



All Grown Up

Aug 1, 2007 12:00 PM
By Adam Madison



Allen Miller

Allen Miller started his career at McHenry Sand and Gravel when he was 12 years old. Operating a half-yard shovel, he fed a small Junior Commander crusher, a portable unit with a jaw and roll crusher. Miller called it a good year if they produced 50,000 tons. That was a long time ago, and things have grown.

Today this operation is more formally known as Yard #26 of [Meyer Material Co.](#), which bought the operation in 1988. But for the last year, it's been sheltered under the Holcim umbrella, Aggregate Industries. Yard #26 is one of six Meyer Material operations managed by the 61-year-old Miller. And for more than a decade his operation in McHenry, Ill., has produced close to 2 million tpy. The company also continues to look for other opportunities in its northern Illinois and southern Wisconsin market. Miller says the city of McHenry's population has grown to 25,000, compared to the 1,900 that were there when the company first broke ground in 1954.

Miller says crushers haven't changed much over the years, but they have grown bigger, stronger and faster. The only thing shrinking is the company's reserves, which should be depleted in 13 years. Until that end, Meyer Material will continue extracting its top-quality aggregate beneath 9 to 25 feet of silt overburden. The company is stopping at the water table, but will return with backhoes to retrieve the remaining sand.



Cat 992 wheel loader with a

On average, stripping 10 acres is a two-month process that requires using four backhoes and eight 35-ton Volvo haul trucks. The stripping crew and equipment handle all six locations. And 10 acres yields about six months of production.

The overburden is reused for reclamation purposes. Reclaimed property has been leased for corn farming, and more than half of the 750 acres are zoned residential.

13-cubic-yard bucket dumps material into a feed hopper with a 10-inch scalping screen.

The virgin material is extracted by two Cat 992 wheel loaders with 13-cubic-yard buckets. They dump into a variable-speed feed hopper, which holds two full scoops and empties in 60 seconds, Miller says. A grizzly scalps off all material larger than 10 inches, which is then sold for landscaping cobbles. Crushing cannot be performed in the field due to proximity to residential homes, so the remaining material is conveyed to the plant.

Miller estimates that 3.5 miles of conveyor extend throughout the plant. All field conveyors are 48 inches wide and are driven by 4,160-voltage motors. The rest of the conveyors run on 440- or 480-voltage motors. Some are purchased conveyors, and some were built in-house. Rollers generally last four to five years, Miller says.



The 3-inch-minus material from the primary jaw crushers collects in separate surge piles.

The first 600-foot dog-leg conveyor is under the hopper. It transfers material to the 2,200-foot mainline that feeds the surge pile for two primary jaw crushers, a 2148 Pioneer and a 2248 Cedarapids. Each produces an average of 650 tph, but both can be pushed to produce a total of 1,500 tph, Miller says.

The 1-inch minus goes straight through the primaries and directly to the washplant. One- to 3-inch material bypasses the crusher. Everything bigger is crushed to 3 inches and conveyed to another two surge piles for secondary crushing.

There are three secondary crushers, two triple-roll crushers and a Metso Minerals cone crusher for asphalt chips. One roll crusher makes 38-inch asphalt chips or binding chips. The other roll crusher makes a grade-nine road base.

Each crusher is coupled with triple-deck shaker screens. The cone and the first roll crusher have 8- × 20-foot triple-deck screens. The roll crusher making road base has a 5- × 16-foot triple-deck screen, but only one deck is employed.



These

The washplant is fed from a third surge pile. It consists of two 8- × 20-foot triple-deck wash screens that separate concrete stone and pea gravel from the sand. The pea gravel goes through a 6- × 16-foot triple-deck screen, making three sizes. The concrete stone goes over four logwashers and finally across two 5- × 16-foot rinse screens. A small dewatering screw separates excess material from the log-washer rinse water.

8- x 20-foot, triple-deck Tyler finishing screens at Meyer Material Co. screen 3-inch minus for a secondary crushing.

Five Eagle Iron Works dewatering screws are housed at the top of the plant. One is 54 inches and four are 44 inches. Miller says they are kept indoors to retain heat and extend production into the early winter. These produce concrete and mason sand.

Dirty water is pumped to the settling pond through a 12-inch rubber-lined pump. Before the water settles and reaches the fresh-water pond, it is treated with a chemical flocculant. This causes the clay particles to bind together and sink faster, but adds a penny to the ton, Miller says. Freshwater is pumped back through the plant through two 12- × 12-inch freshwater pumps. The feed rate is 6,000 gpm. “You can't have too much water,” Miller says.

Material is stockpiled throughout the operation by fixed stackers. The operation relies on two Komatsu WA500 wheel loaders to load throughout. However, the McHenry site also uses two 36-inch self-loading conveyors at separate locations. Drivers simply plug in the desired tonnage at a control panel and a belt scale helps load them within 100 pounds of their target weight, Miller says. Below the stockpiles are 200 feet of tunnel with the conveyor and different gates. Miller estimates that there is room for 30,000 tons of bulk storage above each.

Drivers still must weigh at the 10- × 60-foot loadout scale. Two men operate the scale house; one taking orders and one weighing trucks. The man operating the scale sends the ticket to the driver through a pneumatic tube. The material crosses the gate, destined to be consumed by a growing McHenry.



Recycled asphalt is stockpiled and sold to an on-site customer.

Re-Rapping Asphalt

Just because material crosses the scale, doesn't mean that Meyer Material Co. is done with it. Some product might even be sold a second time as recycled material. Recently, a repaving of Route 120 brought in loads of millings that Meyer Material recrushed and sold to an on-site asphalt producer. The McHenry site also reuses leftover concrete from an on-site batch plant.

The recycle plant is fed by a Komatsu 500 wheel loader. Then a Pioneer chain feeder carries material to a Pioneer 3654 jaw crusher. An Inertia 4048 impactor provides a secondary crushing. A 5- × 16-foot double-deck screen separates two products.

— Adam Madison

