

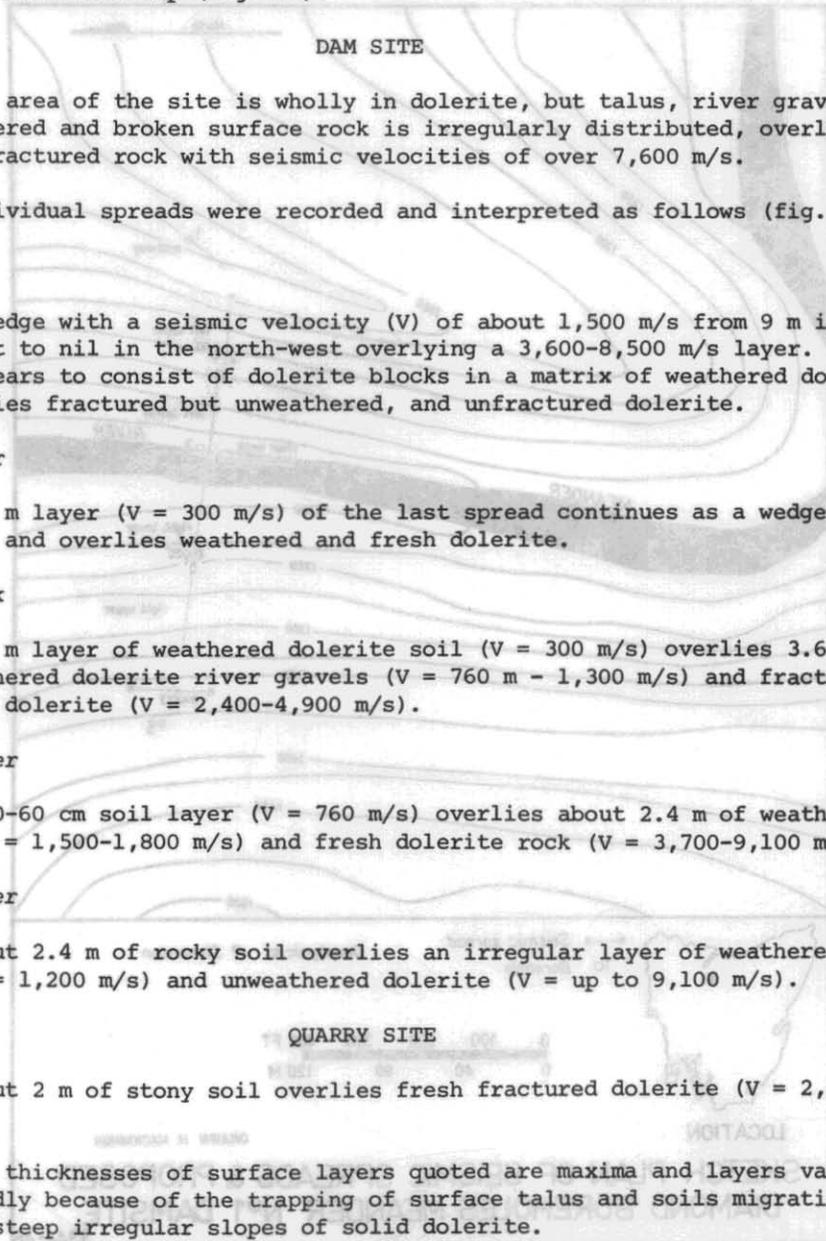
TR15.91-92

24. Seismic survey, Meander No.1 dam site

P.C. Stevenson

This report supplements a previous report (Stevenson, 1971). It describes work carried out on 13-15 April 1970 in accordance with a request from Rivers and Water Supply Commission.

Seven spreads of 12 geophones, 40 m long were observed in the positions shown on the sketch map (fig. 21).



The area of the site is wholly in dolerite, but talus, river gravels and weathered and broken surface rock is irregularly distributed, overlying solid unfractured rock with seismic velocities of over 7,600 m/s.

Individual spreads were recorded and interpreted as follows (fig. 21):

*Spillway*

A wedge with a seismic velocity (V) of about 1,500 m/s from 9 m in the south-east to nil in the north-west overlying a 3,600-8,500 m/s layer. The wedge appears to consist of dolerite blocks in a matrix of weathered dolerite and overlies fractured but unweathered, and unfractured dolerite.

*Left Upper*

A 1 m layer (V = 300 m/s) of the last spread continues as a wedge from 1.2-7.6 m and overlies weathered and fresh dolerite.

*River Bank*

A 1 m layer of weathered dolerite soil (V = 300 m/s) overlies 3.6-4.5 m of weathered dolerite river gravels (V = 760 m - 1,300 m/s) and fractured but fresh dolerite (V = 2,400-4,900 m/s).

