Section

DEPARTMENT OF MINES
SOUTH AUSTRALIA

Rept.Bk.No. 62/77
G.S. No. 3422
Hyd. No. 1773
D.M. No. 1678/65

GROUND WATER PROSPECTS

Sections 29, 32-34 and 46, Hd. Haslam

- A.F. Beinke -

REQUIREMENTS

Advice on the prospects of obtaining a supply of ground water for stock; an estimated minimum of 4 to 5,000 gallons per day is required.

LOCATION AND TOPOGRAPHY

Situated some 12 miles east of Wallanippie and about 8 miles north west of Haslam, the property lies in a sand dune covered area. These dunes are orientated north of west with elongated inter-dune flats between them. There is a very gentle rise to the east but the maximum difference in elevation would not be more than 65ft.

A drainage pattern has not been noticed and therefore the drainage is internal.

The area is lightly timbered with the native scrub and trees. A small portion has been cleared for pastures and wheat growing.

Annual rainfall is low and probably not more than 11 inches, most of which falls in the winter months.

HYDROGEOLOGY

Basement rocks consisting of granite are not outcropping in the vicinity of applicant's property. Granitic rocks have been penetrated in a number of boreholes in the district and therefore

they probably form the basement. In these boreholes the granites are overlain by a thick sequence of their own weathering products which in turn are often overlain by a thin veneer of lateritic Tertiary Sands. These sands are also not found in the immediate vicinity, but were found in the spil of wells some 20 miles further north east. These Tertiary sands are overlain by recent sediments, the upper part of which consist of blown sands. These aeolianites from the fixed sand dunes.

Good quality ground water has not been obtained in the district. Some occurs in the lateritic sandstone overlying the basement rocks. Where it was located the saline content was high and in the order of 8,000 parts per million, being suitable for beef cattle and sheep only. This type of water occurs in the vicinity of local depressions in which rainfall accumulates and where the accumulated water percolates downwards and reaches the aquifer. Such favourable places have not been located on applicant's property and therefore the prospects of obtaining good quality water are remote.

There is a possibility that there is a limited accumulation of downward percolating rainfall below the larger sand dunes. Therefore it may be warranted to drill a test borehole at the foot of one of these dunes. If, during the drilling, clays with quartz grains are encountered before ground water is encountered, drilling should be discontinued, as below these granitic weathering products saline water only can be expected. It must be borne in mind that drilling to obtain a water supply is speculative in this area.

The maximum supply obtainable from a 6 inch borehole is about 150 gallons per hour and therefore less than the minimum quantity required.

CONCLUSIONS AND RECOMMENDATIONS

Good quality water does not occur in this area. Stock-quality water containing as much as 8,000 parts per million (550 grains per gallon) may be obtained in areas where the local rainfall finds its way to the aquifer. Favourable sites have not been located.

Drilling to obtain a groundwater supply is speculative and is warranted only in the immediate vicinity of large sand dunes where there is some better chance that downward percolating rainfall reaches the Tertiary lateritic sandstone.

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