

UR1974-33

Test pits on land owned by D.J. Proctor, Quarantine Road, Launceston.

W.L. Matthews

Mr Proctor owns a block of land [EQ147089], situated in the eastern part of Quarantine Road, on which he intends building a house. He requested advice on the stability of the area.

#### TOPOGRAPHY AND GEOLOGY

The block, which slopes at an angle of about 15°, lies between an extensive flat area (above) and a more gently sloping area (below). The difference in altitude between the flat area and the more gently sloping area is about 8 m in the vicinity of the block.

The flat area forms part of a terrace underlain by sand, gravel and some clay. Clay and sandy clay of Tertiary age probably underlie these deposits but exposure is poor.

Two test pits were dug near the top of the slope but it was not possible to dig near the foot of the slope because of the recent installation of underground services and as recent rains had made the surface too slippery for the back-hoe to go down the slope. Test Pit 1 was situated 2-3 m below the level of Test Pit 2.

#### RESULTS OF TEST PITS

##### Hole 1

###### Depth (m)

0-1.2	Soil and fissured dry hard clay.
1.2-2.4	Partly compacted poorly sorted sand and gravel, some mica. Pebbles in gravel up to 50 mm across, limonite cemented zone at 2.1 m.

Gravel and sand beds are dry.

##### Hole 2

###### Depth (m)

0-1.0	Brown clayey soil.
1.0-1.2	Clayey brown soil grading to clay.
1.2-1.7	Fissured hard grey clay, some small areas of iron oxide staining.
1.7-1.8	Grey sandy clay.

All the above material was very hard so that excavation to greater depths was not possible.

#### DISCUSSION OF STABILITY

The block is near the boundary of two areas; one of which is regarded as stable and the other potentially unstable. The main part of the block is underlain by very stiff clay and partly compacted gravel and these probably occur to the foot of the steeper slope. As the slope flattens to the north-east and east of the block, the land is probably underlain by clay of which there are some signs in the gutter along the road. There are also two springs just east of the block which suggests near-surface clay in this area.

Although the block is near the margin of land with some potential for instability there is probably only a small risk of it being affected.

If development proceeds, it is suggested that the house be built as far to the rear of the block as possible where the gravel will be thicker. The trees at present on or near the block should have a stabilising effect. Drainage along the foot of the steeper slope should be good and water should not be allowed to accumulate in the soil in this area.

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