

Doing Some Baking in Phoenix

Super-temps in desert operation force processing equipment to show its mettle.

For the most part, being an asphalt and concrete recycler in the Phoenix area is as good as it gets. Warm temperatures, low humidity and an economy that seems impervious to downturn are all elements for success. When those temperatures exceed 110° for extended periods of time, however — as they regularly do in the summer months — key processing equipment such as crushers and screens can be stopped (ironically speaking) cold. For Mark's Valley Grading & Excavating, a combination of wise equipment purchases and a comprehensive maintenance effort has helped make certain that doesn't happen. The success of those efforts was proven out this past summer when the firm operated without downtime during a 48-day span of 110+° days.

What's in a Name

Established some 22 years ago, Mark's Valley Grading & Excavation provides a broad range of services in and around the Phoenix area. In fact, according to site foreman Steve Rhodes, the company's name really belies its capabilities.

“We do grading and excavation, but we also do a good deal of residential and commercial demolition, removal of pads from housing and large buildings, and more. That type of work obviously produces a sizable volume of recovered concrete and asphalt, which prompted our owner, Mark Haight, to establish a site at which we could stockpile and process material from our own projects.”

That was about three years ago but Rhodes says the effort has been so successful that today it is a full-fledged material recovery facility called 'Contractor's Landfill' where material is taken in from area contractors and made into usable product.

But It's a Dry Heat

Under most circumstances, the recycling site operated by Mark's Valley is similar to those found elsewhere. The firm takes in concrete debris and asphalt from throughout the area, does a bit of pre-processing when necessary, and feeds it to a CEC impact crusher/screen plant to create product.

“The overwhelming majority of what we make is base material for use in road work, general construction, pad work and so on,” says Rhodes. “The CEC is set up with 1 1/4-inch screens for creating the AB material. Then all the fines — we generally use dirt — are added to meet the desired Maricopa Association of Governments (MAG) spec. The processing itself is fairly typical of what you might find anywhere else in the country. What sets us apart are the conditions in which we sometimes have to keep running, and that's where the reliability of the equipment comes in.”

Rhodes cites a period this past summer in which temperatures got as high as 122° during the day and on many occasions barely dropped below 100° at night. Severe even by Phoenix standards, the conditions lasted for better than a month and a half.

“It was an unbelievable stretch,” he says. “It's hard to believe that equipment can even run in that kind of heat, let alone do something as tough as crushing and screening rock, but our system never let us down. The units are equipped with high-volume radiators which kept things under control, but we still had to constantly check the onboard indicators to monitor water, oil, and hydraulic fluid temps. However, in a situation like that, the biggest thing we can do to beat the heat is get as much processing done in the early morning hours as we can. So it's not unusual for us to start getting things going at 4:00 a.m. and have almost a full day's processing in by the time most people are breaking for lunch. But during those unbelievably tough stretches, there's no denying the heartiness of the equipment is what really gets us through.”

Inside the Iron

The primary system in place at Contractor's Landfill features a CEC Model 133 x152 Impact Crusher (Construction Equipment Corporation, Tualatin, OR) feeding a 6 X 16 Screen-It[®] dual deck screen plant, also from CEC.

"On average, we regularly crush 300 tons of concrete an hour through the CEC plant," says Rhodes. Rates for Ground Screened Asphalt (GSA), because it is a softer material, will be a bit higher, pushing the 350-400 tph range. So with average conditions, we can easily do 2,000-2,500 tons of material a day."

In addition to the main crushing/screening spread, Mark's has a CEC Track Screen-it plant with twin 5 X 12 screens through which they make several different products; everything ranging from track out rock, to 3" - 6" rip rap, to topsoil blends. They also recently added another crusher that they are using to crush river rock prior to sending it to the impact crusher to make their AB.

"The crushers and screens are our bread and butter equipment," says Rhodes. "Other than the support vehicles such as loaders and trucks, the only other specialized equipment we have is a pair of excavators with concrete pulverizer attachments on them which we use to crush large concrete debris and free up any rebar that might be contained within, before passing it along for crushing. Ultimately, it's all about getting it small and sized right."

Keeping Costs Down

In severe conditions like those experienced this past summer, efforts made in the design of the crushing and screening equipment to minimize maintenance-related downtime really pay off. According to Howard Glemming, CEC's area sales representative, those efforts can start with something as basic as designing the crusher's blow bars for easy top-load replacement, and go from there.

"While we maintain a nice inventory of replacement parts, CEC has also worked hard to standardize replacement parts for the customer's convenience," he says. "Hoses and

connectors, for example, can be purchased at any major auto parts supplier in town. So now, if a hose breaks, the customer can simply call the store, tell them the length of the hose and the size of fitting, and be back up in no time. Also, CEC has done an excellent job of reducing screen cloth costs, again through the design of the Screen-It unit itself. The angle of the screen deck is relatively steep, reducing the likelihood that material will bounce very high off the deck surface and cause excessive wear. These, and other features have kept costs — and production interruptions — down.”

There When you Need Them

Over the years, both Mark’s Valley, the company and Contractor’s Landfill, the location, have grown steadily in size. Today, Mark’s works throughout a 75-mile radius and employs better than 120 people company-wide. And the Landfill site has become a major player in supplying base material to area contractors.

“People in this area — from Paradise Valley to Queen Creek to Casa Grande to Florence — know that we will provide a good, consistent product and are equally confident that, regardless of how hot it gets, we will have product for them. That speaks volumes both for the people we have at work for us and the equipment that performs day in and day out.”