

921/9E

Report on Limestone on the North Bank on the South  
Thompson River About Ten Miles East of Kamloops.  
(50° 120° N.E.)

The days of December 13 and 14, 1950 were spent on a preliminary survey of two limestone deposits on the north bank of the South Thompson River, east of Kamloops. The purpose of the examination was to obtain a rough idea of the quantity of limestone available in the deposits.

The locations of the two limestone deposits are indicated on the accompanying diagram which is taken from Map 886 A, Nicola Sheet, published by the Geological Survey of Canada.

Limestone deposit No. 1 is a small one. It forms a narrow elongate ridge trending northerly up the southeast nose of a small hill. Massive limestone is exposed over an area about 720 feet long averaging 130 feet wide. There is a difference in elevation of approximately 300 feet between the base of the exposure and the top. The limestone appears to be a pod or lens-shaped mass in a contorted sedimentary series that consists mainly of argillites and sandstones at this point. A much narrower limestone lens outcrops 200 feet north of this first one. The bedding in the limestone is rather indistinct but seems to strike about 10 degrees west of north and dips steeply easterly.

The limestone varies from dark to light grey. Chert occurs as scattered patches and in irregular narrow bands that are roughly parallel.

Three samples were taken in a line across the base of the outcrop. No. 1 was from the relatively chert-free looking west side, No. 2 from a narrow cherty band in the centre, and No. 3 from the chert-free looking east side.

	CaCO <sub>3</sub>	MgCO <sub>3</sub>	SiO <sub>2</sub>
	%	%	%
No. 1 - across 70 feet	97.28	Trace	2.2
No. 2 - across 20 feet	83.00	Trace	14.7
No. 3 - across 80 feet	94.78	Trace	5.1

Assuming an average depth of 190 feet for the main lens, the outcrop should contain a minimum of 1 1/2 million tons of rock. While it is admitted that this is a conservative minimum estimate and it is realized that the depth of the deposit is probably considerably greater than that used herein for calculation, it must be noted that the deposit is definitely a lens and is therefore of limited extent, and also the cherty portions of the deposit will have to be eliminated for the use intended.

Limestone deposit No. 2 is about 11 miles in a straight line due east of the road bridge across the South

Thompson River at the city of Kamloops. This deposit outcrops over an area roughly a mile wide by two miles long. It trends northerly up and over the west end of a ridge that has two prominent knolls near this end. This would appear to be the deposit described by M.F. Goudge in "Limestones of Canada--Their Occurrence and Characteristics--Part V, Western Canada" page 184, Bureau of Mines Publication No. 811, Department of Mines and Resources, Ottawa.

Because of the extent of this deposit as indicated on Geological Survey of Canada Map 886A and because of Goudge's report, this examination was limited to a quick general reconnaissance of exposures showing on the southern slope of the ridge.

The colour of the limestone varies from almost white to very dark grey. Chert occurs throughout the deposit as irregular patches and as discontinuous parallel bands. Zones are visible where the chert appears to be scarce or absent.

The lowest outcrop consists of a bluff approximately 500 feet long by 150 feet wide. The base of the bluff is about 3,000 feet north of the river road. It is in the bottom and near the end of a small gully in the main silt terrace of the region. The limestone extends up to the top of the silt terrace, a height of about 120 feet. At least three reddish-brown weathering dykes up to 3 feet wide cut across the limestone. A partial analysis of a chip sample

taken across a stratigraphic thickness of 110 feet near the centre of this bluff gave the following results:

CaCO<sub>3</sub> - 83.72 per cent.  
MgCO<sub>3</sub> - Trace  
SiO<sub>2</sub> - 15.3

A second knoll of limestone at least 400 feet by 200 feet outcrops about 170 feet north of the one just mentioned. It contains scattered patches of chert on the south face but looks fairly chert-free on the flat behind the face. North of these two outcrops are numerous bluffs of limestone scattered across the slope of the hill.

The exposures are readily seen on B.C. Government Air Photos Nos. 4, 5, 6 of flight B.C. 629 taken on July 31, 194 and the bottom outcrops are shown on R.C.A.F. Photos Nos. 27, 28, 29 of flight A-293.

Although the limestone does contain chert which varies in abundance from place to place over the deposit, it is thought that large quantities of chert-free high calcium lime are available from this deposit if quarry sites are carefully selected. Goudge gives analyses of three samples taken over thicknesses of 100, 200, and 300 feet of pure limestone--all containing more than 98 per cent. CaCO<sub>3</sub>. However it is emphasized that if it were decided to quarry high calcium limestone from this deposit it would be necessary

to have a detailed map made of the area and have the best looking zones sampled. From this information the most favourable quarry sites could be selected.

December 22, 1950.

J.W. McCannon  
Department of Mines



DEPARTMENT OF MINES  
VICTORIA

SAMPLE RECEIVED FROM..... Mr. J. W. McCammon

ADDRESS..... Geologist, Department of Mines - Buildings.

LABORATORY No.	SUBMITTER'S MARK.	LABORATORY REPORT.			
		<u>Analyses:</u>			
		<i>CaCO<sub>3</sub></i>	CaO <u>%</u>	SiO <sub>2</sub> <u>%</u>	MgO <u>%</u>
4302 M	372 A	97.28	54.5	2.2	Trace
4303 M	373 A	83.00	46.5	14.7	Trace
4304 M	374 A	94.78	53.1	5.1	Trace
4305 M	375 A	83.72	46.9	15.3	Trace

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DATE..... December 22, 1950

..... FOR CHIEF ANALYST AND ASSAYER.