

DEPARTMENT OF MINES
SOUTH AUSTRALIA

Rep.Bk.No. 19/103
EWS891/43

PROSPECT OF OBTAINING UNDERGROUND WATER

Sections 118,119 Hd.Belvidere

Mr. A. B. Kleinig, Koonunga

Advice is desired on the prospect of obtaining a supply of water from underground sources by boring or well-sinking, which is to be used for stock, and if possible for irrigation purposes. The only supply available at present is from three dams - all of which were nearly empty at the time of the inspection.

The rocks underlying the property are almost entirely concealed by alluvium. Where the rocks do outcrop, as in the beds of St. Kitts and Heusler's Creeks, they consist of mica, and quartz - mica - schists. Small isolated outcrops of rocks occur along the low ridge which crosses the property, and in these places, the rock is a crystalline limestone (marble). The disposition of the marble clearly indicates that geological faulting has occurred in the region.

The schists are not usually regarded as being a good aquifer or water-bearing formation, for on decomposing they form a clay which is carried down into any cracks or joints in the formation by percolating ground water and seal them up. Exceptions occur where these rocks have been considerably shattered by geological faulting - the ground water in such instances being stored in the shatter-zones.

Owing to the extensive cover of the alluvium flanking both the creeks mentioned, it is extremely difficult to locate the directions of the faults noted in the region under review. However, even if the exact positions of the faults could be fixed, it is very doubtful if the quality of any water which may be stored in the fault-zone, would be suitable for irrigation purposes, although a good stock water.

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A sample of water, collected from a large waterhole in

the St. Kitts Creek has been analysed, the result of which indicates that the water contains 342.2 grains of total salts per gallon. This water is too saline for irrigation purposes, although quite good for stock, including horses.

The analysis of a sample of water collected from a well in the extreme southern corner of the property under review indicated that the water contains 403.70 grains of total salts per gallon, being therefore more saline than the water in St. Kitts Creek.

The writer is of the opinion that the only place within the boundaries of the property examined where there is any prospect of obtaining a supply of water that may be suitable for irrigation purposes, is about midway along the north-western boundary of the property where evidence was noted suggestive of the presence of a spring. This possibly is a leakage from an aquifer (a fault zone) adjacent to the bed of marble referred to above. The exact spot "A" has been marked by some stones near some reeds. It is suggested that a well be sunk on the spot indicated to a depth of from 25 to 30 ft. to test the nature of the underlying rock. Further development will depend on the results of the sinking.

A site for a trial borehole "B" has been selected on the south side of Heusler's Creek and about 20 chains from the south-eastern road boundary. The bore should pass through the alluvium into the upper weathered zone of the underlying bed rock. Drilling should stop when the water table has been struck and a sample of the water collected for detailed chemical analysis and report, before deepening is proceeded with.

Another site for a well "C" has been selected on the northern bank of St. Kitts Creek south-east from the house and opposite a waterhole in the creek. The well should be sunk to below creek level and into the weathered zone on the underlying schists and a drive then cut in the direction of the creek.

It is recommended that touch be kept with this Department during any of the operations suggested above, so that further advice can be given if desired.

8.4.43

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