

URI975-25

Groundwater investigations at Woodbridge

W.C. Cromer

The Woodbridge Hotel [EN195213] stands on a small headland projecting into Peppermint Bay in D'Entrecasteaux Channel. Water is obtained from roof runoff, and a shallow well to the north of the building, but present supplies are inadequate for toilet and domestic uses. Messrs Buchanan and Oddie requested that the groundwater potential of the land (1.2 ha) be investigated.

The hotel property is underlain by Permian (Ferntree Formation) sandstone, which also crops out beneath the Woodbridge Jetty, and extends north along the coastline. The rock dips approximately 15° S. Jurassic dolerite is exposed at sea level 100 m south of the hotel, and Helliwells Point is underlain by this material. Some distance west of the Channel Highway, a major fault trending approximately north-east has thrown Permian tillite against the Ferntree sandstone. Small pockets of terrestrial sand, gravel and clay have accumulated near the mouths of Masons and Schemers Creeks, and parts of the hotel property are composed of fill and rubble.

Permian rocks are considered reliable supplies of groundwater. Yields of the order of 30 l/min can be expected at depths of less than about 35 m: at greater depths water-bearing fractures tend to be sealed by the overlying weight of rock. The water is normally of average quality, and may not be suitable for drinking purposes unless diluted with surface supplies.

A bore drilled on the south-west corner of the property near the Channel Highway will probably be successful. It is unlikely that the groundwater will be affected by salt-water contamination. The presence of the fault (and the resulting change of rock type) west of the hotel may affect the subsurface movement of groundwater, but it is difficult to determine whether its influence will be beneficial or detrimental. If during drilling the bore remains dry to a depth of 35-40 m, it should be abandoned. If the bore is successful, the water should be analysed for its chemical and bacteriological content before use.

[9 April 1975]