

# CalContractor

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## MAGAZINE

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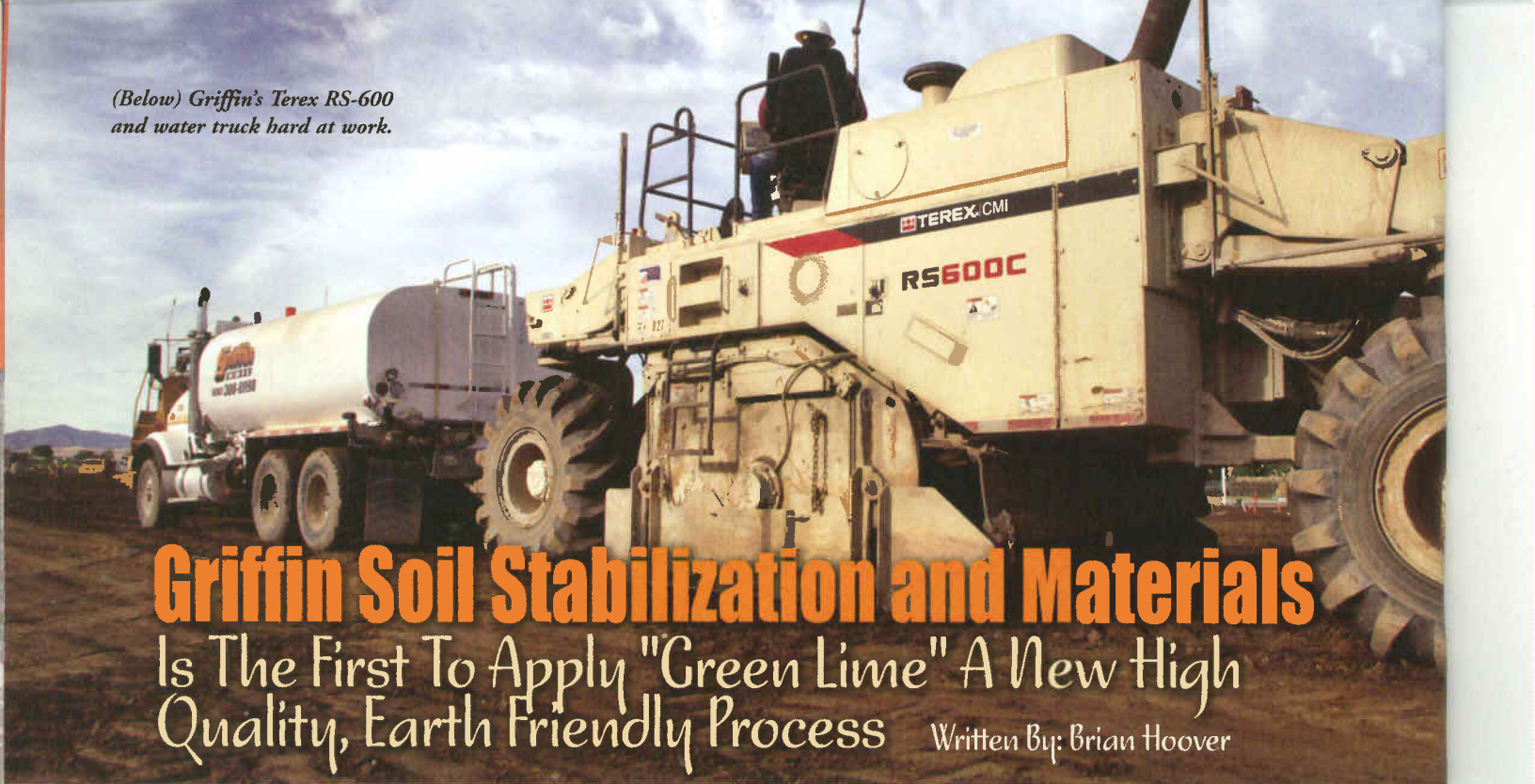


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(Below) Griffin's Terex RS-600 and water truck hard at work.



# Griffin Soil Stabilization and Materials

## Is The First To Apply "Green Lime" A New High Quality, Earth Friendly Process

Written By: Brian Hoover

Is there really such a thing as "Green Lime"? Yes! And Griffin Soil located in Pleasanton, California, is the first to apply this new high-quality, earth friendly process on some projects in California and possibly the nation. Griffin Soil is now able to add "green credits to any stabilization project and upgrade quality, at the same time". The green lime is ASTM certified.

