DEPARTMENT OF MINES
SOUTH AUSTRALIA

RIB 51/144

Report on

CROMER-C. WHITE CLAY DEPOSIT

SECS. 136, 143 & 154, HD. PARA WIRRA, CO. ADELAIDE

(J. W. MUNN and N. J. CHAMBERLAIN)

by

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Geologist

MINERAL RESOURCES SECTION

GEOLOGICAL SURVEY

NING REVIEW 113

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S.2665	Location of Leases White Clay Deposit Sec. 136, 143 & 154, Hd. Para Wirra	1 inch = 500 ft
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Rept. Bk. 51/144
G.S. 1884
D.M. 2063/58

14th December, 1960

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CROMER-C WHITE CLAY DEPOSIT,

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1. ABSTRACT

The Cromer-C. clay deposit consists of three groups of workings extending over 1¼ miles in fractured greywacke rocks of the Kanmantoo Group of sediments. The white clay is derived from kaolinisation of the original sediments possibly due to hydrothermal solutions in the vicinity of a major fault. The clay occurs as pockets, which in the northern group of workings has a general en echelon arrangement. Test drilling with a Rover mounted auger between the groups of workings is suggested.

2. INTRODUCTION

Following a request by Clay Supplies Ltd., for the services of a Geologist, the writer visited the above area on 20th January 1960. At that time a poppet head was being erected over No. 3 Shaft which was not accessible for inspection. Mr. Chamberlain advised that he would notify the Department when the workings would be accessible.

Between 10-19th May five days were spent in the field and all the surface workings and lease pegs were surveyed with theodolite and stadia. All the underground workings were picked up by tape and compass survey.

On July 4th the writer visited the deposit with A. Tynan from A.M.D.L. and pointed out the features indicating kaolinisation of country rock forming the clay deposit.

3. REFERENCES

Mining Review No. 80, pp. 103-106. 1945 (E. Broadhurst)

Geol. Survey. S. Aust. Bull. No. 28, pp. 31-34, 1951

Ceramics Research Report No. 132 Sept. 1959

4. GEOLOGY

The regional geology of the area is outlined on the Gawler sheet of the Geological Atlas 1 mile series, showing inliers of pegmatites in the Kanmantoo Group of sediments in close proximity to a faulted contact with pre Cambrian sediments. Tertiary sands and clays unconformably overlie all the older groups of rocks.

Most of the area is covered with loose grey sand with occasional outcrops of iron stained quartz, arkose and iron stained clay. In places floaters of rutile bearing quartz are abundant.

Workings occur in three isolated groups extending over a length of 1¼ miles on a bearing of 330°(m), along a possible fracture zone. The attitude of the bedding could not be determined but is thought to be steep easterly. The clay occurs as irregular pockets each pocket roughly elongated along a bearing of 360° arranged en echelon along a bearing of 335° in the northern group of workings.

All the workings (apart from those being operated at present) are unsafe; because of this no detailed underground geological mapping was done although all accessible workings have been picked up by tape and compass survey.

In No. 3 shaft in the northern group of workings the kaolinisation on the footwall dips approximately 45° to the east. A good cross section is exposed from the bottom of this shaft, along a cross cut to the current workings, showing damp soft weathered and shattered greywacke, with small randomly orientated veins of kaolin, gradually getting whiter eastwards along the cross cut, till the pure white kaolin is reached. The small kaolin veins as seen in the unaltered greywacke persist into the massive kaolin. None of the usual characteristics of pegmatites i.e. coarse crystals of mica, quartz and feldspar with sharp contact with the country rock were seen in the underground workings.

The workings inspected at No. 3 shaft are on two levels. The upper level 33 ft below the shaft collar are old and not very safe. Most of the back was iron stained except for approximately 18 inches either side along hair line fractures which were driven on (See enlargement on Map No. 60-623). These fractures are shown up clearly by tree roots which may have removed iron staining for a limited distance on either side. Below the 15 foot level the clay is much better being devoid of iron staining except along the eastern limits of the level. Details of the workings are described by Broadhurst (op. cit.).

