

Rept. No. 54/8
G.S. No. 2224
H. & L.G.D. 1206/54
D.N. 1714/61

17th January, 1962

DEPARTMENT OF MINES
SOUTH AUSTRALIA

RB 54/8

GEOLOGICAL SURVEY

Report on

TESTING OF GRANITE DEPOSIT, SEC. 87, NO. 1142
FOR HIGHWAYS & LOCAL GOVERNMENT DEPARTMENT.

By R. G. Shepherd - Geologist

INTRODUCTION:

Good metal is required for use in Elliston township, and test drilling in the vicinity of a small area of granite outcrops was requested, in order to determine the thickness of overburden.

A quantity of approximately 4,000 cubic yards of crushed rock will probably be required for the proposed road works.

LOCATION, TOPOGRAPHY:;

The area in which test drilling was done is situated on the southern side of the road to Lock and about 5 miles east of Elliston. The granite outcrops on the slopes of a low rounded hill situated a short distance west of the central part of the Bramfield basin.

GEOLOGY:

In the vicinity of the area tested granite of probable Precambrian age occurs as a number of small rounded outcrops. The rock is fine grained, dense and greyish pink in colour and is slightly gneissic.

Cream calcareous scellianite, capped by dense nodular travertine, of Pleistocene age overlies granite bedrock. Within the area tested the maximum known thickness of these sediments is approximately 16 feet. Half a mile west of the granite outcrops the scellianite is more than 50 feet thick.

TEST DRILLING:

Originally 6 holes were drilled on a circle of radius 200 feet near the upper part of the hill where the granite outcrops. Although the holes were situated relatively close to outcrops it was found that the depth

to the granite surface varied from 2 feet to 16 feet.

Subsequently, 7 additional bores were drilled in an attempt to locate granite at shallow depth, preferably 5 feet or less. Drilling was discontinued at 10 feet or on the granite, whichever was the lesser. Six of these bores were completed in acolianite at a depth of 10 feet and the seventh, which is situated some distance from known outcrops, penetrated granite at 3 feet.

Logs of the various test bores are included and the plan shows their positions in relation to the granite outcrops.

The drilling has shown that the level of the upper surface of the granite varies considerably over short distances and there are only a few small areas where it lies at a depth of less than 5 feet.

Test drilling was discontinued as it was considered that other areas of granite outcrop in the vicinity would show similar variations.

SUMMARY & CONCLUSIONS:

Granite occurring in the area tested appears to be quite suitable for road metal, but most of it lies beneath at least 10 feet of overburden, consisting of acolianite capped by travertine.

The quantity of granite required for road metal could be obtained in the area, but a considerable volume of overburden would have to be removed. The travertine limestone is generally quite dense and may be suitable for road metal, although it varies considerably in thickness and in places overlies soft acolianite, which is unsuitable.

It is concluded that quarrying operations may be warranted if a proportion of the overburden, in the form of limestone, could be used.

R. G. Shepherd

R. G. Shepherd
Geologist

PORT LINCOLN REGIONAL OFFICE

RGS:AGK
17/1/62

BORE 1

WATER BORE LOGS

| | |
|--|---|
| NAME: H. & L. G. DEPT. | BORE SERIAL NO.: 580/62 |
| ADDRESS: PT. LINCOLN | R.N.: 1714/61 |
| HUNDRED: WARD | SECTION: 87 |
| HIRER'S BORE NO.: 1 | DRILLER: R. WARD |
| DATE DRILLING COMMENCED: 27/ 9/61 | DATE DRILLING COMPLETED: 4/10/61 |

LOG

0 - 1' Cream dense nodular travertine.
1' - 6'3" Cream sandy limestone and calcareous sandstone.
6'3" - Pink medium grained granite.

End of Bore at 6'3".

Bore logged by R.G. Shepherd on 16/11/61.

BORE 2

| | |
|---|---|
| NAME: H. & L. G. DEPT. | BORE SERIAL NO.: 580/62 |
| ADDRESS: PT. LINCOLN | R.N.: 1714/61 |
| HUNDRED: WARD | SECTION: 87 |
| HIRER'S BORE NO.: 2 | DRILLER: R. WARD |
| DATE DRILLING COMMENCED: 27/9/61 | DATE DRILLING COMPLETED: 4/10/61 |

LOG

0 - 6" Cream dense nodular limestone
6" - 1' Buff fine grained dense limestone
1' - 2' Light grey dense nodular limestone
2' - Pink fine grained granite

End of bore at 2'.

