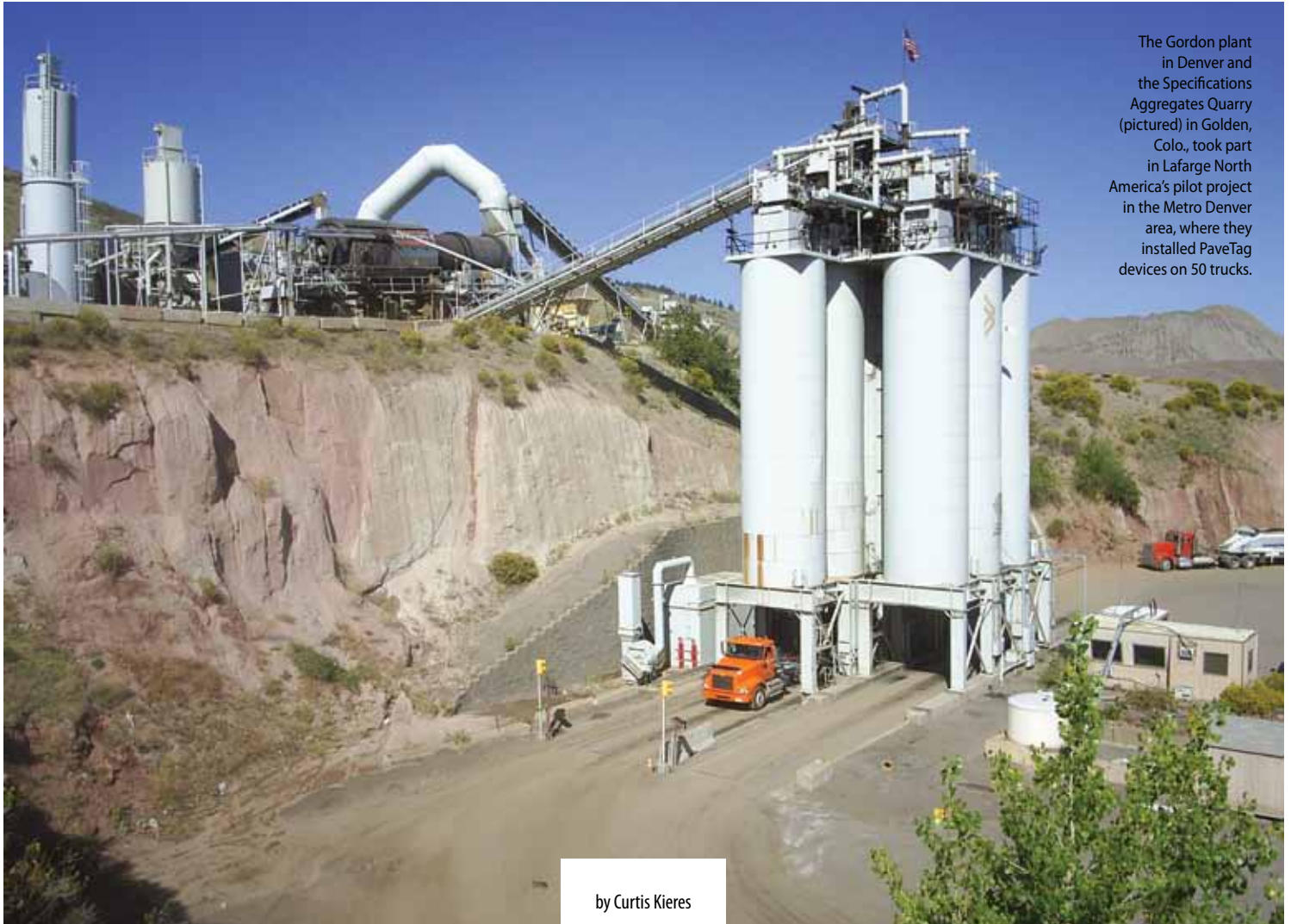


# Wireless Technology Crosses the Border

Multi-national enterprise adopts wireless tracking to monitor material delivery in real-time



The Gordon plant in Denver and the Specifications Aggregates Quarry (pictured) in Golden, Colo., took part in Lafarge North America's pilot project in the Metro Denver area, where they installed PaveTag devices on 50 trucks.

by Curtis Kieres

Lafarge North America, is one of the largest diversified suppliers of construction materials in the United States and Canada. As part of an ongoing effort to improve operational efficiencies, Lafarge personnel selected the PaveTag™ system to use throughout its operations in Colorado and Kansas. The technology is a wireless track and trace system.

