pictures the green aspects of a golf course, however, one imagines the carpeted earth below. During the onset of one recent project, creative minds took the vision of a wall and instead saw a canvas.

In early September 2009, Trajan Inc. was contracted to hydroseed a newly constructed earthen basket wall at the well-established Cheviot Hills Golf Course, located on Capital Boulevard north of I-540 in Raleigh, NC. North Carolina-based ST Wooten served as the development general contractor, and Carolina Outdoor Services based in Matthews, NC, served as the wall subcontractor, explains Susan Keen, project engineer and owner of Trajan.

“Discussions first began one week prior to my starting the project. I was invited out to the site to see products already purchased for the project. A seed mix and hydromulch had already been purchased to be used to hydroseed the wall. My Pennington/Profile representative,

Brian Free, accompanied me to the meeting,” says Keen. “We urged a change of mulch to Flexterra in lieu of the hydromulch. Brian was able to present other cases in Georgia where Pennington had successfully used Flexterra and a specialty seed blend. I negotiated a contract with Carolina Outdoor to apply Flexterra and the wall seed mix developed by Brian at Pennington Seed.”

Free notes that the use of Flexterra was possible because of the machinery available.

“When I learned they had a 1,700-gallon Finn [HydroSeeder], I questioned them about using Flexterra, and they responded that they had considered it but didn’t think that ‘real thick stuff’ would work,” recalls Free, business development manager at Pennington Seed based in Madison, GA. He explained it could indeed be used as part of a two-step process.

Time constraints presented an obstacle.

“We agreed to seed the wall starting the following week,” says Keen. “Brian Free and Brad Eckley with Pennington helped to coordinate product delivery, while I concentrated on the plan for execution. All the necessary coordination and planning was accomplished within that week and product was delivered to the site Friday.”

The next challenge the team faced was the immensity of the wall itself.

“The wall is 3,500 feet long and about 40 feet at its highest point,” says Keen. “Spraying from the top down and from the bottom up presented the best outcome with minimal shadowing.”

Accessibility proved difficult. “The majority of the wall was not accessible from below by vehicle, and a 6-foot-high chain-link fence was installed at the top of the wall. In order to work around the chain-link fence, I contacted Stanley Dill at Sunbelt Rentals to inquire about renting an articulating boom lift. Stanley helped to coordinate safety training and the rental of an 80-foot lift,” says Keen.

“I also worked on methods to easily feed hose over the fence to the ground below. We used a long PVC pipe attached to the HydroSeeder to feed the hose over the fence at the top of the wall. It kept the hose from getting caught up in the fence while using the boom and while walking along the base of the wall to spray.”

Heavy rain affected only one day’s work at the project’s onset.



To reach the entire wall with minimal shadowing, crews sprayed from the top down and from the bottom up.





Profile Products

Aerial view of the Cheviot Hills Golf Course

“We were originally scheduled to begin seeding on the 8th, but due to the amount of rain the previous day, the site was shut down,” says Keen. Silt fence, sediment basins, and berms were among the additional erosion control methods used at the site, and, in some areas, temporary seeding and straw with asphalt tack, according to Keen, who says Trajan was not involved with the instillation of these products.

“The goal for seeding the wall was stabilization for a period of two years while a vine was established,” she explains.

Hydroseeding on Sand

Creative minds will always be able to visualize green among the brown, or, even grass growing above the Middle Eastern sand.

Half a world away from the Cheviot Hills Golf Course, Hydrograss Technologies Inc. seeded 120 acres of the brand new Yas Island Golf Course in Abu Dhabi, part of the \$45 billion Yas Island Marina Circuit project. The project’s owner is Aldar Properties.

While company workers are familiar with sandy conditions, such has been the case when Hydrograss Technologies hydroseeded upscale golf courses in Florida and the Bahamas, the creation of this site was unique. Sweet sand for the site was gathered near the Oman border, which had many huge mounds.

“They dredge the ocean soil, then shape mounds with that,” says Bob Arello, owner of Hydrograss Technologies Inc., which has offices in Boston, Sarasota, FL, and Okatie, SC. “We were hydroseeding all those mounds before they put the fairways in,” he says, explaining that the work on the links-style course began in June 2009 and continued in 115- to 120-degree heat daily throughout the summer. “We use Apex [Curb and Turf] hydroseeding machines, four of them. We use a native seed that’s specified by [golf course designer] Kyle Phillips. It’s six native varieties: blue gamma, Canada wild rye, and natives.” Workers sprayed the mix directly onto the sand.

“It’s taking very well. We used our GeoPerm. We put it on in

order to get the seeds to germinate,” says Arello, adding that this also protected the seeds from the unrelenting sun. “It will retain 400 times its weight in water.”

