

Barren River Cofferdam
City of Bowling Green, Kentucky

A new intake structure being built required a cofferdam to be constructed out into the Barren River. Once completed, the cofferdam would be dewatered and excavated down to proper grade elevation. Early into the excavation, water started leaking through rock fractures along the hillside and through fractures and mud seams in the bottom of the cell.

Several dewatering pumps were brought in to try and control the water infiltration with little success. Leaks continued to increase in volume as the mud was eroded from the mud seams, eventually overwhelming the dewatering pumps and shutting down the project. Estimates of water infiltration exceeded 15,000 gallons per minute. Support Restoration Technologies was called in to evaluate the problem and design a system to seal off the water infiltration so the project could continue.

A series of holes were drilled along the shoreline on the upstream and downstream side of the cofferdam to intersect the rock fractures. Inflatable injection ports were installed inside each drilled hole and secured. A mixture was injected through the inflatable injection ports and into the fractures. Reaction times were adjusted to allow optimum travel through the fractures before curing.

Injections completed over a one-week timeframe to seal off the water infiltration and allowed the project to continue.

General Contractor: Building Crafts, Inc.

For more information on this project, please contact Randall Brooks at 513-353-2544.