

1976/54. Investigation of a proposed reservoir site at Legana.

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As part of the West Tamar Water Supply scheme, the Rivers and Water Supply Commission proposes to construct a reinforced concrete reservoir near Legana. The structure will be about 34 m in diameter, 6 m deep, and contain 5500 m³ water. The proposed site [EQ031202] is a small circular hill about 60 m above sea level and 300 m west of the West Tamar Highway.

GEOLOGY

The proposed site is near the western edge of the Tamar Graben, and is wholly underlain by Tertiary sediments. These do not crop out, but surface scree and exposures in shallow drains and tree roots, indicate that the sediments consist of clay, sandy clay, partly consolidated pale yellow-brown sandstone, ironstone concretions, and lateritic horizons. The dip of the rocks is unknown. Two hundred metres west of the site, and at about the same elevation, large dolerite boulders crop out on a relatively flat hilltop. A buried pre/post Tertiary fault trending north-west separates the two hills. It passes through the intervening saddle, from which a spring drains the Tertiary sediments.

Slope angles near the site range from moderate (6-8° on the eastern and northern flanks) to high (13-15° on the south-western and western flanks).

CONCLUSIONS

The detailed stratigraphy of the Tertiary sediments of the site is unknown. The area has been mapped as a Class III landslip zone (fig. 1) indicating that although there is no evidence of landslip, the ground is potentially unstable. Development on such areas is subject to special building codes.

RECOMMENDATIONS

There are two alternatives:

- (1) The proposed site could be studied in more detail. This would involve subsurface investigations such as test pits, or preferably diamond drilling, to establish the stratigraphy of the Tertiary sediments and to enable a more definite assessment to be made of their stability and hydrological properties.
- (2) Another site could be selected. On economic and geological grounds this is the preferred alternative. Dolerite bedrock crops out 200 m west of the proposed site, at a similar elevation, on gently sloping Class I land. It is suggested that the reservoir be constructed there.

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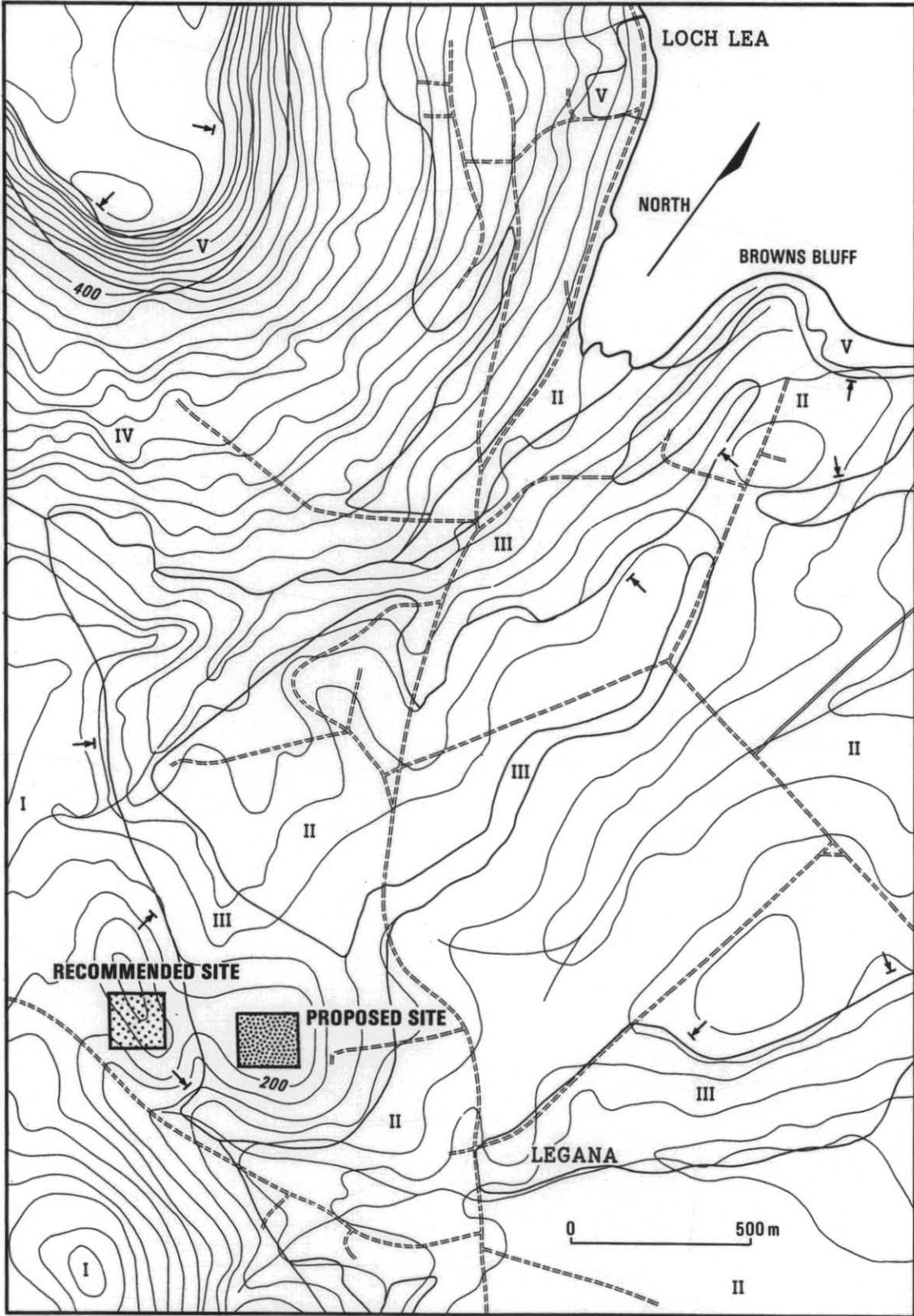


Figure 1. Location of reservoir sites at Legana.

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