Bore logged by R.G. Shepherd on 16/11/61.

BORE 3

| | | | |
|---------------------------------|-------------------|---------------------------------|---------|
| <u>NAME:</u> | H. C. L. G. DEPT. | <u>BORE SERIAL NO.:</u> | 580/62 |
| <u>ADDRESS:</u> | PT. LINCOLN | <u>D.N.:</u> | 1714/61 |
| <u>HUNDRED:</u> | HARD | <u>SECTION:</u> | 87 |
| <u>HIRER'S BORE NO.:</u> | 3 | <u>DRILLER:</u> | R. WADE |
| <u>DATE DRILLING COMMENCED:</u> | 27/9/61 | <u>DATE DRILLING COMPLETED:</u> | 4/10/61 |

LOG

0 - 10' Cream fine grained dense sandy limestone
10' - 16' Buff fine grained dense nodular limestone
16' - Pink medium grained granite.

End of Bore at 16'

Bore logged by R. G. Shepherd

BORE 4

| | | | |
|---------------------------------|-------------------|---------------------------------|---------|
| <u>NAME:</u> | H. C. L. G. DEPT. | <u>BORE SERIAL NO.:</u> | 580/62 |
| <u>ADDRESS:</u> | PT. LINCOLN | <u>D.N.:</u> | 1714/61 |
| <u>HUNDRED:</u> | HARD | <u>SECTION:</u> | 87 |
| <u>HIRER'S BORE NO.:</u> | 4 | <u>DRILLER:</u> | R. WADE |
| <u>DATE DRILLING COMMENCED:</u> | 27/9/61 | <u>DATE DRILLING COMPLETED:</u> | 4/10/61 |

LOG

0 - 10' Buff fine grained dense nodular limestone
10' - Pink fine grained granite.

End of bore at 10'

Bore logged by R. G. Shepherd on
16/11/61.

BORE 5

NAME: H. G. L. G. DEPT.

BORE SERIAL NO.: 580/62

ADDRESS: PT. LINCOLN

D.M.: 1714/61

HUNDRED: WARD

SECTION: 87

HIRER'S BORE NO.: 5

DRILLER: R. WADE

DATE DRILLING COMMENCED: 27/9/61

DATE DRILLING COMPLETED: 4/10/61

LOG

0 - 13'6" Cream dense nodular limestone
13'6" - Pink fine grained granite.

End of Bore at 13'6"

Bore logged by R. G. Shepherd.

BORE 6

NAME: H. G. L. G. DEPT.

BORE SERIAL NO.: 580/62

ADDRESS: PT. LINCOLN

D.M.: 1714/61

HUNDRED: WARD

SECTION: 87

HIRER'S BORE NO.: 6

DRILLER: R. WADE

DATE DRILLING COMMENCED: 27/9/61

DATE DRILLING COMPLETED: 4/10/61

LOG

0 - 14' Cream dense nodular limestone
14' - Pink fine grained granite

End of Bore at 14'

Bore logged by R. G. Shepherd
on 16/11/61.

BORE 7

| | | | |
|---------------------------------|------------------|---------------------------------|---------|
| <u>NAME:</u> | H. & L. G. DEPT. | <u>BORE SERIAL NO.:</u> | 619/62 |
| <u>ADDRESS:</u> | PORT LINCOLN | <u>D.N.:</u> | 1714/61 |
| <u>HUNDRED:</u> | WARD | <u>SECTION:</u> | 87 |
| <u>HIBER'S BORE NO.:</u> | 7 | <u>DRILLER:</u> | R. WADE |
| <u>DATE DRILLING COMMENCED:</u> | 10/11/61 | <u>DATE DRILLING COMPLETED:</u> | |

LOG

0 - 1' Cream dense nodular travertine
1' - 7' Buff fine grained dense calcareous sandstone
7' - 10' Cream fine grained calcareous sandstone.

End of Bore at 10'.

Bore logged by R.G. Shepherd on 11/1/62.

