

Francis E. Walter Dam and Reservoir Remediation

White Haven, Pennsylvania

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The project

The Francis E. Walter Dam is a 234 foot high, rolled earth-filled embankment dam, with a length of 3,000 feet. Its primary purpose is flood damage reduction along the Bear Creek / Lehigh River subbasin. The USACE Philadelphia District awarded Keller a contract to install a two-line, 700-foot long grout curtain to reduce seepage below the existing dam's right abutment.

The challenge

Geologic conditions included an overburden that was eight to thirty feet thick, with boulders in a matrix of silty sandy gravel. The bedrock profile consisted primarily of sandstone/siltstone, with some shale and a well-developed joint system. The Owner's schedule required that the drilling and grouting work proceed uninterrupted through the winter season.

The solution

Keller self-performed all of the drilling work, which required resonant sonic drilling through the overburden to depths up to 240 feet through the core of the dam and drilling of the underlying bedrock. Some of the holes were advanced through the overburden using a double-cased telescopic sonic drilling method. The rock drilling was performed with water actuated down-the-hole (WADTH) hammers to depths up to 278 feet. The interface grouting was accomplished using Multiple Packer Sleeve Port (MPSP) Pipes. Keller's computerized grouting system was utilized to monitor and record the water pressure testing and grouting operations in real-time.

Project facts

Owner(s)

US Army Corps of Engineers, Philadelphia District

Keller business unit(s)

Keller

Main contractor(s)

N/A

Engineer(s)

US Army Corps of Engineers, Philadelphia District

Solutions

Groundwater control

Markets

Infrastructure
Dams and levees

Techniques

Permeation (chemical) grouting
High mobility (cement slurry) grouting

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