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Seismic survey of a possible extension of Thureau's Lead, St Helens.

D.E. Leaman

Detailed geological mapping of an area about 4 km west of St Helens was carried out following an application for land. The area is adjacent to a sharp bend in Thureau's Lead and a continuation or tributary of that lead might occur there. The position of the area examined may be found by reference to Jack (1964, fig. 19) and lies about 1.6 km north of B.H. 16 and 1.9 km east of B.H. 34.

The mapping revealed a few outcrops of granite but could not determine whether Tertiary materials were present or whether granite occurred at shallow depth. To resolve this problem seismic refraction spreads were fired in the region between known outcrops. A total width of 500 m was examined and the results are summarised below:

South section

Layer	*Velocity* (m/s)	*Thickness* (m)	*Interpretation*
1	600-700	3-5	Soil, weathered granite.
2	1,800-3,000	15-17	Fractured, weathered granite.
3	6,000-7,000	-	Massive granite.

North section

1	600-700	6-10	Soil, weathered granite.
2	2,300-2,800	15-20	Fractured, weathered granite.
3	3,500-5,000	-	Relatively massive granite.

No velocities were found in the range 1,500-1,700 m/s which is normal for Tertiary sediments and other equivalent unconsolidated materials, including decomposed granite. The boundary between layers 2, 3 and 1, 3 was found to be irregular confirming the absence of alluvial cover or deep weathering and showing a typical and irregular granite weathering profile. No lead or continuation extends into the area examined.

REFERENCE

JACK, R. 1964. Thureau's Deep Lead, St Helens. *Tech.Rep.Dep.Mines Tasm.* 8:63-71.

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