

# AN UNCONVENTIONAL APPROACH WORKS

## CSX TRANSFLO DIVISION'S NEW DESIGN APPROACH

“Our job is to help our rail shipping customers get their products transloaded quickly and efficiently,” states Matthew Sapp, TRANSFLO Director Asset Management. “Last year, we opened a terminal in Fairmont, West Virginia, specifically for moving rail carloads of frac sand to the Marcellus Shale fields. There it is used to kick-start the oil or gas at the well through hydraulic fracturing, helping make America’s energy renaissance come to pass.”

To make the terminal work as efficiently and economically as possible, Sapp recommended a flat storage facility situated beside an existing CSX Transportation rail yard in downtown Fairmont. “In lieu of the typical vertical silos, we went with a 25,000 square-foot steel warehouse with concrete bunkers inside to support the sand and two portable conveyors serviced by one dedicated wheel loader.

This approach made the most of the location, was faster to construct, and was lower in overall cost.”



Travis Davis, Terminal Manager, Arrow Material Services, the company actually operating the terminal for CSX TRANSFLO, shaking hands with Bert Smith, Anderson Equipment, their Kawasaki dealer.

### SIMPLE APPROACH, GREAT RESULTS

Sapp continues, “We knew how much sand the bulk trailers could hold, so the surge hopper and wheel loader were sized to make that loading as quickly as possible. For that, it takes two surge hopper loads conveyed into the top of the bulk trailer. The Kawasaki 80Z7’s 4.2 cubic-yard bucket fills the surge hopper in two passes. To ensure bulk trailers are not overloaded, a LOADRITE weighing system on the wheel loader bucket weighs the sand going into the surge hopper. To unload the railcars, the same conveyor used to load the trucks moves into position by its own power and receives the sand from the car’s bottom dump hopper. The conveyor then dumps into one of the surge hoppers, which in turn dumps into the wheel loader’s 4.2 cubic-yard bucket.”

There are two grades of sand stored at the terminal, both extremely fine.



## MORE ABOUT THE TINK ROLL-OUT BUCKET

The roll-out bucket used by TRANSFLO allows increased dump height. It has been customized to exactly fit the top edge of the surge hopper so that it can safely pick the hopper up and move it as needed. The forward roll of the bucket allows for steady, smooth dumping of the sand into the hopper.



**Matthew Sapp, Director  
Asset Management**

The loader then carries the load to a second conveyor, which piles the sand to the facility's peak height.

"It takes about an hour and a half to unload a 286,000-pound rail hopper car,"

says Travis Davis, Terminal Manager. "Our goal is to get each car unloaded within two days of arrival on a first-in, first-unloaded basis, so that it can return to origin as quickly as the system can accommodate to keep our customers' rail fleet moving."

### WHY KAWASAKI?

"I looked at Kawasaki and another brand," explains Sapp. "Both have great reputations

**The Kawasaki 80Z7 loads a surge hopper inside the terminal. The sand is then conveyed into bulk semi-trailers.**

for industrial applications, and both have good dealer support given the terminal's location.

***"But what I really liked about the Kawasaki was their Tier 4 engine and the resulting reduced exhaust emission for operating in the warehouse.*** I personally operated both brands at the terminal and was impressed with how much visibility there was inside the Kawasaki 80Z7 with the rear-view camera system — crucial features given the tight nature of the warehouse operations. Another great feature was the preset controls for one-touch loading up and down, and — although the Kawasaki is a large machine — believe it or not, it's pretty compact given its capacity. Again, working backwards to make the bulk trailer loading as simple as possible, a bucket that was 4



**A LOADRITE on-board weighing system tracks the sand shipped out.**

cubic yards was the size that fit, which led us to the 80-sized loader. The machine also has great breakout force for quick cycling to keep the process running smoothly."

Adds Davis, "Another critical requirement the Kawasaki loader successfully met is sufficient cab pressurization to minimize dust inside the operating cab. The optional engine air-filtration package provided by Kawasaki,



# More about Hydraulic Fracturing

- Fracturing technology has been involved in over 1.2 million wells since 1947 in the U.S.
- Hydraulic fracturing is technology for enhancing the flow of energy from a well after the drilling is done. Over the past 60 years, this technology has been used for not only enhancing the flow of oil and gas, but also the flow of water from water wells and to bring geothermal wells into commercial viability.
- After the well is drilled and the casing and cement are installed, the drilling crew is replaced by a fracturing crew who develop a water-based solution that is 99.5% water and fracking sand, plus 0.5% additives which typically include inhibitors to reduce bacteria growth in the well bore and emulsifiers similar to the same additive used in ice cream.
- The solution is injected down to the oil- or gas-bearing shale zones and pressured into small fissures to develop cracks that allow the release of trapped fluid or gas.



The operation is based on two scoops to load the surge hopper, two full hoppers full fill the semi-trailer.

including the Turbo brand pre-cleaner, has done a good job of protecting the vital parts of the engine.”

Another important factor figuring into the TRANSFLO wheel loader decision was the dealer-provided maintenance program offered by the local Kawasaki dealer, Anderson Equipment. “We want the team at the terminal focused on moving the product,” notes Sapp. “That’s where we make our money. The more railcars and trucks we can safely turn through the terminal, the better it is for us. It just makes sense to let the experts maintain our equipment for peak efficiency.”



Multiple trucking companies haul direct from the terminal to the wellhead where the hydraulic fracturing takes place.

The terminal is available 24/7 — a reflection of the round-the clock demands of the typical drilling and well completion work. Downtime on the wheel loader due to mechanical failure is not an option. “Our customers have already paid for the frac sand to be delivered to the terminal, and there are critical timing issues for when the sand is needed at the wellhead,” says Davis. “Therefore, it’s critical that we’re open for business whenever we’re needed, including having equipment working at its peak capacity.”

***TRANSFLO is serviced by Anderson Equipment, Pleasant Valley, West Virginia.***



## ABOUT TRANSFLO

TRANSFLO is a subsidiary of CSX Corporation and has 56 terminals throughout the Eastern United States and Canada for the temporary storing and loading of bulk materials shipped by rail onto bulk semi-trailers.