BORE 8

| | | | |
|---------------------------------|------------------|---------------------------------|---------|
| <u>NAME:</u> | H. & L. G. DEPT. | <u>BORE SERIAL NO.:</u> | 619/62 |
| <u>ADDRESS:</u> | PT. LINCOLN | <u>D.N.:</u> | 1714/61 |
| <u>HUNDRED:</u> | WARD | <u>SECTION:</u> | 87 |
| <u>HIBER'S BORE NO.:</u> | 8 | <u>DRILLER:</u> | R. WADE |
| <u>DATE DRILLING COMMENCED:</u> | | <u>DATE DRILLING COMPLETED:</u> | |

LOG

0 - 6' Light brown fine grained calcareous sandstone and limestone.
6' - 8' Cream fine grained calcareous sandstone.
8' - 10' Cream dense sandy limestone and calcareous sandstone.

End of Bore at 10'

Bore logged by R.G. Shepherd on 11/1/62.

BORE 9

NAME: H. & L. G. DEPT.

BORE SERIAL NO.: 619/62

ADDRESS: FORT LINCOLN

D.M.: 1714/61

NUMBER: WARD

SECTION: 87

NIKE'S BORE NO.: 9

DRILLER: R. MADE

DATE DRILLING COMMENCED:

DATE DRILLING COMPLETED:

LOG

0 - 2' Cream dense nodular travertine
2' - 10' Buff fine grained calcareous sandstone.

End of Bore at 10'

Bore Logged by R.G. Shepherd on 11/1/62.

BORE 10

NAME: H. & L. G. DEPT.

BORE SERIAL NO.: 619/62

ADDRESS: FORT LINCOLN

D.M.: 1714/51

NUMBER: WARD

SECTION: 87

NIKE'S BORE NO.: 10

DRILLER: R. MADE

DATE DRILLING COMMENCED:

DATE DRILLING COMPLETED:

LOG

0 - 6' Light brown fine grained calcareous sandstone and
limestone.
6' - 10' Buff fine grained calcareous sandstone.

End of Bore at 10'

Bore Logged by R.G. Shepherd on 11/1/62.

BORE 11

NAME: B. & L. G. DEPT.

BORE SERIAL NO.: 619/62

ADDRESS: PORT LINCOLN

D.E.: 1714/61

HUNDRED: WARD

SECTION: 07

HIRER'S BORE NO.: 11

DRILLER: R. WADE

DATE DRILLING COMMENCED:

DATE DRILLING COMPLETED:

LOG

0 - 5' Light brown fine grained calcareous sandstone and dense limestone.

5' - 10' Cream fine grained calcareous sandstone.

End of Bore at 10'

Bore logged by R.G. Shepherd on 11/1/62.

BORE 12

NAME: B. & L. G. DEPT.

BORE SERIAL NO.: 619/62

ADDRESS: PORT LINCOLN

D.E.: 1714/61

HUNDRED: WARD

SECTION: 07

HIRER'S BORE NO.: 12

DRILLER: R. WADE

DATE DRILLING COMMENCED:

DATE DRILLING COMPLETED:

LOG

0 - 4' Buff fine grained calcareous sandstone

4' - 10' Cream fine grained calcareous sandstone and limestone.

End of Bore at 10'

Bore logged by R. G. Shepherd on
11/1/62.

BORE 13

NAME: H. & L. G. DEPT.

BORE SERIAL NO.: 619/62

ADDRESS: PORT LINCOLN

D.N.: 1714/61

HUNDRED: WARD

SECTION: 87

HYDER'S BORE NO.: 13

DRILLER: R. WADE

DATE DRILLING COMMENCED:

DATE DRILLING COMPLETED:

LOG

0 - 3' Light brown fine grained calcareous sandstone.

3' - 3'6" Pink fine grained granite.



End of Bore at 3'6".

Bore logged by R.G. Shepherd on
11/1/62.

ROAD RESERVE

STONE FENCE

Travertine + calcareous sandstone
Pink fine grained granite (outcrops)
Test Bores
Depth to granite bedrock



 $\cdot \frac{13}{3'}$
 $\cdot 2$
 $2'$

To accompany report by G.R. Shepherd

| S.A. DEPARTMENT OF MINES | | | | | |
|--------------------------|--------|-----------|---|------|-----------------|
| Approved | Passed | Drn. | GRANITE DEPOSIT H ^o WARD Sec 87 H + L.G. DEPT. | D.M. | Scale 50' to 1" |
| | | Tcd. G.M. | | Req. | \$ 2990 |
| | | Ckd. | | | D116 |
| Director | | Exd. | | | Date 19-1-62 |