Rept.Bk.No. 58/31
D.M. 2214/63
G.S. 2784

DEPARTMENT OF MINES
SOUTH AUSTRALIA

QUARTZITE DEPOSIT

SECTION 147, HD. LINCOLN

(B.H.P. Co. Ltd.)

by

J.G. Olliver
Geologist.

NON-METALLICS SECTION
GEOLOGICAL SURVEY

CONTENTS

Plan No.	Title	Scale
64-136	Quartzite Deposit. Sec. 147, Hd. Lincoln (B.H.P. Co. Ltd.).	1 inch = 100 feet

(2) The Quartzite Deposit.

The quartzite bed mapped, which is part of the Archaean basement (Johns, 1961), forms a low ridge, 50 feet above creek level in Section 147, Hd. Lincoln, capped by Tertiary lateritic gravels. These gravels have been worked for road metal from a shallow pit.located on the eastern boundary of the property.

Except in the quarry and in several bulldozer pits near station 2, bedding altitudes on small isolated outcrops are doubtful. Areas of both quartzite and Tertiary laterite float are indicated on the accompanying plan No. 64-136. The laterite consists predominantly of recemented quartzite fragments.

In the small pit to the north-west of the quarry the quartzite strikes NW-SE and dips to the NE. This trend continues along the western wall of the quarry; the strata swings to NE-SW trend along the quarry and reverts to a NW-SE trend at the eastern face. The beds dip consistently to the east and north.

A shear zone, two feet in width, with a NW-SE trend is inferred to explain the abrupt change in strike direction at the eastern limit of the quarry (east of station 1).

It was found impossible to trace any single bed through the quarry; however the general structure is indicated on the plan. Insufficient data are available to determine the structure beyond the quarry.

The stone varies from a dense grey and white re-crystallised quartzite to a thinly bedded buff sandstone with irregular red and yellow iron staining. Along the western face and in irregular patches elsewhere the quartzite is sugary. Muscovite flakes up to ¼ inch in diameter have developed along the bedding in places.

In the bulldozed pits north of station 2 and between stations 2 and 3, the quartzite is intruded by vugghy white quartz, often iron-stained and with the development of muscovite flakes (up to 1 inch in diameter) and black elongated crystals of tourmaline.

In the shallow pit adjacent to the road on the eastern boundarym coarsely crystalline off white to buff quartzite with minor muscovite flakes are exposed. The beds strike north-south and dip 70° to the west.

Two well-developed sets of joints, approximately at right angles to the bedding and which vary from ½ ~~mile~~ inch to 1 foot apart produce a wide variation in fragment size. Less prominent diagonal planes of breakage also occur.

In the cleared area north of the quarry, the quartzite in the core of the drag fold adjacent to the shear zone has been recrystallized to a dense structureless grey rock.

3. CONCLUSIONS.

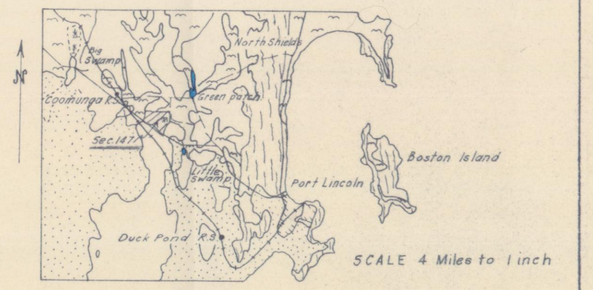
Although the structure of the quartzite is unknown except in the quarry, the occurrence of quartzite float over such an extensive area suggests that reserves of 200,000 cubic yards of stone should be available under shallow overburden.

Bulldozer costeans are recommended as outlined on the plan, to prove the extent and quality of the quartzite and to enable the calculation of reserves.

The stone should break readily in crushing and provide material adequate for use as ballast and as a general civil construction aggregate.

J. G. OLLIVER
GEOLOGIST
NON-METALLICS SECTION

JGO:CH.
10.2.64

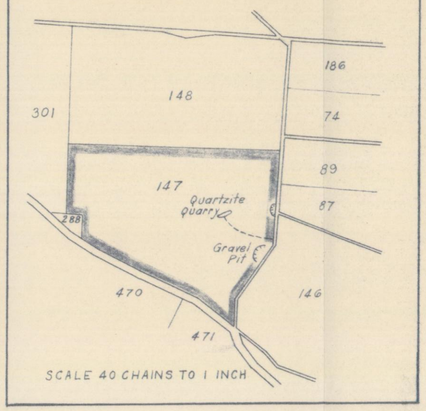


RECENT
Alluvial sediments
PLEISTOCENE
Calcareous aeolianite with travertine crust
TERTIARY
Laterites
ARCHAEAN
Unadifferentiated
Schists, gneisses quartzites with Hematite quartzite.

LEGEND

TERTIARY
Laterite float
ARCHAEAN
Quartzite outcrop
Quartzite float
Strike and Dip inclined
Strike and Dip vertical
Survey Station
Contour Interval 5'
Trend lines
Shear zone
Fence
Recommended Bulldozer costeans

LOCALITY PLAN



To accompany report by J.G. Olliver

S.A. DEPT. OF MINES

QUARTZITE DEPOSIT
SECTION 147 HD. LINCOLN
(B.H.P. CO. LTD.)

Associated Drawing	No.	No.	Amendment	Exd.	Date

Req. No.
D.M.
Compiled from

Approved	Passed		Scale : As shown
		Drn. J.G.O	64-136 Dn 13
		Tcd. A.O.W.	
Director of Mines		Ckd.	
		Exd.	Date 11-2-64