DEPARTMENT OF MINES
SOUTH AUSTRALIA

GEOLOGICAL SURVEY

GEOPHYSICAL SECTION

Report on

RADIOMETRIC SURVEY OVER DAVIDITE PROSPECT,

SECTION 328, HUNDRED OF JUTLAND

by

D. R. Dowling
Student

and

E. Moorcroft
Geophysicist

Rept. Bk. 50/209
G.S. 1771
D.M. 1850/58
Geoph. No. 4/60

30th June, 1960

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RIB 50/209

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60-326 Locality Plan
Detailed locality plan showing grid and areas of anomalous radioactivity.

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SUMMARY:

A ground scintillometer survey was carried out over a davidite prospect in section 328, Hundred of Jutland. Two small areas of anomalous radioactivity were noted. It is not considered likely that these occurrences are of economic significance but a geological examination is recommended.

INTRODUCTION:

The prospect is situated in section 328, Hundred of Jutland, eight miles east of Mount Pleasant. The outcrop in the area has been extensively mapped and some laboratory tests have been made on the davidite.

The purpose of the survey reported here was to check for radioactivity, both the areas where rock is outcropping, and those lightly covered by soil and alluvium.

The survey was carried out by D. R. Dowling, and the report written by E. Moorcroft.

PREVIOUS GEOPHYSICAL WORK:

Before this survey, the only geophysical work in this area was a geiger counter survey by M. L. Norton, the discoverer of the prospect. This apparently produced no significant results.

GEOLOGY:

The area has been mapped by E. R. Hillwood, Report D.M. 1850/58.

The prospect is situated at the northern end of an elongated body of diopside gneiss which is flanked by schists, gneisses, migmatites and veined gneisses of the Kanmantoo Group. These are bordered on the east by a narrow band of marble and

associated calc-silicate rocks which form the edge of the Palmer fault block. The Scott Hill granodiorite forms a parallel ridge one mile to the east and the Palmer granite lies to the south.

The diopside gneiss is a medium to coarse grained rock with two well developed jointing systems. Occurring in it are minor quartz and pegmatite veins and also remnants of hornblende schist.

The uranium bearing mineral is davidite which appears to be associated with the pegmatites. It occurs in sporadic rich pockets along both borders of the vein and in contact with the diopside gneiss. Hillwood concluded that the diopside gneiss formed a suitable environment for the occurrence of uranium mineralization but that the exposures so far examined are far from a commercial proposition.

METHODS USED:

The grid was laid out by theodolite and tape, three parallel base lines being surveyed. These were designated A, B and C. The distance between A and C was 2,324 feet. Traverses were spaced at 50 foot intervals. The area was traversed using a vehicle travelling at 4 m.p.h. In inaccessible places the traversing was done on foot. The instrument used was a La Roe scintillometer. No daily check was made of the drift of the instrument but it was later found to be of the same order as the daily variation in the field.

RESULTS:

The survey revealed two small areas of anomalous radioactivity. The first on traverse 2 at 507' from baseline A, the second on traverse 19 at 1088' from baseline A. In both of these areas the bedrock is covered by soil and the increased count is not very much above background. Both areas have been marked by pegs.

