TETON CREEK RESERVOIR, TETON COUNTY

Location:- NW 1/4 Sec. 24, T. 44 N., R. 118 W.

Date Examined:- September 10, 1956.

Storage:- 3,506 acre-feet of water will be impounded by a dam 61 feet high.

Geology

Several sites, within close proximity of one another, have been considered for reservoir storage in this area. Only the upper site, however, is considered in this report.

The rocks cropping out on both sides of the canyon are the Darby and Madison formations of Devonian and Mississippian ages, respectively. These formations strike N. 5° E., and dip 3° W. Since the area has been moderately glaciated, the damsite foundation and the reservoir will be concerned only withthe alluvial deposits. The south abutment of the dam will adjoin part of an old terminal moraine, while the north abutment is an alluvial covered slope. The thickness of the glacial deposits in the canyon, however, can only be determined by drilling.

The lower site, which was to have a capacity of 5,563 acre-feet of water, was studied by the U. S. Bureau of Reclamation, but to the writer's knowledge, no geological report was written on the area. However, data in their files show a hole was drilled about 5,000 feet west of the upper site and adjacent to Teton Creek. The section penetrated by this hole and logged by the U. S. Bureau of Reclamation is as follows:

Depth	Lithology
0 - 14 ft.	Cobbles and fine sand.
14 - 16	Well packed sand.
16 - 78	Sand and gravel.
78 - 82	Hardpan.
82 - 88	Clay, sand and gravel.
88 - 113	Fine sand.
113 - 117	Hardpan.
117 - 121	Sand and gravel.

From the above data (1956), the Bureau concluded that the whole bottom of the reservoir would have to be sealed, except where the silt was fairly deep, to prevent excessive seepage.

Conclusion

In spite of the Bureau of Reclamation's hesitancy to construct a reservoir at the lower site, the writer believes that the upper site should be satisfactory even though some seepage is to be expected. These conclusions are supported by the following:

(1) The upper site has approximately one-third less storage, and assuming less depth, the seepage developed by overlying water pressure should be less.

(2) Many small to medium sized glacial lakes in mountain areas are adequately dammed by moraines without serious seepage losses, therefore it would seem that this analogy can be applied to the upper site on Teton Creek which is in a similar geological situation.

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February 20, 1957

Reference

U. S. Bureau of Reclamation Office Memo, March 23, 1956.