

Echo Reservoir Spillway

Summit County, Utah

Project Profile (2013)



Project Summary

Echo Dam is a 158-foot high earthfill structure on the Weber River. It was constructed between 1927 and 1931 as part of the Weber River Project to help supply supplemental irrigation water to approximately 109,000 acres of land west of the Wasatch Mountains.

This project was part of the US Bureau of Reclamation's Safety of Dams Program. Upon inspection and analysis, the owner was concerned that the soil on the crest of the spillway could liquefy during a seismic event and cause deformation of the aged spillway structure. Therefore, modifications to the foundation as well as reconstruction of the spillway chute were required.

The concrete mix design presented challenges due to the very low slump required (1") and the long transport distance from the ready-mix plant (45 minutes). Project timeline was also critical for this project since the spillway is critical for irrigation. Based on the field trials at the Glen Elder Dam in Kansas, the USBR felt confident in PREVent-C®'s ability to drastically reduce shrinkage cracks. In order to complete the project in one construction season instead of two seasons, the USBR decided to utilize PREVent-C®. Depending on project specifics, the use of PREVent-C® can allow an increase in joint spacing, since the potential for concrete shrinkage cracks is greatly reduced.

Owner: United States Bureau of Reclamation

Engineer: United States Bureau of Reclamation

Concrete Contractor: Gerber Construction

General Contractor: Gerber Construction

Ready-Mix Producer: Geneva Rock

Products: PREVent-C® 500 Shrinkage-Reducing/Compensating Admixture