

Lake Whetstone Dam Toe Drain Repair

Montgomery Co., MD

Toe drain repair at the embankment dam at Lake Whetstone in Montgomery County, Maryland.

Completion Date: January 2022

The work completed for the Montgomery County Department of Environmental Protection included the construction of a new toe drain. The 34-foot-high earth embankment dam at Lake Whetstone was constructed in 1966. It was originally constructed with a principal spillway conduit consisting of a dual box culvert. Aging and operational concerns necessitated a new toe drain replacement system construction.

The toe drain replacement project included the abandonment of the existing seepage collection drains by filling them with chemical grout as well as construction of new toe drain pipes in dual-aggregated filtered drains. Additionally, a filter diaphragm was constructed around the downstream end of the principal spillway box culvert and a blanket drain was construction on portions of the downstream slope.

New toe drain pipes were constructed in trench excavations. The new south toe drain pipe was then constructed 22” above the reported elevation of the existing 24” sewer pipe.

The entirety of the construction occurred within the footprint of the downstream slope of the dam embankment. Minor concrete repairs at the downstream headwall and within the spillway box culvert were also performed.

