TASMANIA DEPARTMENT OF MINES
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Examination of possible landslips, North Riverside and Deviot

by C. J. Knights

The Rivers and Water Supply Commission requested advice on two matters involving landslips, or potential slips, affecting the West Tamar Water Supply.

- Riverside North: The 18" main pipeline is located on the top edge of a recently used quarry, and the RWSC wished to know whether there was any danger of land movement.
- Deviot: There was a small diameter asbestos pipeline in an area where there was land movement, and the RWSC wished to find the best method of securing the pipeline.

Riverside North — Recently used quarry

The quarry, adjacent to the West Tamar Highway about 1.5 km north of North Riverside, has been excavated to an angle which is far steeper than its previous slope and it is not considered to have long-term stability.

The lower part of the quarry consists of clayey sand and cemented ironstone, which should be able to stand at a high angle. However the upper part of the quarry, possibly 30 m in all, consists of stiff clays. These clays will be undergoing stress relief after quarrying, which will cause fissuring and allow increased moisture absorption. Failure of this slope may be expected, initially as shallow surface slides, but with the possibility of deep slips in the future.

It is suggested that the pipeline be relocated on the basis that the upper, clay part of the slope (approximately 30 m), will be stable at its original slope angle of 17°.

Further work to locate this position will be done by this Department if requested.

It is essential for the stability of the slope that it be revegetated.

Deviot — Land movement in the vicinity of an asbestos pipeline

Land movement is occurring on a very low slope angle due to the aggravating effect of water coming from the adjacent road drain. This movement should be halted by continuing the drain, as a pipe, to further down the valley, preferably right to the shoreline. This part of the asbestos pipe should be replaced by a pipe of stronger and more flexible construction.

[1 October 1975]

APPENDIX 1

Riverside North quarry

Further work has been undertaken in this area, and more accurate measurements of slope angles have been made.

It was stated in the previous investigation that the overall angle of the original slope was 17°. On the adjacent undisturbed slopes, this angle is made up of two slopes and a middle flat bench. The upper slope is between 25° to 30°, similar to the slopes in the adjacent borrow pit.

The unexcavated slopes are considered to be only marginally stable with signs of shallow slips and soil flow, but not of deep slips.

At present the excavated slope is eroding rapidly, and has many gullies of over one metre deep. Shallow landslips are likely to occur and there is a slight possibility of a rotation slip.

Whilst the slope is in its present unvegetated and hence unprotected state, the slope may be expected to retreat rapidly. It is essential that a thorough revegetation program should be undertaken. While the slope is unprotected it is difficult to predict its rate of retreat, or its natural stable angle. If the slope is revegetated then angles of 25° are not unreasonable, and the pipe could be relocated on the basis of a safety margin of 15 to 20 metres from the edge of the pit.

[4 November 1975]