The process may be considered green for two reasons, the first of which is Griffin Soil is utilizing the native soil or the existing section that is already in place, as opposed to the traditional method of removal and replacement. This offers an environmentally friendly approach on several fronts. Primarily it replaces the importing of truckloads of base rock as well as the exporting of soil. In addition, it saves in fuel costs, carbon dioxide emissions and alleviates or reduces the bothersome truck traffic and the resulting damage to roads and neighborhood streets. Bill Howard, owner and president of Griffin Soil comments, "When you stabilize the existing soil you are replacing truckloads to the ratio of 40 to 1. By stabilizing the existing soil instead of importing base rock, we are able to save the owner as much as 40% and provide an environmentally conscience alternative."

The second reason is in the reagents themselves. It has been estimated that the cement and lime manufacturers are responsible for around 10% of all manmade carbon emissions in the world. These manufacturers burn fossil fuels to generate enough heat to in turn release carbon dioxide from limestone rock, thus creating quicklime and cement. Many engineers are already familiar with Flyash and Slag cement, which is considered green because they are "co-products" from another manufacturing process. When properly used they can even produce a better end product. The key to making Green Lime is in sending the massive amounts of carbon dioxide expelled to another beneficial production process. Griffin Soil has secured a source of high quality quicklime, where the carbon dioxide has been captured and used in a process to make sodium Bi-carbonate (Soda Ash). The more technical explanation can be explained by Dave Hamel of Searles Valley Minerals, "The carbon dioxide was used to convert soluble sodium carbonate in the brine to a less soluble sodium bi-carbonate. The sodium bi-carbonate solids would then be consigned to produce sodium carbonate, carbon dioxide and water. The carbon dioxide

and water would then be recycled. Any losses of carbon dioxide to the atmosphere and to the brine would be made up with new carbon dioxide from the limestone." So, when the quicklime is produced, the carbon dioxide is sent to a soda ash production facility, who then use it as an essential ingredient to convert their sodium carbonate into sodium bi-carbonate. Searles Valley is also part of Climate VISION (Voluntary Innovative Sector Initiatives: Opportunities Now), a public/private partnership which is seeking to reduce US industry greenhouse gas emissions by 18 percent by the year 2012.

Ultimately, the reagent to be used for any single project must match the soil type to produce the engineering goals set forth. To that end, Griffin Soil offers stabilization products from quicklime to cement and everything in between. Because Griffin Soil also has massive silo storage facilities, they can offer any combination of reagents on a composite basis. Most soils perform best with some sort of combination. The composite is called Quicklime Plus and has become the single most used reagent in California. When Griffin Soil gives a price for quicklime alone, the same price can be used for any of the composites as well.

This allows an engineer to fine tune the stabilization reagent to the actual soil encountered after rough grading has already begun. This can take all the guesswork out of specifying chemical treatment for a project.

Just as lime can be made to be "green", so can the equipment used to spread and mix on projects. When it comes to utilizing highly productive and environmentally friendly equipment, Griffin Soil has always been on the leading edge. For instance, they have personally engineered and developed their own patented lime spreader trucks, which are manufactured with an onboard dust collector system. Bill Howard explains, "Today's environmentally conscientious world and the California Air Resources Board are extremely dust conscious. This is Griffin Soil's response to the new air quality regulations in California. The regulations state that if the dust gets higher than the spreader truck or if it leaves the property boundaries, you are in violation. The dust collector is nothing more than a large fan that creates a vortex over the

transfer points, much like a vacuum cleaner working directly at the source where the lime is metered to the ground. The material that is collected is then recycled into the spreader truck. This is in addition to the computer controlled ground sensing radar system used to more evenly spread the lime."

Howard continues, "Griffin Soil utilizes the Terex RS-600 mixing machine along with other brands. However, the Terex is our preferred mixer in terms of serviceability. Having a machine that actually spends more time in the soil making money rather than in the shop costing money is a big deal in the soil stabilization world. The 600 horsepower machine allows for a good balance between the weight of the machine and the water pump. The 500-gallon per minute water pump gets enough water in the ground to hydrate the reagent in the soil. Lesser equipment may leave the soil too dry for complete hydration. Herrmann Equipment has been a godsend for this type of specialty equipment. In the past, the dealers did

not sell very many of these units per year so they did not stock enough parts and service was marginal. Herrmann has specifically trained individuals and they pay attention to the market and stock strategic components and wear parts. We have zero tolerance for downtime. Because these machines are put through unbelievable stresses, they take quite an abuse, so we need to know we can depend on them out in the field."

