R/B 61/5.

DEPARTMENT OF MINES
SOUTH AUSTRALIA

# REPORT ON SHALE DEPOSIT

## Hundred Willunga, Section 80

- C.J. and J. Rootman -

by

R.K. Johns
Senior Geologist

CONTENTS



FIGURES

| Plan No. | Title | Scale |
|---|---|---|
| 65 - 743 | Shale deposit, Hundred Willunga, Section 80. | 100ft. = 1" |

Rept.Bk.No. 61/5
G.S. No. 3183
D.M. No. 672/65

8th July, 1965

Rept.Bk.No. 61/5
G.S. No. 3183
D.M. No. 672/65

DEPARTMENT OF MINES
SOUTH AUSTRALIA

# REPORT ON SHALE DEPOSIT

## Hundred Willunga, Section 80

- C.J. and J. Roetman -

## INTRODUCTION

In company with Mr. John Roetman an inspection was made of part section 80, Hundred Willunga on 2nd June, 1965. Samples of weathered shale which are exposed in a gully tributary to the River Onkaparinga immediately south of the township of Noarlunga have been test fired by Mr. Roetman who considers that they are suitable for brick making.

To assess reserves of shale the area was mapped on 8th June, 1965, with the assistance of survey assistant, P. Heuke. The area under option lies immediately north of the main McLaren Vale - Noarlunga road.

## GEOLOGY

Bedrock exposed in the locality comprises deeply weathered finely laminated purple shales with thin quartzites and grits of the Marinoan Series. Shales are exposed in the gully which defines the eastern boundary of the area under review; these overlie a bed of grit, 10ft. in thickness, with shales, sandstones and thin, grey, dense, cross bedded limestone. The strata are gently folded and dip generally westerly at $10^{\circ}$ - $30^{\circ}$.

The shales are truncated by the Ochre Cove Fault and are overlapped on the west by Lower Tertiary lignites, sands, limestones, marls etc. The Tertiary sediments are exposed in the Southern bank of the River Onkaparinga, where they are flat lying but adjacent to the fault they are inclined at low angles. A

considerable area in this locality has been tested by Government drilling and attempts were made in the period 1907-1924 to recover lignite.

There are remnants of a sheet of cemented nodular kunkar with marl which are preserved near the eastern boundary fence and which are exposed in the road cutting to the south. Elsewhere the surface is veneered by alluvium.

## THE SHALE DEPOSIT

Trial samples of shale have been test fired and are reported to be suitable raw material for use in brick making. The shale appears to be uniform in composition and is generally deeply weathered.

Reserves of shale which extend from the gully to the road above the 930ft. level are estimated to be half a million cubic yards. It is considered that brick making operations would requir 200 tons of shale per week, say 10,000 tons / year so that reserve appear to be adequate for 50 years.

This estimate makes no allowance for overburden, the thickness of which is unknown over the cultivated portion of the property and depends on the accuracy of the positioning of the Ochre Cove Fault. On the accompanying plan the trace of the fault is shown as a gentle arc which connects its precise northern position to the end of the line of barytes workings some 700 yards to the south.

## CONCLUSIONS AND RECOMMENDATIONS

Reserves of shale in the area mapped total ½ million cubic yards. It is considered that more representative samples should be procured for test firing to assure uniformity of material throughout the area.

To locate the trace of the fault which is concealed by alluvium and to determine the thickness of overburden elsewhere it is recommended that test drilling be undertaken - six bores approximately 25ft. each would be adequate.

RKJ:JLP
8/7/65

R.K. JOHNS.
SENIOR GEOLOGIST.