*Right Lower*

A 30-60 cm soil layer (V = 760 m/s) overlies about 2.4 m of weathered blocks (V = 1,500-1,800 m/s) and fresh dolerite rock (V = 3,700-9,100 m/s).

*Right Upper*

About 2.4 m of rocky soil overlies an irregular layer of weathered talus (V = 1,200 m/s) and unweathered dolerite (V = up to 9,100 m/s).

QUARRY SITE

About 2 m of stony soil overlies fresh fractured dolerite (V = 2,400 m/s).

The thicknesses of surface layers quoted are maxima and layers vary very rapidly because of the trapping of surface talus and soils migrating down the steep irregular slopes of solid dolerite.

A basement of solid dolerite exists everywhere and high seismic velocities indicate few open joints.

Five diamond boreholes are recommended to check the surface layers

and the condition of the basement dolerite at the positions indicated. They should be fully cored, pressure tested in solid rock at 3 m intervals and should be taken 20 m into the bedrock.

REFERENCE

STEVENSON, P.C. 1971. Preliminary report on the geology of the Meander River River No. 1 dam site. *Tech.Rep.Dep.Mines Tasm.* 14:67-70.

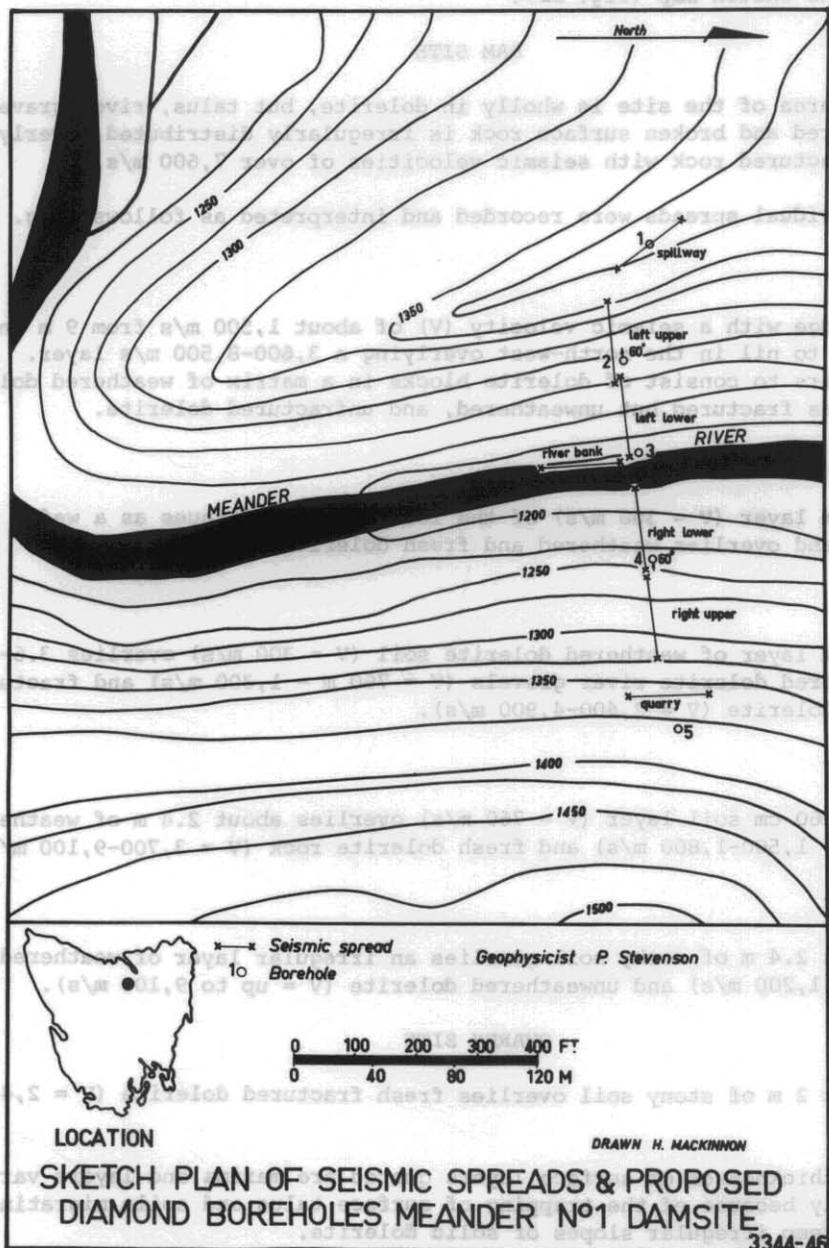


Figure 21.

