

UR1975-75

Groundwater prospects near Dodges Ferry.

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Mr J. Christie requested an investigation of the groundwater prospects at three localities in the Carlton-Dodges Ferry area. Water is required for gardens.

Quaternary sand and clay deposits are underlain by Triassic quartz sandstone at each site. The sand is partly of aeolian origin, while the clay is derived from the underlying sediments.

Site A [EN517537] owned by J. Christie, is a gently sloping 2 ha property on Lagoon Road, 0.7 km north of Carlton Beach. Triassic sandstone crops out west of the property boundary and is probably present at shallow depth beneath it. Cobbles of sandstone are common on the site. The aeolian cover sands are thin and in places absent, and impervious clay occurs at a depth of about 0.5 m. Parts of the site are marshy and poorly drained, and a small spring occurs near the northern boundary.

Groundwater may be obtained from the Triassic sandstone, but drilling is not recommended because of the high cost, the possibility of failure and the probable marginal quality of the water. Small quantities of groundwater are probably present where the cover sands are thickest, but the supply is likely to be unreliable. It is recommended that surface and shallow seepage water be utilised by excavating a small dam in clay at the lowermost eastern part of the site. Water should be channelled into the dam by a series of shallow drains.

Site B [EN498538] owned by R.E. Wood, is a small (0.1 ha) property in Lenteena Street east of Red Ochre Beach. The property is generally flat, and is covered by aeolian sand, and clayey sand derived from Triassic rocks. An auger hole adjacent to the existing house penetrated 2.5 m of sand and bottomed in clayey sand. The water table occurred at 2.2 m. Unweathered sandstone is probably present at shallow depth.

Small amounts of groundwater occur in the sand. Its usefulness as a garden supply depends on the thickness of saturated sand present (which probably shows a large seasonal variation) and its extent over the site. The presence of clay in the sand reduces the permeability and the yield of the aquifer.

It is recommended that a test pit be excavated by back-hoe to a depth of 3-4 m to establish the material present. If a sufficient depth (at least 0.5 m) of saturated sand is present, and water percolates freely into the excavation, it should be cased with large diameter concrete liners. The resulting well will probably deliver sufficient water for gardening, but its yield may be reduced during the drier months. The water should not be used for domestic purposes as it may be contaminated with effluent from a nearby sewage outlet.

Site C [EN499539] owned by H. Barlow, is a steeply sloping 0.2 ha block in Lenteena Street. Most of the land is covered by at least 1.5 m of aeolian sand, and clayey sand derived from Triassic sandstone. Sandstone crops out in the eastern part of the site and in excavations beneath a residence under construction. Water from small seepages is presently collected in a sullage trench, one metre deep, excavated in sand west of the house. The cover sands are probably too thin and irregular to contain a useful water supply. Provided that health regulations are not violated, it is suggested that surface runoff and shallow seepage be collected in a shallow concrete lined well

excavated at one end of the existing sullage trench. The water should only be used on gardens.

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