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20th August, 1945.

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MEMORANDUM:

REPORT ON PROPOSED UNDERGROUND WATER SUPPLY FOR STATE SCHOOL, WHITEMARK, FLINDERS ISLAND.

Reference: Memorandum from Director of Mines to Government Geologist, 10th July, 1945.

Introduction:

Whitemark School is situated at the inner margin of the Coastal plain, a mile and a half north east of Whitemark. A sketch plan of the allotment is attached. Domestic water for the Teachers' residence is obtained from roof catchment. Additional water supply is required to water a school garden. A small creek in the adjoining property to the north flows permanently and water could be piped by gravitation without difficulty from this creek to the garden site but the water is much too saline for this purpose. A well site was selected by a "diviner" adjacent to the garden (see plan) and this is stated to have bottomed in hard slates at about 20 feet without water.

Geological Conditions:

The School is situated on a coastal plain about 60 feet above sea level. Immediately to the ENE of the school a ridge of granite rises from the plain. The school area is on colluvial soil with a gentle piedmont slope away from the ridge. Within the school boundary the granite gives place to slates, the line of contact being obscured by detritus. The granite is jointed and deeply weathered, and a number of gravel pits have been opened in it on the hill immediately above the school. Pliocene foraminiferal limestone occurs as an encrusting veneer on the fringe of the granite hill east of the school. The weathered granite is porous and permeable and should be a satisfactory aquifer. The slates are compact and are unlikely to carry water except in joints.

Possibility of Water Supply:

In this requirement the emphasis is on quality rather than quantity. A water supply is probably available overlying the slaty bedrock at the NW corner of the block, but this is likely to be too saline for the watering of plants. Water of better quality may be expected in the weathered granite at the eastern corner of the block, without danger of contamination by the highly saline creek water to the north. A site in this vicinity has the advantages that gravitation is possible to any part of school grounds, there is little risk of pollution and the well would be in the remotest corner away from the childrens playing area and could easily be fenced off and made out of bounds to them. Since the local prevailing winds are from the south west (as indicated by the attitude of the trees on the adjacent hill slopes) it is necessary that the well should be on the west of the pine thicket, otherwise I would locate the well a little higher up in the extreme eastern corner of the block.

A well is indicated rather than a bore in order to give maximum yielding surface. The rate of supply might be sufficient from a bore in this spot. The well should be sunk to solid bedrock which is

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expected within twenty feet, but may be a little deeper. A layer of cream-coloured limestone may be met at the top of the rock, for it occurs in the vicinity as encrusting patches at the bottom of the drift. If this is encountered the well should be driven through it for it will not be thick. If the granite is rotten and crumbly as in the gravel pits on the hill east of the school, the well should be sunk to the hard rock, for the water supply is expected at the bottom of this weathered granite.

S.W. CAREY

GOVERNMENT GEOLOGIST.

Director of Mines,
HOBART.