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PRELIMINARY REPORT ON HANSARD LAKE  
EAGLET LAKE DAMSITES

By W. C. Jones  
B. C. Department of Mines  
October 1, 1959

*Preliminary  
Report*

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Introduction

The following preliminary report was prepared at the request of Mr. G. E. Simmons, Chairman, Drilling Sub-Committee, Fraser River Board. Its purpose is to roughly outline the nature and distribution of soils in the proposed damsite areas as they will affect the forthcoming drilling programme. A geological interpretation of the area will be submitted after preliminary fieldwork on the project has been completed.

The writer spent 4 days in a field reconnaissance of the area in mid September 1959. Road and railway cuts were examined and some information on the few existing water wells was obtained from local residents. Several short hand-auger holes were drilled in the immediate vicinity of the proposed damsites. The locations of the water wells, auger holes, and soil and bedrock exposures are marked on the accompanying topographic plan.

Damsite "A" (west end of Aleza Lake)

Damsite "A" centreline is shown on the accompanying plan. It traverses the Hansard Lake-Eaglet Lake depression which lies between gently rolling uplands of the Nechako Plateau to the north and south. The maximum relief in the immediate area is approximately 200 feet. Damsite "A" consists of low, lightly wooded hills and brush-covered swamps. Water in the swamps was up to about 2 feet in depth at the time of the writer's visit.

Brown, plastic, silty clay is exposed in road cuts and was encountered in the three auger holes drilled at the site (see accompanying plan). No water wells were found in the immediate vicinity of the site. The nearest exposure of bedrock occurs about  $\frac{3}{4}$  mile south of the south end of the centreline. It outcrops in the creek bed near the Forestry camp at an elevation of approximately 2,070 feet and is overlain by over 100 feet of brown, silty clay which forms steep cuts on either side of the roadway. From the above limited observations it appears probable that at least several hundreds of feet of normally loaded, fine-grained sediments occupy the Hansard Lake-Eaglet Lake depression in the vicinity of damsite "A" and that these will predominate in all drill holes put down along the centreline. Apparently gravel lenses were encountered in water wells several miles to the east and similar lenses may be encountered in drill holes at the site. If so, they will be of limited extent and should offer no serious problems to drilling. A previous geological report on this area pointed out the possibility of the existence of gravelly ablation moraine and basal till underlying the clays and silts but on the evidence presently available it is impossible to predict if these materials exist or their possible depths.

The centreline of damsite "A" is crossed near its south end by the gravel-surfaced highway. No access roads exist along the centreline except at its extreme south end. However, access roads and drill rig set-ups could be constructed in the soft

sediments at low cost and the distances involved are relatively short. It is recommended that if road construction is done before freeze-up, a light weight caterpillar be used and that, in the swamp areas, the underlying soil be disturbed as little as possible. As there are numerous logging operations in the area, obtaining a suitable caterpillar should be no problem.

Damsite "B" (3 miles west of Aleza Lake)

The topography and ground conditions at damsite "B" (see accompanying plan) are very similar to those at damsite "A." Three water wells were located near damsite "B" and their locations are shown on the accompanying plan (well Nos. 1, 2, and 3). Well No. 2 was being dug at the time of the writer's visit and the owner reported that he had encountered the following:

Well No. 2

0' - 3' : Sand

3' - 8' : Interbedded clay and silt

8' - 30' : Plastic clay

Water level: -2'

Well No. 3, collared at elevation approximately 2,040 feet, was reported to have encountered impervious clay for its entire depth of 88 feet. Well Nos. 4 and 5 are located about 1 mile west of the centreline. They are reported to have encountered the following:

Well No. 4

0' - 5' : Sandy silt

5' - 18' : Clay

Water level: -6'

Well No. 5

0' - 12' : Clay

12' - 15' : Sand

Water level: -8'

The water level in well No. 5 indicates that slight artesian pressure exists in the sand stratum encountered. From the above water well data, fine-grained sediments similar to those at damsite "A" exist to an elevation of approximately 1,950 feet and probably continue to a considerably greater depth. Such sediments will probably be encountered in drill holes over the entire length of the centreline. Gravel lenses may be encountered but if so, they will probably be of limited extent.

The centreline of damsite "B" is crossed near its centre by the gravel-surfaced highway. Two abandoned roads run at right angles to the highway immediately east of the centreline and these could be improved at a low cost for access of drilling equipment or new roads could be constructed in a similar manner to that suggested under damsite "A."