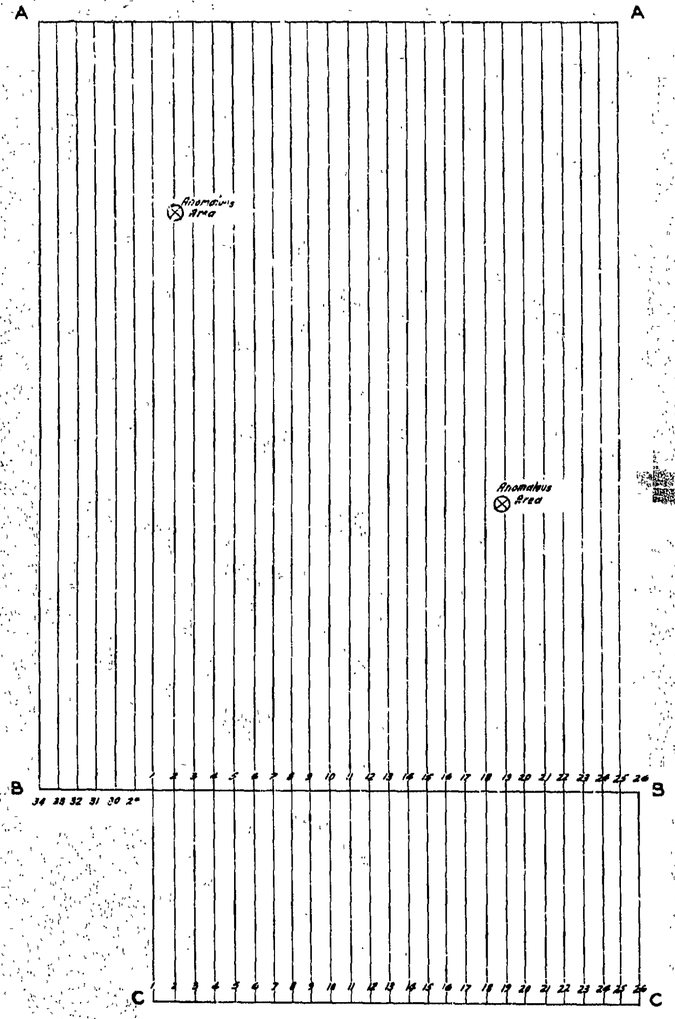
CONCLUSIONS AND RECOMMENDATIONS:

It is unlikely that the slight increase in radioactivity denotes a worthwhile uranium deposit. It is considered however that geological opinion should be obtained with respect to the two areas previously mentioned. In order to carry out this geological examination it would be necessary to remove the overburden and expose the bedrock. If this is done then further scintillometer readings should be taken.over the exposed outcrops.

