



Drilling in White Haven

PROJECT PROFILE DRILLING

CLIENT
US Army Corps of Engineers,
Philadelphia District

EXPLORATORY DRILLING

White Haven, PA

SITUATION:

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 Layne a contract to install a two-line, 700 foot long grout curtain to reduce seepage below the existing dam's right abutment. Geologic conditions included 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 of 2009-2010.

SOLUTION:

Layne's scope of work included drilling over 25,000 feet of overburden and rock and placing over 4,973 cubic yards of stable, balanced high mobility grouts.

Layne 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 through 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.

Layne's GeoGrout computerized grouting system was utilized to monitor and record the water pressure testing and grouting operations in real time.

SERVICES EMPLOYED:

- + Real Time Monitoring
- + High Mobility Grouting
- + Resonant Sonic Drilling
- + Rock Drilling
- + Borehole Geophysical Logging
- + Specialty Drilling

