DEPARTMENT OF MINES
SOUTH AUSTRALIA

Rept. Bk. No. 19/247
EWS.2314/43

# REPORT ON GROUNDWATER PROSPECTS

## Section 85, Hd. Brinkley

- Mr. W.G. Hinton -

Advice is desired on the prospect of obtaining a supply of water from underground sources to be used for the irrigation of stock fodders.

The nature of the underground (geological) structure of the country in the vicinity of the property under review is entirely masked by a deposit of sand, sandy-clays, sand ridges and travertine limestone.

Many years ago, a borehole was drilled adjacent to the crossroads at the northern end of the Section and the driller's log records that the drill passed through sand, sandy-clays, fossil rock, and entered bedrock (granite) at a depth of 278ft. The record of the borehole, however, is very imperfect with regard to the groundwaters struck. Salt water (3 oz.) is stated to have been cut at 53ft.; and a second aquifer at 78ft. is stated to have been 2½ oz. water. No further reference is made to any groundwaters below the 78ft. level. The writer suspects that groundwaters do occur however, in the fossiliferous sands etc. overlying the bedrock.

Furthermore, the two upper saline waters recorded, were tested by a salinometer which method of testing waters is far from satisfactory. Unfortunately no chemical analysis of the water was made.

During the inspection of the property, the attention of the writer was drawn to a patch of red bottlebrush (honey-suckle) in a large depression near the south-eastern corner of the property. On Eyre Peninsula, and in other parts of the State, this particular bush growth is only known to exist adjacent to "fresh water". It is suspected, therefore, that a shallow fresh water "suspended basin" occurs beneath the bottlebrush depression.

It is recommended that a shallow pit (or posthole) be sunk in the centre of the "brush" flat. The pit of trial borehole should be taken down to the water table only. A quart sample bottle of the groundwater should there be collected and forwarded to this Office for detailed chemical analysis and report. It is not expected that the yield from such a pit or borehole will be large, but it is suggested that if the water table is shallow and if suitable quality lucerne could be grown on the flat without irrigation.

The second recommendation is that a trial borehole be drilled to test the groundwaters down to bedrock. The site of the trial hole should be near the bottlebrush referred to above. In the drilling of the trial hole it is most important for the driller to keep a very accurate log of the strata passed through, retaining representative samples of all the beds passed through indicating their thickness etc. Furthermore quart sample bottles of all waters truck (even if only soakage waters) must be collected, carefully labelled, stating depth cut, height to which the water rises and estimated supply. The samples of water (and strata) should be forwarded to this Office as soon as possible after having been collected.

6 If touch is kept with this Office during drilling operations further advice will be given if desired.

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