

CANADA
DEPARTMENT OF ENERGY, MINES AND RESOURCES

GEOLOGICAL SURVEY OF CANADA
TOPICAL REPORT NO. 119

611
MACKENZIE RIVER DRAINAGE BASIN
DAM SITE INVESTIGATION

SITE No. 21

CARIBOU DAM SITE
(MAP AND NOTES)

E. B. OWEN



OTTAWA
1967

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Chief Geologist

DEC 16 1966

Geological Survey

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Caribou Dam Site

General Description

The examination of Caribou dam site on Caribou River in the Northwest Territories was part of an investigation by the Water Resources Branch, Department of Energy, Mines and Resources of potential dam sites in the Flat River drainage basin which would provide storage for larger dams on south Nahanni River. Flat River is one of the larger tributaries of the South Nahanni joining it about 106 miles upstream from its junction with Liard River situated near the community of Nahanni Butte.

Caribou dam site is located about 23 miles upstream from the mouth of Caribou River. The site is included on National Topographic series sheet No. 95E (Flat River) and on aerial photograph A17123-171 obtainable from the National Air Photographic Library, 615 Booth Street, Ottawa, Ontario. The geology is described in Geological Survey of Canada, Paper 64-52¹.

At the proposed dam site Caribou River occupies a narrow, deep valley with a steep gradient which would in itself provide only a limited amount of storage. However, about 2 miles upstream, Diamond Creek, which drains Clark and McMillan Lakes, joins the Caribou. There is a difference in elevation of about 200 feet between Clark Lake and Caribou River at the site. Consequently a 250-foot dam would back water into the lakes and substantially increase the capacity of the reservoir. The left side of Caribou River valley in which one abutment of the proposed dam would be located rises steeply from the edge of the river to a height in excess of 250 feet but to obtain the required height on the right side it will be necessary to extend the dam some 1,200 feet across a gravel-covered terrace. This is indicated on the accompanying geological map.

¹

Gabrielse, H., Roddick, J.A. and Blusson, S.L.: Flat River, Glacier Lake and Wrigley Lake, District of Mackenzie and Yukon Territory; Geol. Surv. Can; Paper 64-52, 1965.

Chemical Analysis of Caribou River Water at Caribou dam site
(parts per million)

Location	Date	Discharge	pH	SiO ₂	Ca	Mg	Na	K	Fe	CO ₃	HCO ₃	SO ₄	Cl	F	NO ₃	Turbidity	Hardness as CaCO ₃
Right side of river, 12 inches beneath water surface	July 25, 1964 Temp. 51°F	Med.	7.9	4.7	53.4	9.1	0.8	0.6	0	0	163	33.2	0.1	0.1	0	1	171

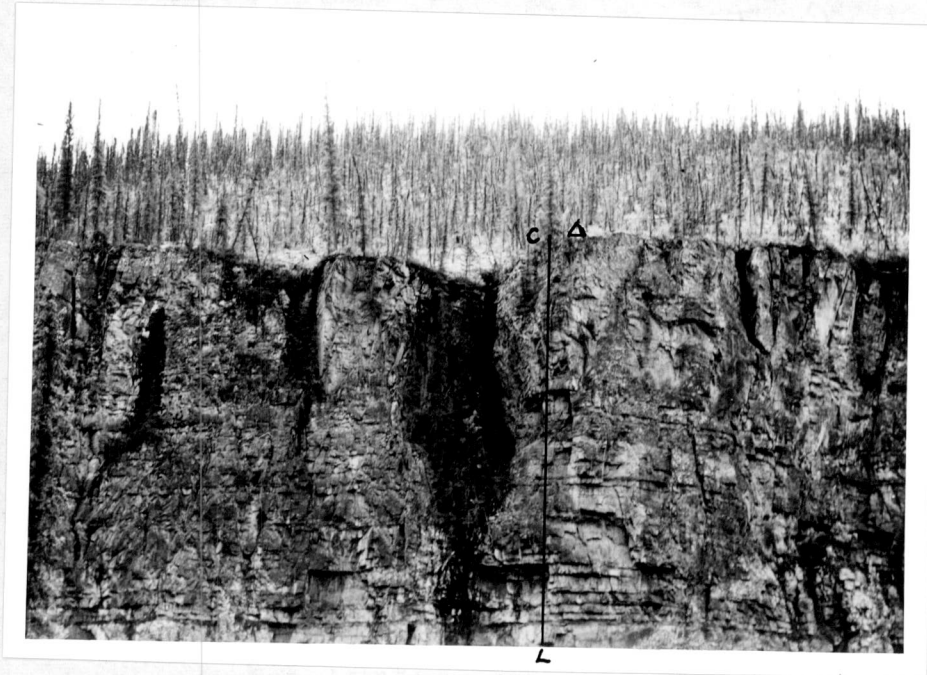


Plate 1

Right abutment, Caribou dam site showing dolomitic limestone exposed in a 120-foot, vertical bluff rising from the right side of Caribou River; Δ survey station A-1, C.L. proposed centre line indicated on accompanying map.

G.S.C. 12-4-64.