As seen in *AsphaltPro* before, MINDS, Inc., Boisbriand, Quebec, developed PaveTag to address business problems in plant operations. By leveraging radio frequency identification (RFID) blended with GPS, cellular communication delivered over a web-based platform allows PaveTag to provide real-time alerts, notifications and reports to foremen, superintendents and personnel in the field. It tracks asphalt from the time it leaves the plant to the moment it arrives at the jobsite. During the asphalt-transportation process, it's vital to measure tonnages, time and

delivery location because these metrics are part of the hauling cost and quality assurance.

When the truck approaches the plant's silo, a fixed PaveTag interrogator reads its tags; the tag's unique ID number is associated with a specific delivery order. A paper ticket, which is printed at the scale house showing both the truck number and delivery information, is captured electronically. That data is then sent via the Internet to a secure datacenter housed at the MINDS office.

As the vehicle approaches the paver, a PaveTag interrogator on the paver captures the tag's ID number and, via GPS positioning and cellular communications on the paver, that data is also transmitted back to MINDS servers. At any given time customers can access reports on the data via the Web, and also by using SMS messaging or e-mail via smart phone.

**They also wish to implement a reverse method of PaveTag that involves tracking RAP from the milling machine to the stockpile.**



In the fall of 2009, Lafarge Western U.S. investigated the technology as an alternative to GPS-type equipment. The dump trucks used to deliver asphalt for Lafarge are often contract haulers, thus it was difficult for Lafarge personnel to require the installation of wired-in GPS equipment. With the PaveTag system, Lafarge simply needs to get the subcontractor's permission to place the PaveTag device on non-company haul trucks. The PaveTag system doesn't use satellite airtime; its RFID is a localized system and once the infrastructure is in place, personnel have unlimited use of the system without recurring network data fees.

Transportation is a major expense next to material cost. Even a 1 to 2 percent improvement in truck efficiency is huge. Lafarge saw the potential of PaveTag and decided to deploy a pilot project in the Metro Denver area. The Gordon plant in Denver and the Specifications Aggregates Quarry (Spec Agg) took part in the project, installing PaveTag devices on 50 trucks.

**ABOVE:** This is the marker loop antenna on the side of one of the silo legs at the Wichita, Kan., plant location. **BELOW:** This arrow points to a PaveTag tag correctly installed on a haul truck.



The top of this Lafarge paver includes a marker loop antenna and long range antenna on a jobsite in Wichita, Kan



This is the PaveTag box installed inside the control house at SpecAgg.

The success of the tracking for Lafarge led them to expand the system to Northern Colorado (Ft. Collins, Greeley), Southern Colorado (Colorado Springs, Pueblo) and to Kansas (Wichita) asphalt operations during the 2011 season.

"The MINDS team was great to work with and installed the system in a timely manner," Kevin Garcia said. He's the director of performance and innovation of asphalt & paving for Lafarge North America WUS. "Given the relatively small window since deployment we've realized opportunity for improving our logistics and reduction in costs.

"PaveTag is a valuable tracking tool that enables information to be accessed in the field rather than manually trying to gather info by phone."

Lafarge currently plans to deploy and continue to evaluate the system into 2012. They've found other applications for the system as well, such as aggregate tracking for tracing the movement of materials from the quarry to the jobsite. They also wish to implement a reverse method of PaveTag that involves tracking recycled asphalt pavement (RAP) from the milling machine to the stockpile.

The RAP to the milling machine is the next generation application. It hasn't been deployed yet, but the concept is to equip the milling machine with the PaveTag box. Another will be set at the facility where the material is stockpiled. It's a reverse logistics system to the regular PaveTag system Lafarge uses. But it's no surprise to the MINDS team that this new customer is innovative.

"We were pleased to work with the professional team at Lafarge," Dwayne McMurchy said. He's the project coordinator at MINDS, Inc. "They demonstrated commitment and drive to ensure the system was a success." 