

# Round Valley Reservoir- New Jersey Water Supply Authority- Instrumentation and Monitoring

Clinton Township, NJ

## Project Highlights

- Geotechnical instrumentation installation and monitoring
- Largest drinking water supply in New Jersey
- Largest and most comprehensive dam instrumentation monitoring program in New Jersey



*Installation of piezometers and abandoning existing instruments at the North Dam*



*Installation of telemetry datalogger unit at Dike*

The Round Valley Reservoir, with a capacity of 55 billion gallons, is the largest drinking water supply in the State of New Jersey. Constructed in the 1960s, it is retained by three earthen structures classified as High Hazard – Large Dams.

**Challenge:** The Round Valley Reservoir Structures Refurbishment and Resource Preservation Project is making major improvements to extend the operating life of the reservoir. The project includes improved drainage systems on the dams, abutment grouting, instrumentation upgrades and a number of other structural and mechanical improvements. GZA is supporting the prime contractor, as the subcontractor for the installation of the Dam Instrumentation and Monitoring System (DIMS). To our knowledge, this is the largest and most complete dam instrumentation monitoring program in New Jersey and our local New Jersey staff is conducting this work.

**Solution:** GZA’s scope of work includes installation and modification of over 60 piezometers and 12 inclinometers, automating existing and newly constructed piezometers by installing up to 130 vibrating wire piezometer (VWP) transducers, abandoning/grouting over 90 existing piezometers, installing weir monitors and setting up an automated data acquisition system (ADAS) to monitor the dam during and after rehabilitation.

**Benefit:** In addition to GZA’s strengths in dam engineering and instrumentation, GZA was able to draw from a large, qualified engineering staff to oversee the extensive field operations, coordinating closely with the project team (Owner, Owner’s Engineer and Contractor), and our subcontractors (which included multiple drillers working concurrently) to accommodate an aggressive 24/7 excavation schedule on this project of unprecedented scale.



*VWPs grouted and buried in newly constructed sand drain. Cabling run back to a central datalogger location*