



PROJECT DESCRIPTION SHEET



GEOTECHNICAL AND WATER RESOURCES ENGINEERING



KEY ENGINEERING ELEMENTS:

- Underwater construction
- Hydraulic construction drawings
- Construction specifications

CLIENT BENEFITS:

- Upgrade of an existing facility
- Completion of design and construction without loss of water storage or use of recreational facility
- Bid package to suit optional items Owner may construct



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PALMER DAM #5, EL PASO COUNTY, CO GLEN EYRIE GROUP

Palmer Dam #5 is a zoned earth/rockfill dam that was constructed in 1906. Over the past 100 years, the dam has performed well and minimal work on the embankment and ancillary facilities has occurred. The dam is 35 feet high and located at Elevation 8980. The reservoir creates a prized recreational amenity for a summer youth camp and is generally operated within a few feet of spillway crest.

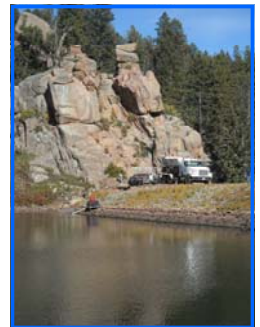
RJH Consultants, Inc. (RJH) prepared a design to:

- Remove and replace the two original valves in the masonry gate tower.
- Slip-line the upstream and downstream outlet conduits.
- Install a trashrack on the upstream end of the outlet conduit.
- Construct a stilling basin at the downstream end of the outlet conduit.



RJH is the Engineer of Record with the Colorado Office of the State Engineer (SEO) and designed the facilities to address SEO safety concerns.

The reservoir was not lowered during design or construction. RJH evaluated design and construction alternatives for completing the rehabilitation work with full pool using divers and underwater construction techniques.



To reduce overall construction costs, RJH developed the design and construction documents so that some of the above-water work, such as the stilling basin, could be constructed by Owner staff. RJH also assisted the Glen Eyrie Group with bid and construction administration and management.

SEO approval was obtained in 2008. Construction occurred during the fall of 2008 so as to not interfere with activities at the youth camp. The project was completed on time and on budget, with savings from design resulting in approximately 40 percent cost savings from planning-level estimates.