Bill Howard states, "In 2003 we formed the California Soil Stabilization Association (CSSA). Our stabilization solution offers a big bang for the buck for the owners who save 40% on subgrade costs. Our market share has risen by 15% per year and this process is now specified in most commercial projects bid today. Also, the future maintenance of the pavement section is greatly reduced in that they won't have numerous potholes to go back and patch later. In addition, since the asphalt or concrete road sections are now on a "pedestal", they can just replace the wearing surface when it eventually wears

*(Below) The purpose of this road is to have heavy duty access to vital structures in California.*

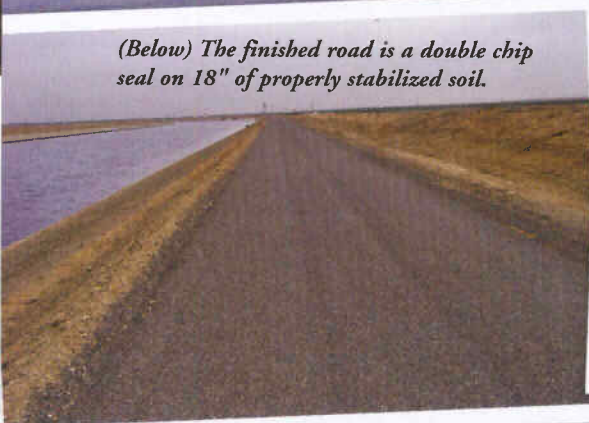


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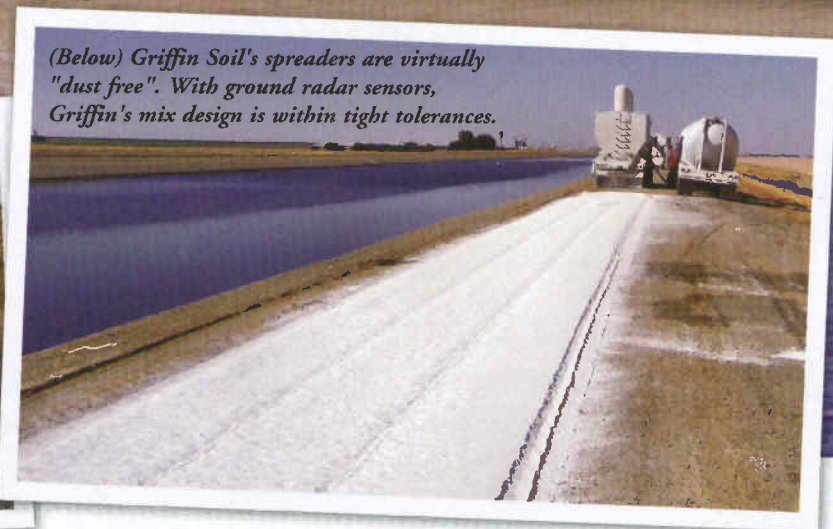
**YES!**



*(Above) The excellent service from Herman equipment helps keep this sophisticated RS-600 productive. The Terex allows Griffin to hook up to the water truck with a 4" water hose. This allows for enough water for proper hydration.*



*(Below) The finished road is a double chip seal on 18" of properly stabilized soil.*



*(Below) Griffin Soil's spreaders are virtually "dust free". With ground radar sensors, Griffin's mix design is within tight tolerances.*

out without having to replace the subgrade. In fact some of the earliest lime treated roads built were by the Romans. One of the most famous roads is the Appian Way in Rome Italy, which is still in use today, 2000 years later. When it comes time to repave they just replace the upper wearing surface."

Today Griffin Soil is headquartered in Pleasanton California with a branch office in Sacramento, California and an equipment yard in Sunol, California. Griffin Soil chemically treats hundreds of projects every year and is clearly a market leader in California. They are also the only such company to own and maintain their own storage facilities. One 10,000-ton facility is located in Redwood City and another 10,000-ton facility in Dixon, California. Quicklime is manufactured on a continual basis and

the construction market is much like a roller coaster. Bill Howard explains, "Since our competitor is base rock, which is generally always available, it is important for the stabilization industry to allow for ample supply during peak demands when otherwise there would not be enough lime for construction. This also allows us to be our own customer and in turn gives us a better price. The storage is very important when there is a potential shortage of lime. Often projects have liquidated damages that can ruin you. The prospect of not having lime, to us, is not an option."

Ralph Esterly, who essentially pioneered the stabilization process as we know it today in California, started in 1965. Floyd Griffin, who acted as his general manager, purchased the company

in 1987. Later, in 1996, Floyd hired Bill Howard as his general manager with the idea that Bill would eventually buy the company and allow Floyd to retire. Bill did just that in 2001 and has been working since to continue to revolutionize the business. Griffin Soil is known for their leadership and advancements in soil stabilization, soil modification, pavement rehabilitation and winterization practices. What may not be as well known is that they also do value engineering for a variety of contractors and engineers, offering solutions that save time, money and the environment. For more detailed information on Griffin Soil and the solutions they provide, please log onto [www.griffinsoil.com](http://www.griffinsoil.com). **Cc**