

5 pages.

COMMONWEALTH OF AUSTRALIA

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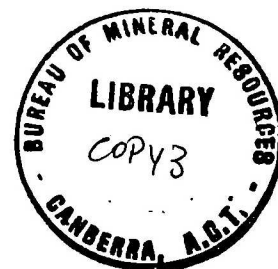
BUREAU OF MINERAL RESOURCES,  
GEOLOGY AND GEOPHYSICS.

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RECORDS

1957, No. 75

SEISMIC REFRACTION SURVEY (1957) OF THE LATROBE RIVER DAM SITE,  
YALLOURN, VICTORIA



by

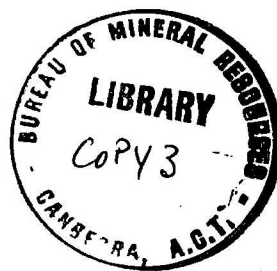
E.J. POLAK

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## 1. INTRODUCTION.

A seismic refraction survey of the proposed Latrobe River dam site was carried out on behalf of the State Electricity Commission of Victoria in November, 1956 (Wiebenga, Polak and Hawkins, 1957). In response to a request from the Commission for further information, two additional traverses (OP and RS) were surveyed in July, 1957 (see Plate 1).

The geology of the area is described in the earlier report referred to above, and no additional geological information has become available since that report was written.

The seismic refraction method was again adopted, and a Midwestern shallow reflection-refraction seismograph was used, with T.I.C. Geophones of natural frequency 20 cycles per second. For the underwater traverse OP, T.I.C. geophones with spherical floats connected to the geophone cable were used.

## 2. RESULTS.

The results obtained along traverse RS are shown in the form of a cross-section on Plate 2.

On the right (western) bank, the alluvial deposits are characterised by seismic velocities ranging from 1,000 to 3,500 ft/sec., and overlies shales and siltstones, referred to in the drill logs as "hard oxidised rock", with a seismic velocity of 6,500 ft/sec. The seismic velocity in the unweathered rock below this layer is about 9,000 ft/sec.

On the left bank, weathered rock with a seismic velocity of 3,500 ft/sec. is covered by soil of about 1,000 ft/sec. velocity; there is an estimated one foot of soil near station 8 and 4 feet near station 12. The unweathered rock has a seismic velocity of 8,500 ft/sec.

Along traverse OP, in the river, the thickness of the mud was found to range from an estimated zero at stations 10, 11, and 12, to three feet at station 1. The unweathered rock along this traverse has a seismic velocity between 10,500 and 11,500 ft/sec.

Seismic velocities corresponding to the different rock types were found to be the same as those recorded in the earlier survey, and the values of Young's modulus for the unweathered rock are therefore the same as those quoted in the earlier report.

## 3. REFERENCE.

- Wiebenga W.A., Polak E.J., - Seismic refraction survey of  
and Hawkins L.V., 1957 the Latrobe River Dam Site,  
Yallourn, Victoria. Bur. Min.  
Resour. Aust., Records 1957/23.