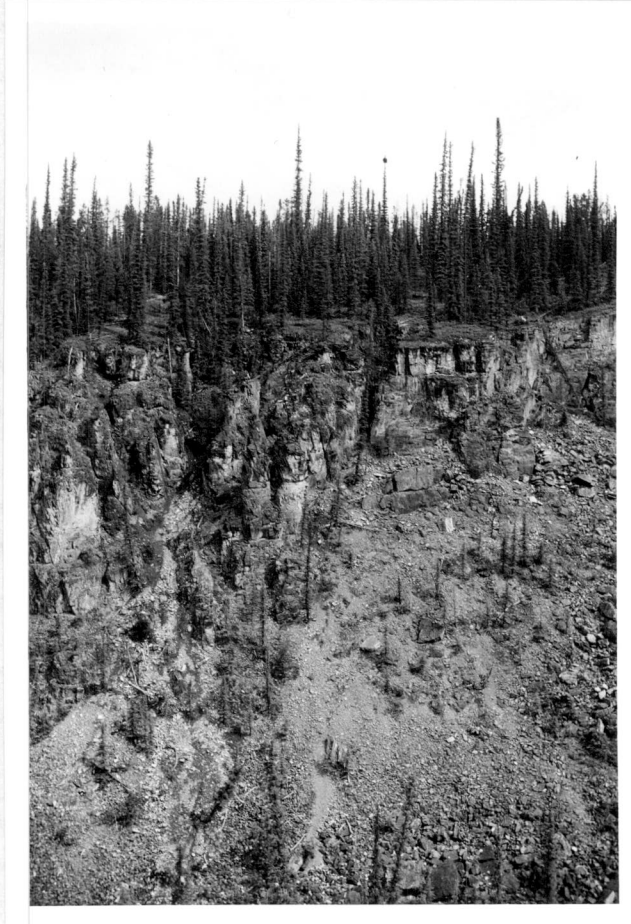
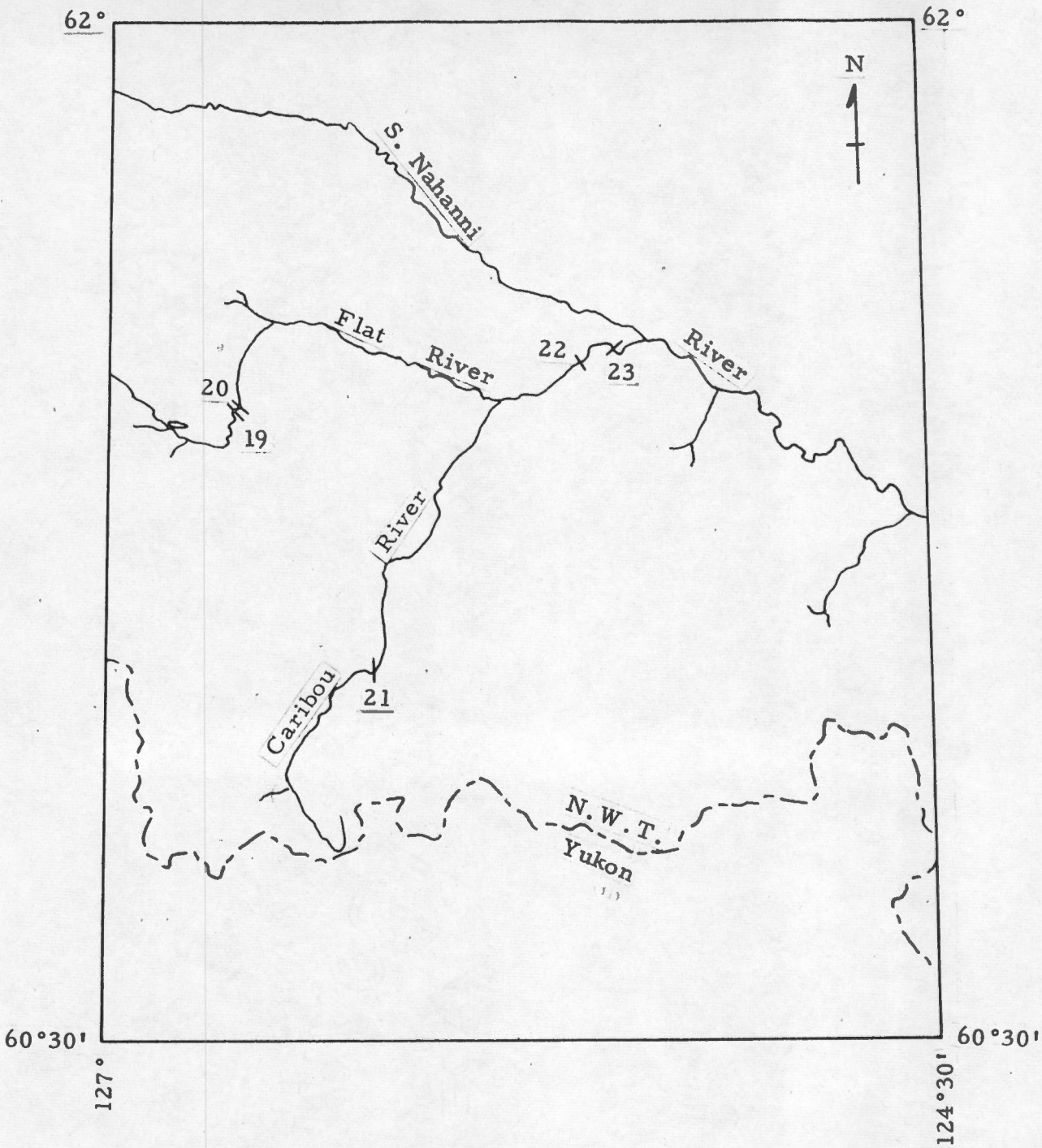


Plate 2

Left abutment, Caribou dam site 100 feet downstream from centre line on map; bedrock terrace is about 190 feet above Caribou River.

G.S.C. 11-4-64



LOCATION OF PROPOSED DAM SITES
MACKENZIE RIVER DRAINAGE BASIN
Scale: 1:1,000,000

<u>Site No.</u>	<u>Name</u>	<u>River</u>
19	Upper Seaplane	Flat
20	Lower Seaplane	Flat
21	<u>Caribou</u>	Caribou
22	Upper Flat Canyon	Flat
23	Lower Flat Canyon	Flat