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Groundwater prospects at Dodges Ferry.

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An investigation into groundwater prospects on Tiger Head, Dodges Ferry was made at the request of L.E.V. Ford. The property (approx. 0.1 ha) is one of a series of building allotments on the headland. It slopes gently eastward with the lower part about 2 m above sea level. A fresh water swamp some 50 m east of the property boundary drains southward to Red Ochre Beach, and lies about 1 m above sea level. Water is required for domestic and garden purposes.

GEOLOGY

Most of Tiger Head is covered by an uneven blanket of Pleistocene(?) and Recent sand which overlies Jurassic dolerite. The dolerite intrudes and overlies Triassic sediments which are exposed at sea level on the northern side of the headland.

AUGERING

A number of shallow auger holes was drilled at the lower end of the property. The sequence recorded is:

Depth (m)	*Description*
0-0.1	Topsoil
0.1-0.5	Saturated grey muddy sand
0.5-0.8	Brown clay
0.8-1.4	Saturated grey muddy sand
1.4- ?	Brown clay

Some of the water encountered may have been derived from french drains and a septic tank outlet on the property.

DISCUSSION AND RECOMMENDATIONS

Fresh water in sufficient quantities for the uses envisaged is present on the property. Although the catchment area is small, infiltration rates of the sands on Tiger Head are high, and the underlying dolerite acts as a relatively impermeable barrier. In addition, the saturated sands underlying the nearby swamp contain large quantities of water. Contamination from the swamp is considered unlikely since the sands, over a distance of some 50 m, act as an efficient filtering system. Care should be taken, however, to site any bore or well as far as possible from the septic tank.

Deeper augering (to about 3 m) is recommended to establish the sequence of sands and clays on the property. Samples of water and sand should be collected for analysis. The water may finally be obtained by pumping from a well or spear bore. The former is considered more likely to be successful. Larger diameter excavations have higher storage capacities per depth of aquifer penetrated, resulting in lower rates of groundwater flow and thus minimising the danger of silting and clogging of the hole. A spear bore may be difficult to place in position because of the presence of hard clay layers. It will be necessary to line the well, preferably with large-diameter concrete piping. Low, uniform pumping rates should be employed.

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