The southern workings are believed to have been sunk on quartz veins carrying rutile and the discovery of white clay was only incidental.

Varieties of clay seen in the workings include (i) A hard dense massive white clay with a conchoidal fracture. This variety occurs near the surface and at depth. (ii) A soft massive white clay with irregular fracture (iii) A soft massive light weight porous kaolinite. Because of its porosity this clay is lighter than water. (iv) Soft sandy clay. Some of these varieties are probably due to differences in the original rock type.

So far as is known none of the workings have been sunk to the bottom of the clay pockets and test drilling to outline the depth to which the clay might extend would help outline possible reserves. It is also probable that all the white clay in the area has not been located and some pattern of test drilling with a Rover mounted auger is warranted between the known clay occurrences.

6. CONCLUSIONS

The Cromer-C. clay deposit is a product of kaolinisation of fractured greywacke type rocks of the Kanmantoo group of sediments. Outcrop is very poor.

The clay occurs in three groups over a length of 1¼ miles along a bearing of 330°. In each group the clay occurs

in pockets, each pocket elongated in a roughly north south direction and in the northern group of workings arranged en echelon pattern along a bearing 335°.

None of the workings are known to have bottomed on country rock and all of them are unsafe except for the current workings.

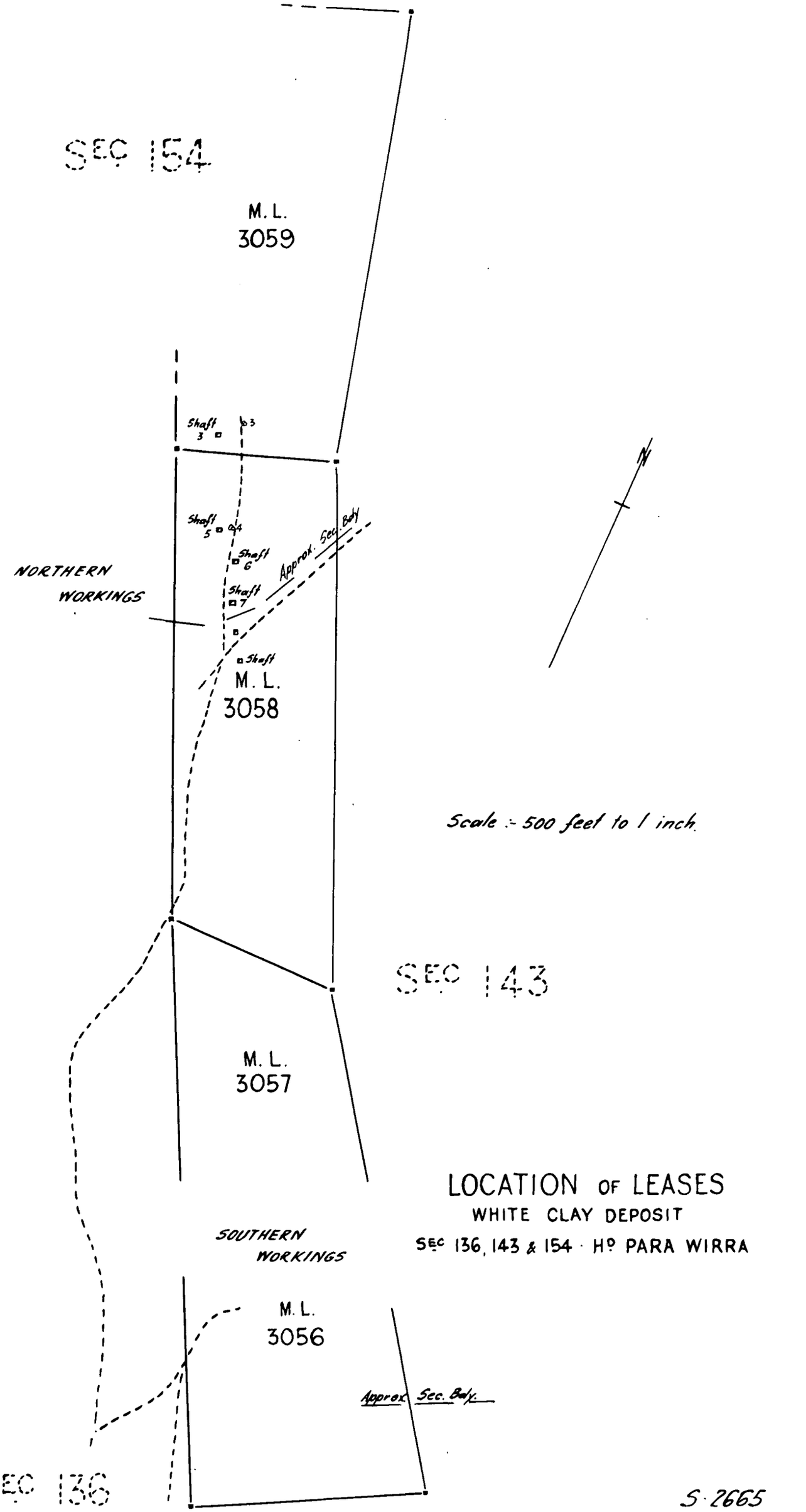
Varieties of clay include a dense hard white clay with conchoidal fracture, a soft massive white clay, and a soft lightweight white kaolinite.

