Author

DEPARTMENT OF MINES
SOUTH AUSTRALIA

GEOLOGICAL SURVEY
HYDROLOGY SECTION

REPORT ON DRAINAGE PROSPECTS

Pt. Section 95, Hd. Noarlunga.

Town Planner (for F. Hoffman).

by

R. G. Shepherd,
Asst. Senior Geologist.

4th November, 1964.

DEPARTMENT OF MINES
SOUTH AUSTRALIA

Rept.Bk. 59/109
G.S. 3005
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REPORT ON DRAINAGE PROSPECTS

Pt. Section 95, Hd. Noarlunga.

Town Planner (for F. Hoffman).

This area was inspected on 28.10.64

REQUIREMENTS

Advice on the suitability of the proposed sub-division with regard to drainage of septic tank effluent and size of allotments.

LOCATION, TOPOGRAPHY

Situated approximately ½ mile south of Aldgate the proposed subdivision occupies an area of hilly country rising to more than 1,500 feet above sea level. The property is partly cleared and is drained by a small creek trending westerly. There is approximately 50 feet difference in elevation from the highest part of the property to the lowest, and the average gradient of the land surface is about 1 in 9.

Average rainfall in the area is approximately 40 inches per annum.

GEOLOGY AND HYDROLOGY

Rocks occurring in the area consist mainly of sandstone with occasional thin shale beds, dipping south easterly at 15°-20° and forming part of the Aldgate Sandstone of the Torrensian Series (Adelaide System). The sandstone is felspathic and near the surface it has weathered to a relatively friable rock. The shale where it occurs is also partly weathered with the formation of clay. There are few outcrops as the rock is generally covered by 1-2 feet of soil.

The soil consists mainly of a yellow brown silty clay with numerous fragments of quartz and sandstone. As the slopes are moderate and the area is well covered by vegetation, soil creep and erosion are not important. Clearing of the area could be expected to cause increased erosion in view of the high rainfall.

Groundwater occurring in the area is of good quality, often less than 300 p.p.m. (21 grains per gallon). Water of higher salinity is usually obtained in the shales.

Drainage of septic tank effluent into pits sunk into the weathered zone of the sandstone is expected to be relatively good. The soil itself is unlikely to provide much drainage as it is generally clayey and would tend to become saturated, particularly in winter.

There will be a tendency for drainage towards the central creek and within the proposed subdivision it is unlikely that drainage within one block will affect another. The possible exception is allotment No. 11 where there would be a tendency for drainage into lots 9 and 10. It may therefore be preferable to make allotment No. 11 a reserve.

CONCLUSIONS AND RECOMMENDATIONS

It is expected that relatively good drainage of septic tank effluent could be obtained by sinking shallow pits on each allotment. These pits should be continued into the weathered zone of the sandstone as it is probable that the soil zone would provide only very limited drainage. As it is possible that effluent drained into a shallow pit on allotment No. 11 could emerge at lower levels on lots 9 and 10, it is suggested that No. 11 be made a reserve.

Because of the relatively low gradients within the proposed subdivision, soil creep and erosion are not likely to be significant, particularly if a plant cover is maintained.

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RGS:EMD
4.11.64.