The bonded fiber matrix product has a combination of polymers. It’s sprayed onto a surface where it will bond with the soil, or in this case sand, and its combination of guar gum tackifier, softwood fibers, and the proprietary crosslinking agent form a porous, water-insoluble mat that protects the seed, while at the same time foster seed germination.

GeoPerm is applied to a site in the form of a slurry and is designed to be used in areas where slopes are 2:1 or steeper. The GeoPerm mat is also designed to protect seeds exposed to extreme wind conditions.

“We’re concerned about wind erosion,” Arello says. “Coming off the water, there’s so much windblown sand, it can ruin an area in about four hours.”

Diverse Challenges

A new shooting range for the sheriff’s department on Adams Center Road in Fort Wayne, IN, left no opportunity for shooting blanks when it came to hydroseeding the site’s challenging 2:1 shooting range mounds in September 2009. “We used [Finn Corp.’s] tackifier in the geoskin mulch because we’ve had good luck with it before,” says Dave Harlow, president of Harlow Enterprises based in Fort Wayne, who praises the product’s endurance qualities. Flat areas of the site were seeded, covered with straw, and crimped.

Harlow adds that erosion control blankets were used on the detention pond at the site. The project had an erosion control budget of \$85,000, and the site is monitored weekly. Harlow described the hydroseeding plan as “working great.”

Although commercial development typically comes to mind when one thinks of large-scale, challenging hydroseeding projects, residential neighborhoods also require hydroseeding services, particularly as an erosion control measure. After fire consumed large swaths of Yorba Lynda and Brea, CA, in 2008, Nature Gro Corp. workers seeded about 150 acres of burned hillside from December 2008 through February 2009 near Tonner Hills in Brea.

“Tonner Hills is a future master-planned development of Shea Homes. There was little danger to homes, as the area burned had a buffer zone of bare earth due to recent grading operations,” says Medardo Canales, president of Nature Gro, which based in Ojai, CA. “The main concern was that much of the area that was burned was revegetation mitigation area; that is, hillsides that were to be left ‘natural’ or had been planted to revive the native species. The fire destroyed all this mitigation area and therefore had to be reseeded in order to reestablish the plant life.” The denuded hillsides also had to be protected from erosion.



Hydrograss Technologies

Dredged sand forms the Yas Island Golf Course in Abu Dhabi.

“A seed mixture of the various native species was chosen and used in conjunction with a fiber matrix application. This fiber matrix consisted of virgin wood fiber and [Bakersfield, CA–based Terra Novo’s] Earthguard. Earthguard was used as the binding and protection agent as it has proved itself to be 99.5% effective for erosion control,” says Canales. “This is as tested by CalTrans. It has shown itself to be of superior protection in the field over several years and millions of square feet of applications.

“As to its advantages in fire areas, it is designed to bind soil and ash particles together,” he continues. “This prevents the particles from being easily transported by wind or water. Another great benefit with the Earthguard is the fact that it does not harden or prevent water infiltration. This is very beneficial for seed establishment. It is also easily applied and does not require any special equipment or cleanup.”

Sandbags and straw wattles were some of the additional erosion and sediment control measures that used on the site. The inaccessibility of some areas of the Tonner Hills site also presented a hydroseeding challenge.

“Some were quite remote and required 1,300 feet of hose and elevation rises of 300 feet,” explains Canales. “This would have posed a problem for most hydroseeding machines, but we have a new Finn Titan machine that is capable of pumping long distances. Other ‘conventional’ machines could not have reached these areas.”

A biologist has continued to monitor the site.

“The project has had tremendous regrowth of the vegetation and is not an erosion problem any longer,” says Canales.

Revegetation is a common issue anywhere there is disturbed soil, whether that soil has been disturbed because of a business venture or to limit erosion in an area that’s experienced a challenge posed by nature’s destructive side.

While the economic recession has had a terrible impact nationally, Dietz remains positive when discussing the future of the hydroseeding industry. “There’s a high percentage of hydroseeding being used on the existing projects because of its economical advantages,” he says. “It’s not that there is more work out there. I think it’s true for



Nature Gro Corp.

Seed mixtures are applied to a burn area in Tonner Hills.

anybody who has projects that need to be done, clients are looking for quality for the dollar out there.”

This means the bid that wins is not necessarily the least expensive. “People want a fair price, but they also want the higher-quality work,” says Dietz. “People that provide quality products and quality work are the ones that have work out there right now.”

Hagman offers similar observations, noting that smaller companies continue to emerge and that the industry as a whole has “a pretty bright future.”

“The recession has hit the hydroseeding industry. It’s not been hit harder than any other industry,” he says, adding, “People are sticking with what they know.”

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