Test drilling between the groups with a Rover mounted auger is recommended and some deep holes to test the extension of clay at depth is warranted.

L. G. Nixon

L. G. NIXON
GEOLOGIST

LGN:CERF
14/12/60



LOCATION OF LEASES

WHITE CLAY DEPOSIT

SEC 136, 143 & 154 · Hº PARA WIRRA

S·2665

S. A. DEPT. OF MINES

To accompany report by L. G. Nixon.

6·12·60

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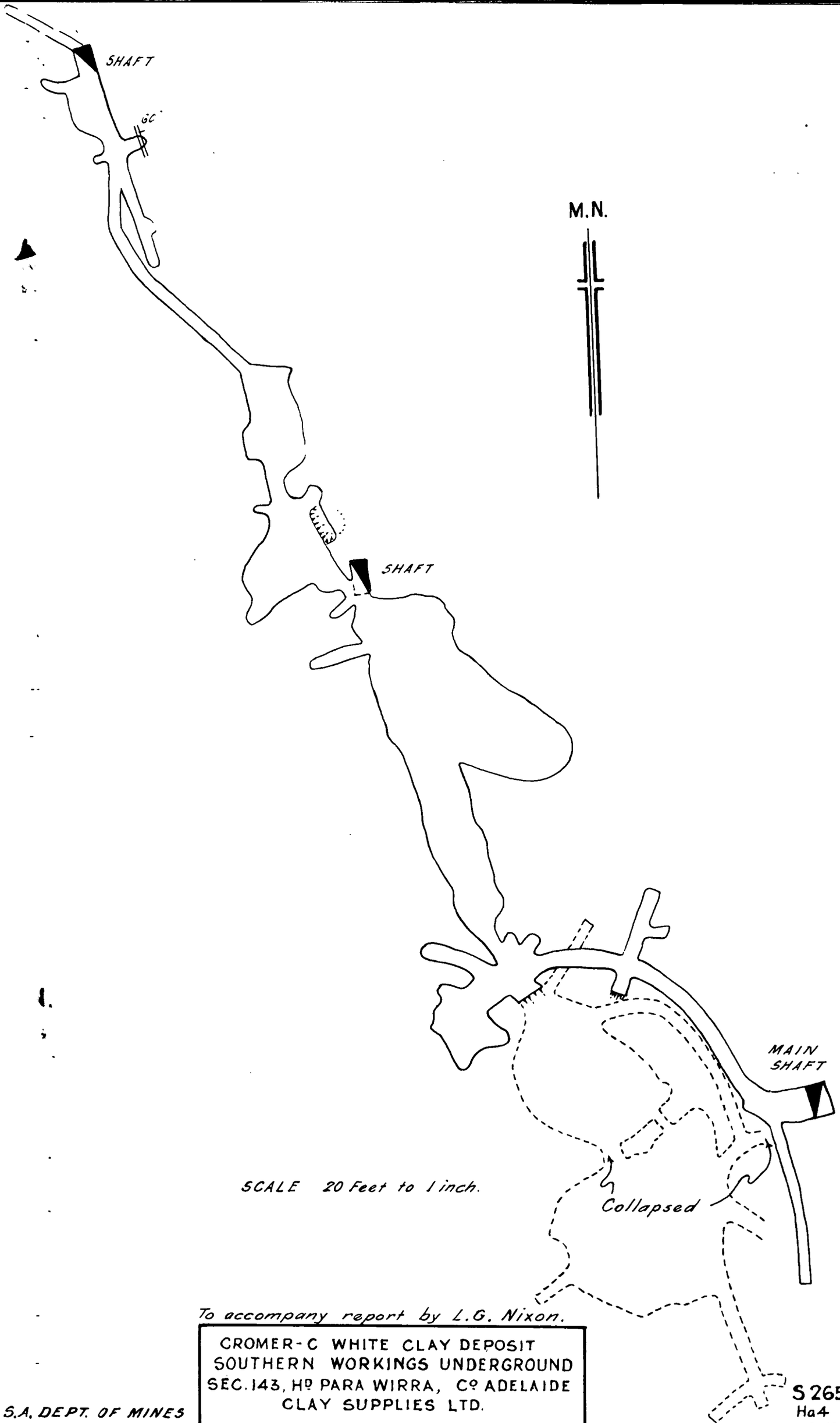


SCALE 20 Feet to 1 inch.

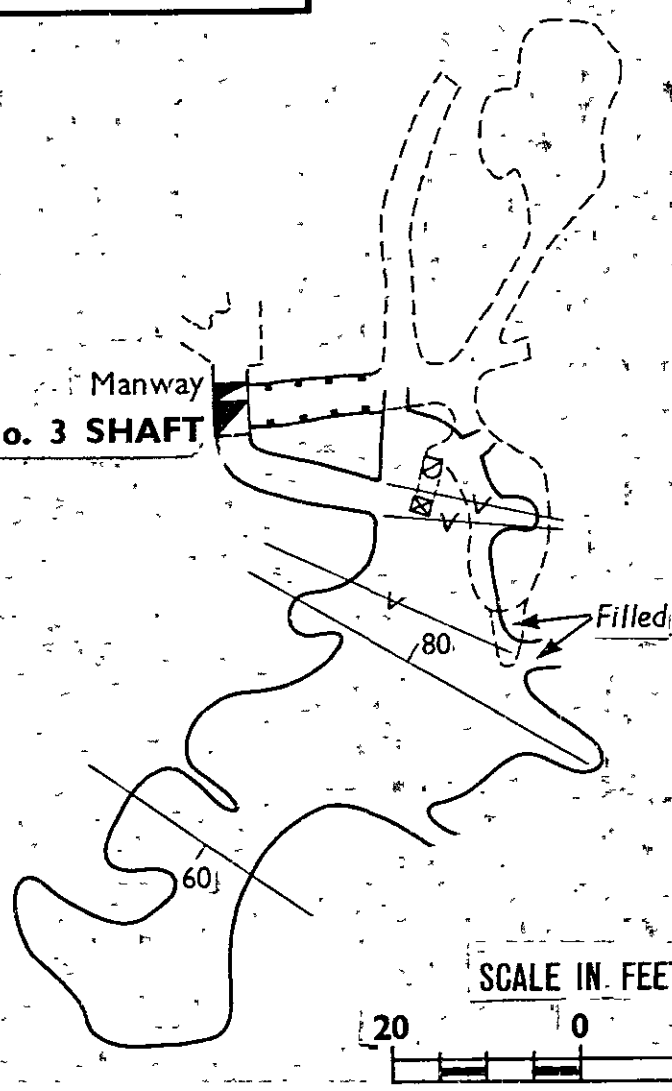
To accompany report by L.G. Nixon.

