

On-Site Slurry Engineering a Cost-Effective Solution



Photo by Tim Davis, Courtesy of Flatiron

On August 1, 2007 the eight-lane I-35W Bridge over the Mississippi River had collapsed. Within a few days following, the Minnesota Department of Transportation (MN/DOT) announced that Flatiron Constructors and Manson Construction Company would build the replacement bridge. The Foundation Piers were drilled by a joint venture partnership between Case Foundation and Anderson Drilling. CETCO supported the construction of the drilled shaft foundations for the new bridge with on-site slurry engineering.

PROJECT DETAILS

I-35W Bridge

LOCATION

Minneapolis, Minnesota

PRODUCTS USED

SHORE PAC®

Drilling Slurry and Additives

Slurry Engineering

Services

CHALLENGE:

Drilling in extremely cold temperatures with polluted soils.

The I-35W Bridge is a vital traffic artery to the city, so rebuild was to be completed at an accelerated rate. CETCO on-site slurry engineering services were instrumental in helping the contractors finish the project in a timely fashion.

SOLUTION:

With the extreme cold weather, it was beneficial that CETCO be on-site to take any necessary precautions in preventing the slurry from freezing. RV-Anti-freeze (propylene glycol) had been used for the slurry, fittings and valves. The eight 20,000-gallon steel slurry tanks were lined up next to each other and a structure was built around them to help endure the cool temperatures. The structure was then completely wrapped and sealed. Propane heaters were used inside the slurry houses for heat.

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Polluted soils at the site were yet another concern. The soil at the south side of the new bridge was impacted by a coal-to-gas processing plant and a facility for storing and processing petroleum products. Because contaminants can reduce the effectiveness of drilling fluid, CETCO slurry engineers made the decision to increase the viscosity of the SHORE PAC polymer slurry to minimize breakdown. The SHORE PAC polymer slurry performed exceptionally.

RESULT:

Main bridge foundations were completed on February 2, 2008 and the I-35W Bridge was opened to the public on September 18, 2008, which was 3-months ahead of schedule.



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