

CANTON DAM Canton, OK



- **Owner:**
U.S. Army Corps of Engineers, Tulsa District
- **Technique(s) Utilized:**
Rock Anchors

Canton Dam, located on the North Canadian River in Blaine County, Oklahoma, is underlain by intermediate, soft rocks of the Dog Creek Shale Formation. These rocks are known for their low frictional shear strengths and potential compressibility due to their clay-like behavior and past leaching of salt beds.

To address the low shear strengths and potential sliding, Nicholson stabilized the 800-foot long concrete spillway with 64 high-capacity, post-tensioned rock anchors. The anchors range in length from 175 to 230 feet and have capacities ranging from 1,500 to 2,200 kips. The largest anchors on the project have 58 strands.

This additional normal force significantly increased the contact stresses at the base of the concrete spillway, risking differential movement of the individual monolith sections. An instrumentation program was executed that monitored the structure before and during stressing of the anchors with remote, real-time systems located at the nearby project office.

The project was completed on schedule and received the Tulsa District Eagle Eye Safety Award.