CROMER-C WHITE CLAY DEPOSIT
SOUTHERN WORKINGS UNDERGROUND
SEC. 143, Hº PARA WIRRA, Cº ADELAIDE
CLAY SUPPLIES LTD.

S.A. DEPT. OF MINES

S 2658
Ha4
3-12-60

ENLARGEMENT A



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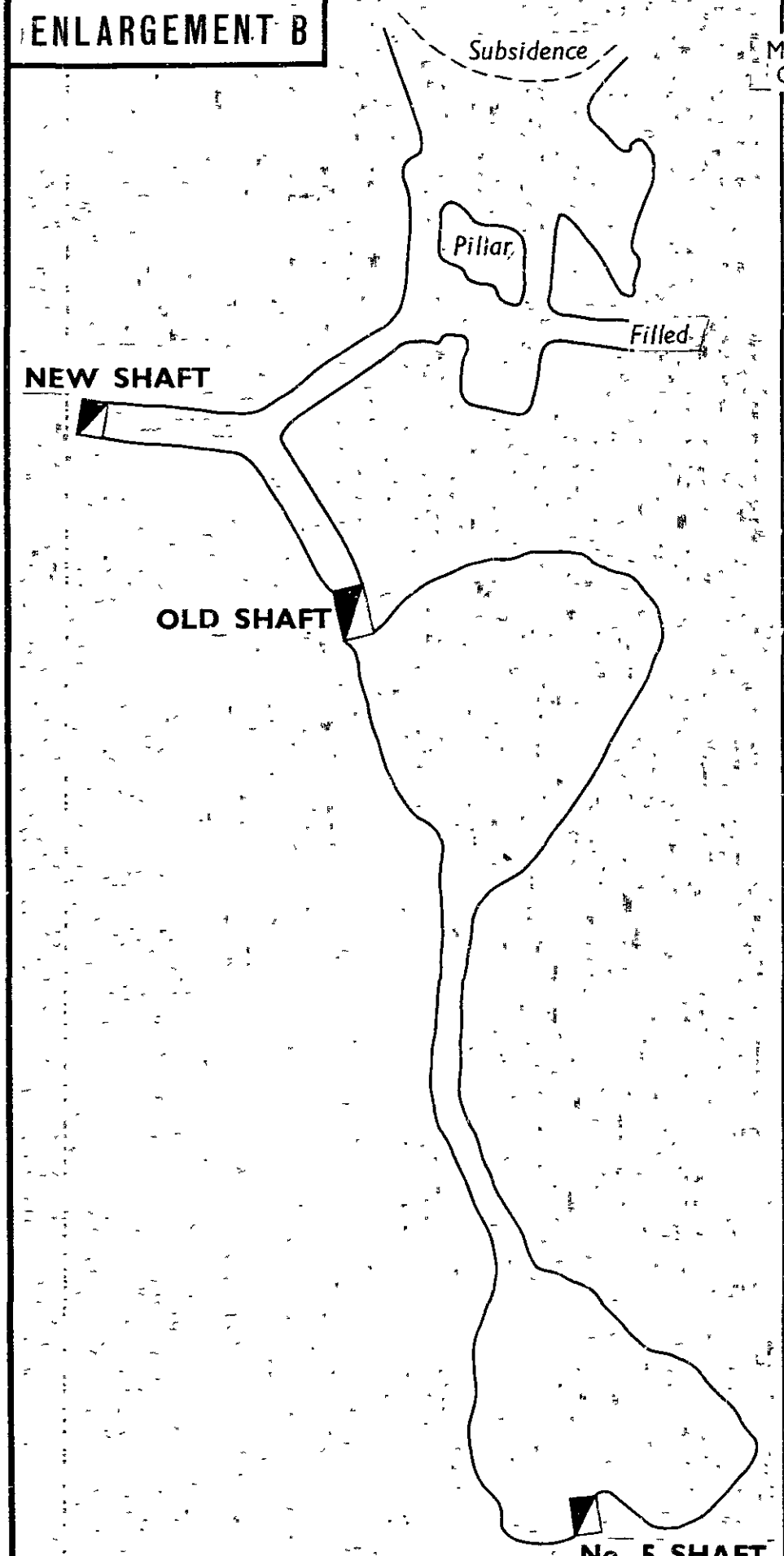

