

# HIGH AND DRY

## TEXAS QUARRY ONE OF THE FIRST IN THE STATE TO GO TO A DRY DUST-SUPPRESSION SYSTEM.

By Mark S. Kuhar



### CHALLENGE:

Reduce dust and water usage to contend with drought conditions.

### SOLUTION:

The TRANSPAR system, developed in France by R. Brunone Inc.

### TIP:

Dry dust suppression addresses critical emissions and water-conservation issues that are important to the company and community.

In Texas, water is like gold these days. The state is in the midst of the third-largest drought in recorded history. Rainfalls have maintained record lows and will continue to do so in areas all across the state, according to climate specialists.

For quarry operations in Texas, conserving – or even eliminating – water usage, to the furthest extent possible, is a business priority. And as always, keeping dust to a minimum is a necessary health, safety and community relations practice.

To that end, Industrial Asphalt's KBDJ Conservation Land & Quarry (KBDJ) has installed new equipment and technology that is estimated to reduce water usage by at least 80 percent and dust emissions by up to 35 percent at its Hays County, Texas, quarry.

KBDJ is one of the first quarries in the state to implement a dry dust suppression system, originally developed to meet more stringent European emissions standards. With the reduced need for water, KBDJ is exploring potential uses for its al-

ready-drilled wells, including the possibility of using them to monitor local groundwater quality.

**"It is in the best interests of both our company and our industry to invest in technology that sustains the communities in which we operate," said Jill Shackelford, president of KBDJ.**

"Dry dust suppression helps protect two natural resources of great value to our neighbors – fresh water and clean air – allowing our company to continue providing locally sourced raw materials that are the building blocks for our region."

Most quarries in Texas and the United States control dust emissions by spraying crushed rock with water. The TRANSPAR dry dust-suppression system installed at the plant consists of a series of sealed conveyors that move rock throughout the crushing and screening circuit. Dust collectors mounted and sealed on top of the conveyors create negative pressure in the system so the dust is captured and

filtered. The new equipment meets or exceeds the state of Texas' "Best Available Control Technology."

"This technology comes with a price – we've made a significant investment here," said Shackelford, "but we believe the long-term return on investment to the community and company is well worth the cost."

### Point of Departure

Hays Quarry was in its first phase of operation when the decision was made to go to a new form of dust-suppression technology. "We were operating a wet plant on the site," Shackelford said. "It took a year of planning and 14 months of implementation, but we got exactly what we wanted."

Shackelford approached Metso Minerals, with whom she had worked successfully on the installation of secondary crushers and screens. Metso recommended that they go with the TRANSPAR system, developed in France by R. Brunone Inc.

**"It was a perfect fit for what we're trying to achieve," Shackelford said.**

TRANSPAR can be used on conveyor-transfer materials and also at the pier of screens and crushers, according to the manufacturer. The TRANSPAR achieves the highest standards in environmental and occupational health.

According to the company:

- TRANSPAR provides workers with effective protection against dust and respirable silica, and provides environmental benefits.
- TRANSPAR can be installed on new installations or as an after-market product.
- TRANSPAR does not require extra energy to drive the sealing flap.
- TRANSPAR prevents leaks of material and dust, and therefore reduces maintenance and cleaning.

Jack Bullard of Bullard Environmental Engineering; John Riley of Vinson and Elkins; and Peter Jansen of Metso Minerals were all instrumental in the success of the project.

### Plant Operations

The TRANSPAR system has been a perfect addition to the 1,000 tph-rated plant. At the quarry, blasting is performed one or two times per week, contracted out to GeoSonics/Vibra-Tech. The quarry is located 18 miles from Austin, so every precaution is taken to make sure blasts are carefully conducted and monitored.

At the quarry face, Volvo haul trucks are loaded using a Hitachi excavator, and cycle over to an Eagle Crusher UltraMax 1600 portable crusher. Crushed material then begins its journey through the Metso secondary crushing loop, contained by the TRANSPAR system.

Caterpillar and Kawasaki loaders are used in the plant as well. The plant also employs a Metso-orchestrated motor-control center, located in a recycled shipping container.

The inclusion of the new dust-suppression system is in keeping with KBDJ's corporate commitment to sustainable operations. The company was certified by the Wildlife Habitat Council for its efforts to conserve and managed wildlife habitat on the property it leases.

Also, as part of the Texas Emissions Reduction Plan, KBDJ replaced several loaders with low-emitting equipment. KBDJ frequently hosts science and environmental education activities at the site by partnering with groups such as the Hill Country Conservancy, Texas Association of Environmental Educators, TCEQ and the Environmental Law Clinic at the University of Texas. KBDJ also holds an annual drive to collect and recycle used Christmas trees.

More than 140 fourth graders from Bridge Point Elementary School in the Eanes Independent School District recently spent a day at the quarry studying rocks, planting flowers and learning about the Edwards Aquifer at the quarry. The Texas Commission on Environmental Quality, Hill Country Conservancy and Hays County AgriLife Extension Office took part in the field trip, giving presentations on stormwater runoff,

native plants and soil, respectively.

Dr. Sigrid Clift, from the Jackson School of Geosciences at the University of Texas at Austin, also gave a presentation on the Texas Rock Cycle, an exercise demonstrating rock transformation.

"We feel it is critical to our corporate objectives and our commitment to the community to operate as a sustainable business," Shackelford said. "KBDJ is proof that industry and nature can and do exist. We are part of a new generation of quarries in this state." ♦

### About KBDJ

KBDJ is an Austin, Texas-based company mining limestone at a quarry between Buda and Dripping Springs. Currently, KBDJ is supplying hot mix, rock and wall material to the S.H. 130 toll road and to a variety of Hays County and Greater Austin area projects. KBDJ also provides road base, house pad material and environmental protection stone to the Hays County area. The company is permitted to produce 3 million tpy of material.

### Recognitions and Awards:

2010 Greater Austin Chamber of Commerce, Take on Traffic Award Winner

2010 Greater Austin Chamber of Commerce, Environmental Award Finalist

2010 Texas Environmental Excellence Awards, Finalist

2009 Greater Austin Chamber of Commerce, Environmental Award Finalist

2009 Texas Aggregates and Concrete Association, Good Neighbor Award Winner

2009 Texas Aggregates and Concrete Association, Public Appearance Award Winner