Huckleberry Creek Reservoir

Dover, Arkansas

Keller developed a grouting solution that was presented to the owner within seven days of the initial site visit and successfully mitigated the leak in the dam through an emergency contract.

The project

Huckleberry Creek Reservoir, completed in 1996, holds over 5.8 billion gallons of water when full and is the sole source of drinking water for the area. A 2,000-gallon-per-minute leak developed at the toe of the dam near a concrete encasement that traverses the dam embankment and contains dual water supply pipes.

The challenge

When the leakage was observed, exploratory borings were conducted that determined piping and soil erosion occurred due to water washing out material around the encased water lines. As the piping continued, the leak became more evident. A soft zone of uncompacted material within the clay core was also encountered, requiring restoration.

The solution

Prompt remedial action was required to maintain the integrity of the dam. Keller was on site within two days of the initial call from the owner and developed a two-phase grouting program to arrest the flow over the next several days. Grout holes were drilled at several locations around the encased water pipes to intercept the voids, which were filled with low mobility grout. The low mobility grouting program was followed by high mobility grouting to fill any remaining voids and prevent future piping. The remedial program successfully mitigated the leak within 10 days of initiating grouting and the seepage was returned to historic flows.

Project facts

Owner(s)
The City Corporation Board of Directors

Keller business unit(s)
Keller

Main contractor(s)
Keller

Engineer(s)
Grubbs, Hoskyn, Barton & Wyatt, Inc.
Garver

Solutions
Ground improvement
Groundwater control and dewatering

Markets
Infrastructure
Dams and levees

Techniques
High mobility (cement slurry) grouting
Low mobility (compaction) grouting

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