

Speedy Seeding Prevents Soil Erosion

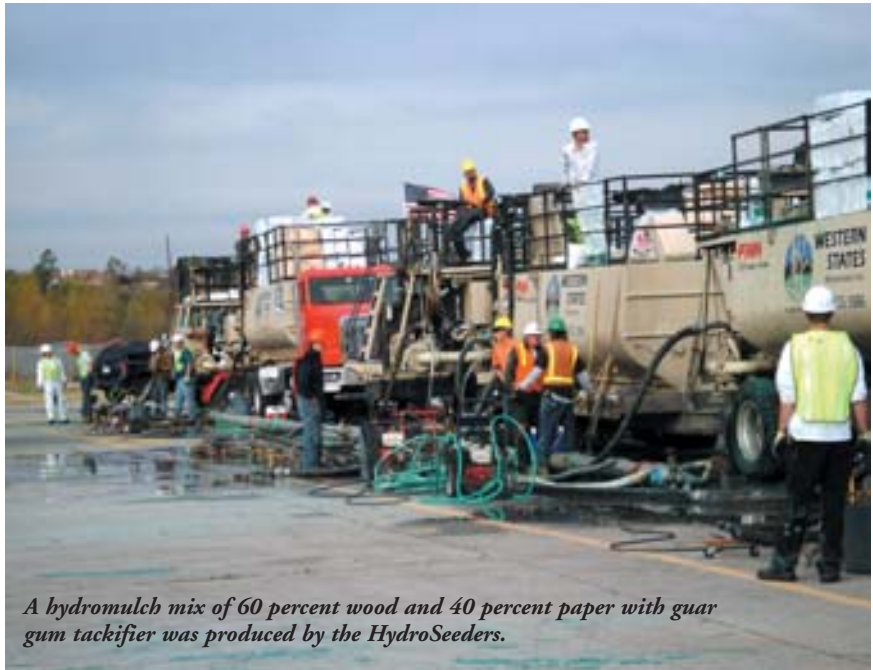
Hydroseeders work at break-neck pace on Santiago Fire Project.

In a business world driven by healthy competition, it's nice to hear the occasional report of companies coming together for the common good. In the case of an erosion control project in the aftermath of southern California wildfires near Corona, CA, in late October 2007, it was more than a feel-good story—it was an environmental necessity.

After the fires burned more than 28,000 acres of the Santiago Canyon, including 6,701 acres of Cleveland National Forest, the U.S. Forest Service determined that 1,241 acres of forestland had been severely damaged by high intensity fire. With slopes at less than 50 percent, this acreage needed to be stabilized with hydromulch until the natural process of re-vegetation would eventually take over. This was necessary to reduce the immediate possibilities of soil erosion, mudslides, and flooding of the surrounding cities and homes.

The contract for restoration of the Santiago Fire area was awarded to Aero Tech, Inc. a New Mexico-based contractor specializing in aviation services, including aerial hydromulching. But Aero Tech wasn't going at this one alone. The company partnered with Western States Reclamation, Inc., an environmental contracting corporation with headquarters in Frederick, CO.

Taking the large magnitude of Santiago Fire job into account, Aero Tech and Western States brought in two additional companies to round out what has become a four-member fire reclamation posse over the years. Wildlands, Inc., an environmental restoration company based in Richland, WA, and Erickson Air-Crane Incorporated out of Central Point, OR, joined the team, and the race was on to restore the affected areas of the Santiago Canyon.



A hydromulch mix of 60 percent wood and 40 percent paper with guar gum tackifier was produced by the HydroSeeders.

“The biggest challenge for any project is mobilization,” said Reid. “After a bid is accepted you have to move quickly to find locations for planes and equipment, and to secure a water supply and materials.”

The timing of the job made acquiring materials more of a logistical challenge than usual. “When you have a job of this size, you need so much material that you're basically draining the resources of the mulch industry,” said Adam McCullugh, project manager and estimator for Wildlands. “On top of that, this project came about during the local fall seeding window, so distributors are already supplying contractors who are doing work that's been planned out ahead of time. So we're drawing resources from wherever we can get them. Some of the mulch even has to come from clear across the country.”

With about 40 workers and two staging areas with ample supplies and equip-

ment in place—Western States and Aero Tech set up at Corona Municipal Airport, with Wildlands and Erickson at a heli-base near Irvine Lake—the reclamation project officially began on December 17, 2007.

Equipment Used

Aero Tech flew six Air Tractor AT-802 fixed-wing airplanes out of the airport operation, while Western States mixed hydromulch and loaded the planes using seven HydroSeeders® from Finn Corporation (www.finncorp.com), including two of the manufacturer's new Titan 400 units. “We got the Titan HydroSeeders right before the job started,” said Reid. “We also had four Finn T-330's and one T-400 on this project.”

Finn's T-400 and T-330 are each powered by a 115-horsepower engine. The new Titan 400 features a 170-horsepower engine. “I was very interested in the increased productivity of the larger

motor and the larger pump,” said Reid. “It’s a big help in getting material out faster. The larger volume is a big plus as well. Sometimes our sites are remote and a long way from water. Every extra bit of water and material you can haul saves time and cuts down on trips to and from the base.”

Western States used its HydroSeeders to produce a hydromulch mix of 60 percent wood and 40 percent paper with guar gum tackifier, a standard material combination for Forest Service projects. While the material itself wasn’t anything out of the norm, the fast pace at which it had to be produced was significant. Western States had to run its machines nonstop with high volumes to keep getting planes reloaded as they returned.

“Each plane holds 800 gallons of material,” said Reid. “We pump directly out of the Finn equipment into the airplane. From the moment we’re hooked up to the aircraft, it takes about 40 to 60 seconds to load it up. It’s a very high-tempo operation, so the machines have to produce high volumes of material

quickly—and they did!”

At the Irvine Lake site, Erickson flew an S-64 Airplane Helitanker equipped with a 2,650-gal firefighting tank. Wildlands ran two Finn HydroSeeders of their own—a T-330 and a Titan 400, which Wildlands had received two months earlier for a job in Los Angeles. Mulch was delivered from the Finn machines into a storage tank. A large eight-in. pump was then used to load from the tank to the helicopter.

“The helicopter was averaging anywhere from 10 to 15 minutes for turnaround time between reloads,” said McCullugh. “Once it landed and we were hooked up, we were loading 2,200 to 2,500 gallons of material into the helicopter in as little as 40 seconds.”

Keeping the storage tank full of enough material to fully load the helicopter required the HydroSeeders to run continuously. “Stopping or slowing down just aren’t options on a job like this,” said McCullugh. “We’re able to put a lot of material in the Finn machines. The Titan has a third agitator

for mixing, and we can pump out some pretty thick slurries. The higher volume that the equipment can handle is very important—it allows us to get the job done quickly.”

Unfavorable weather conditions made speed and efficiency even more critical to the project’s success. The contractors had to wait out heavy rains, fog, and high winds on several occasions, so taking advantage of breaks in the weather pattern was an absolute must.

By the time the project was completed on January 21, 2008, the six Aero Tech planes and Erickson Helitanker had combined to put in well more than 1,000 hours of flight time. In that time, the aircraft delivered 4.5 million gal (or 1,200 tons) of hydromulch to the 1,241 affected acres of the Santiago Fire, a rate of more than 3,600 gal/acre. Ground verification by Western States and Wildlands confirmed that the hydromulch was holding after rains fell on the newly restored portions of the forest, essentially making the project’s success official.