

A CUSTOMER'S SUCCESS STORY

Volvo Construction Equipment

DAM BUILDING AT A COAL MINE

“Our mining operations depend on those trucks... if the trucks can't run, the plant shuts down... and we're in trouble.” Mark Henshaw, Project Engineer, River View Coal

As coal mines go, Alliance Resource Partners' River View mine is a relatively new facility where four Volvo trucks keep pace with a high-production mine.

In 2010, its first full year of operation, the underground mine produced 5.8 million tons of clean coal. Since then, market conditions have allowed the mine to ramp up to more than a million tons of run of mine coal per month. The mine, located along the Ohio River near Evansville, Indiana, is known as the most productive continuous miner operation in the Illinois Basin.

At the mine, raw coal is conveyed to the surface and moves to a preparation plant. “From the plant we get clean coal, coarse refuse, and slurry, which is mostly water,” says Mark Henshaw, project engineer. “The coarse refuse is a waste product that consists of shale and fine clays. The refuse and slurry together are about 35 percent of the raw material feed.”

Clean coal is stockpiled and later loaded into barges for transportation on the Ohio River. The slurry is pumped to a 55-acre impoundment lake. Coarse refuse is conveyed to a 300-ton refuse bin located on a high hill next to the slurry lake.

What contains the slurry lake? A three-sided dam made of the coarse refuse. The fourth side is an old refuse pile placed there years ago.

Depending on the trucks

The coal mine is a high-production operation, and so is the dam-building project. The



An average hauling cycle takes 16 to 20 minutes.

mine produces coarse refuse at the rate of 285,000 tons per month – or 570 tons per hour. The refuse bin only holds 300 tons, so mine production relies completely on the trucks hauling refuse away from the bin.

That's why River View Coal depends on four **Volvo A40E FS** articulated dump trucks to haul coarse refuse and build the 8,000-foot-long impoundment dam around the slurry lake. “Our mining operations depend on those trucks to haul coarse refuse,” says Henshaw. “If one truck goes down, we can adjust. But if the trucks can't run, the plant shuts down, and we're in trouble.

“These trucks run 24/5 and do about 45 miles per shift,” says Henshaw. “So in three shifts, that's 135 miles per day. We've owned three of the Volvo trucks for two years. We don't calculate their availability, but it's very good.” (The fourth truck was purchased recently.)

“The plant puts out 570 tons per hour of refuse, so that means each truck hauls about 145 tons per hour,” says Henshaw. At 40 tons per load, that's about three loads per hour, or a 16-minute cycle time. Occasionally, cycles are reduced to five or ten minutes.

The Volvo trucks typically dump their loads in one place, and bulldozers spread it out in 1-foot lifts. Regulations demand that the material meet a compaction



Left, Mark Henshaw; operator Allen Garst.



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specification. Henshaw says that with 6-wheel drive, the Volvo trucks make a point of driving over virgin fill, where no other truck has tracked. That helps compaction. A roller is only needed during the rainy season, when the fill is wet.

The dam is built up in benches on the side away from the slurry lake. Each bench rises on a 2:1 slope to meet the next bench. At the top, the dam is 80-feet wide. When trucks work the top of the dam they begin by dumping in 1-foot lifts on the downstream side. They work their way upward and over to the lake side of the fill. "When we reach the point that we're 30-feet wide at the top, then we do our upstream push-out," says Henshaw. "We push the coarse material out into the slurry pond."

River View operators like the six-wheel lockup feature on the Volvo trucks. "We lock into 6-wheel drive for just about every load," says Loyd Patton, who operates one of the Volvo trucks. "If we didn't have six wheel drive, we would just bog right down in the wet material. Rigid-frame trucks would not perform here; they could not climb the grades. We couldn't do without the six-wheel lockup." Engineered ramps at the River View mine are designed at maximum 10 percent slopes.

If the mine had to use rigid-frame trucks, Henshaw says, it would take two extra operators – and their added expense – to maintain the haul roads and an additional fill area. One operator would run a motor grader, and the other would run a dozer. "This material can be slick when it's wet," says Henshaw. "Running a rigid-frame truck here would be like putting a bull on ice."

So Volvo's six-wheel lock-up feature enables River View to run during winter months, when the weather is especially rainy. "We get 42 to 48 inches of rainfall every year, and most of that falls in the winter months, from November to March," says Henshaw. "Some mines haul to a temporary refuse stockpile during the winter, but we can't do that because we don't have space for it."

An exclusive: full suspension

River View managers and operators alike



Loading a Volvo A40E FS.



Full suspension enhances production.

especially appreciate full suspension, an exclusive feature of the **Volvo A40E FS** articulated trucks. Full suspension uses electronics and nitrogen gas to help cushion the ride and level the load. "Full suspension makes our operators much more productive," says Henshaw.

"The trucks ride very smoothly," Henshaw says. "Full suspension doesn't necessarily affect fuel economy, but with full suspension an operator is going to move more material per gallon of fuel, because he can be more productive. I would estimate that full suspension gives us a gain of 10 to 15 percent in production vs. trucks that don't have that feature."

Adds operator Patton: "I really like the full suspension feature. The ride is really

smooth. You don't have to slow down and you don't have to beat yourself up to get from point A to point B.

"The cab is very roomy on the Volvo truck," says Patton. "It has good visibility and good sound control. It's a quiet ride. The controls are well located, easy to use. It's a very operator-friendly truck."

Running a small business

Patton also likes the ease of inspections on the Volvo articulated trucks. "We require pre-operation inspections," he says. "The on-shift operator sits in the cab, while the guy coming on checks lights, checks for leaks on the ground, checks the condition of the tires and looks at the oil readouts. The hydraulic oil and the brake fluid levels are at eye level from the ground. And we check the engine oil, but you need to open the hood for that"

Henshaw approves of the rear mounted camera that shows an operator the rear area of his truck. "Novice operators can see the rear area of the truck better and they get better load placement," he says.

The River View mine has a contractor working with earth-moving equipment to build a trench around the foot of the dam to help form a foundation for the structure. On occasion the contractor – who normally uses a competitor's truck – will send the mine an operator to fill in for an absentee. "Then they don't want to go back to using the non-Volvo," says Henshaw. "Similarly, we borrow one of the contractor's trucks from time to time and one of our operators has to run the competing model. Then our operator really sees the difference in the ride. It is not unusual for one of our Volvos to pass a competitor's truck.

"We tell our operators that they're each running a small business," says Henshaw. "The full suspension makes it a very comfortable machine to operate, but we tell them not to drive too fast, and do not overload your truck. Take care of that truck like it is your own." Alliance Resource Partners are sold and serviced by Rudd Equipment, VCE's dealer group based in Evansville, Indiana.