D. R. DOWLING
Student

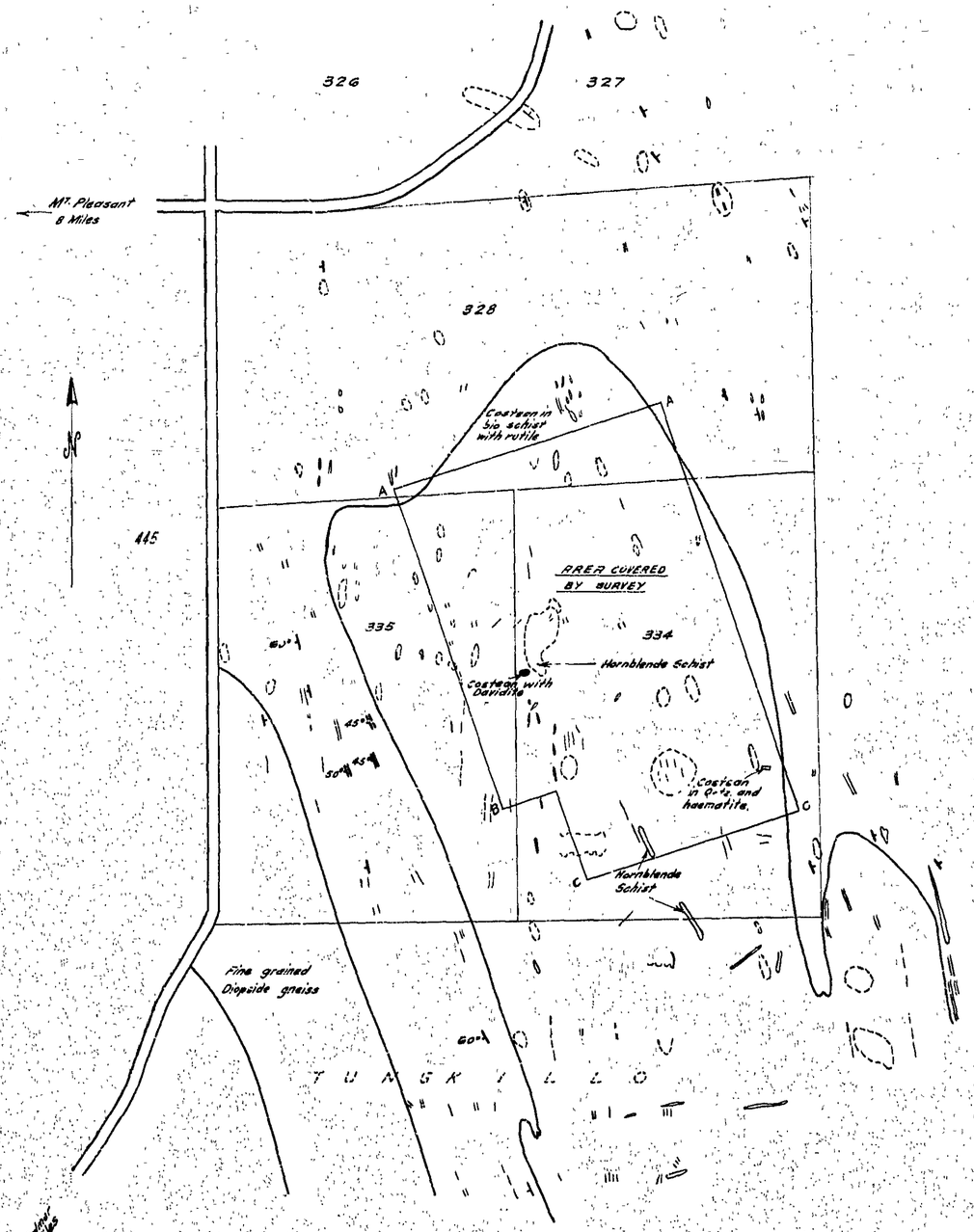
E. MOORCROFT
Geophysicist

EM:CERF
30/6/60



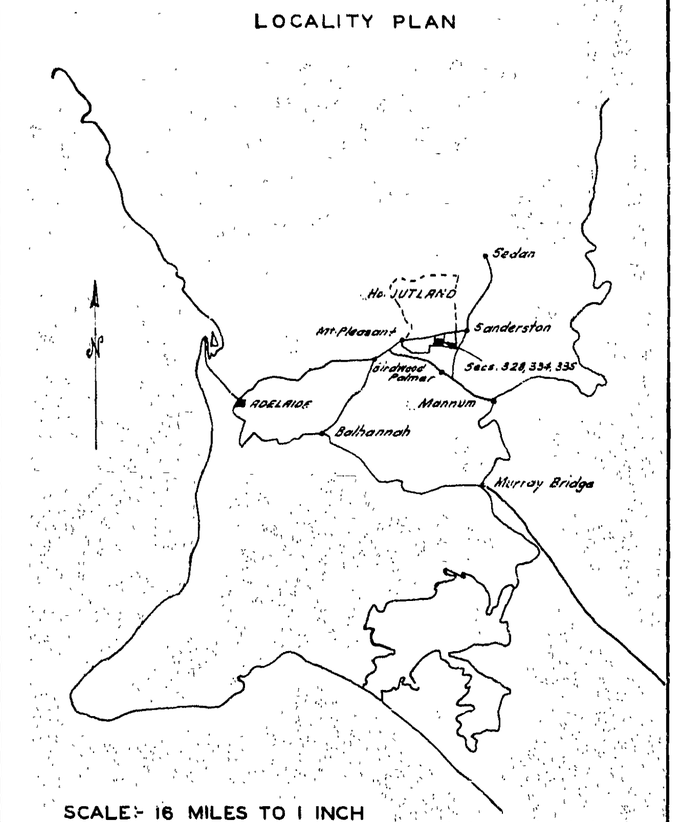
GEOPHYSICAL GRID SYSTEM

SCALE:- 250' TO 1"



PLAN

SCALE:- 500' TO 1"



LEGEND

Diopside Gneiss

Kanmantoo Group, Schists Gneisses etc.

Larger Outcrops

Quartz & Pegmatite Veins

Strike & Dip of Bedding 45°

To accompany report by E. Moorcroft

S.A. DEPT. OF MINES

400—7.58 2917

Associated Drawing	No.	No.	Amendment	Exd.	Date

Req. No.
D.M.
Compiled from

DAVIDITE PROSPECTS
HD. JUTLAND SECS. 328, 334 & 335
GEOLOGICAL PLAN AND RADIOMETRIC SURVEY

Approved	Passed		Scale : As Shown
		Drn. E.M.	60-326 Hb1
Director of Mines		Tcd. A.O.W. Ckd. M.B.L. Exd.	Date 20-6-60