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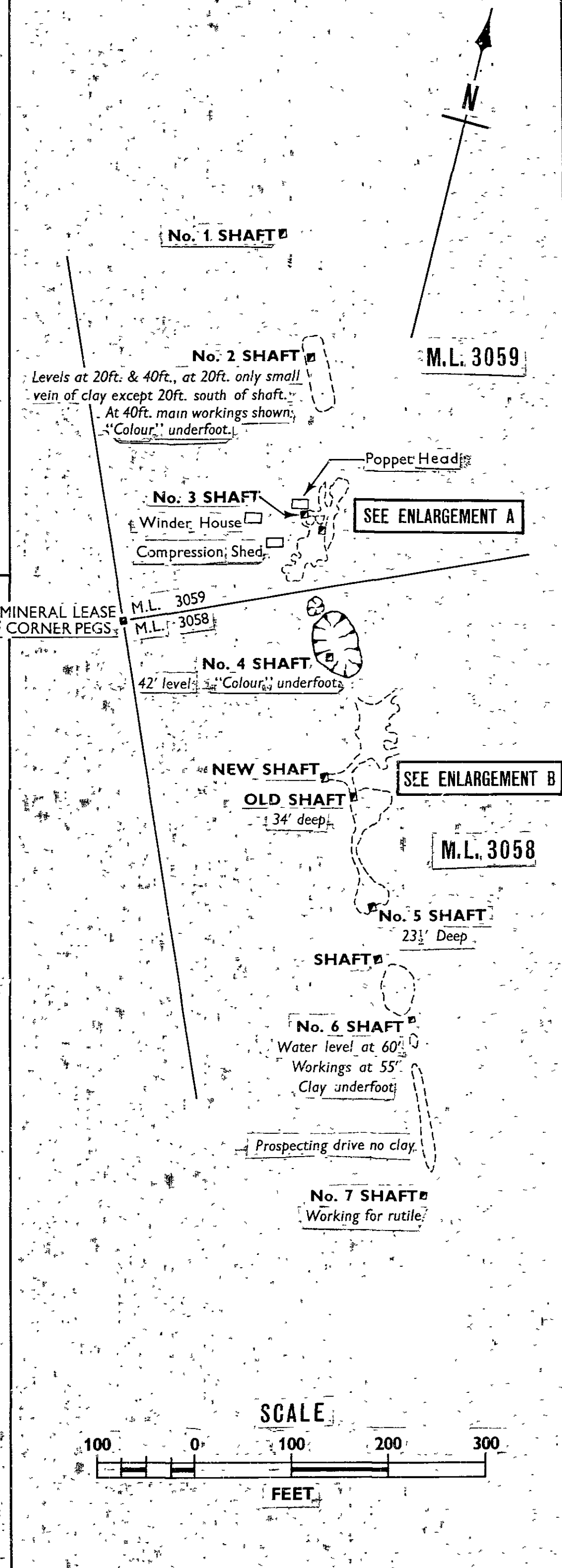

SCALE

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FEET

60-623 L.G. Nixon, Geologist S.A. Dept. of Mines