

# Gilboa Dam Interim Stability Improvements

**Location:** Gilboa Dam, Gilboa, New York

**Submitted by:** Ken Purinton, Dywidag Systems International

**Owner:** City of New York, Department of Environmental Protections

**Engineer(s):** Gannett Fleming/Hazen & Sawyer

**Contractor:** Nicholson Construction Company

**P/T Supplier:** Dywidag Systems International



## Overview:

When the Gilboa Dam, one of several in the Hudson River Valley that supplies water to New York City, was discovered to be out-of-date with current safety standards, immediate action was required to stabilize the dam and bring it up to code. A debris barrier was erected to provide a clean surface for the work and relieve the dam of debris weight, while the capacity of the outlet tunnel was increased and four siphons were put in place to handle additional water volume. After these preparatory measures had been taken, double-corrosion-protected, multi-strand post-tensioning anchors were installed to help stabilize the dam. Forty-seven anchors were installed vertically across the entire length and height of the dam, and 32 additional anchors (with inclines ranging from 45 to 48 degrees) were placed in the individual layers of the dam wall on the downstream side. Each 13.8-inch-diameter anchor was carefully inserted, grouted and post-tensioned into a borehole. A specially designed 1,686-ton jack was used to prestress the anchors, resulting in a fast-track solution to a short-notice situation.