Where $Vint_n$ = ITT for reflecting horizon n, ft/sec.

V_n = RMS velocity for layer n, ft/sec.

V_{n-1} = RMS velocity for layer (n-1), ft/sec.

t_n = Two-way time to layer n, sec.

t_{n-1} = Two-way time to layer (n-1), sec.

$$1/Vint_n \times 10^6 = \text{ITT, microseconds} \;\ldots\ldots\; \text{eq. 2}$$

The ITT when plotted with depth will produce a "synthetic acoustic log" which can be readily compared with that derived from the wireline acoustic log. The ITT plots show that velocity increases exponentially with depth in normally-compacted sediments. The "normal compaction trend" through the shale points which form a linear trend on the plot can be identified. Any departure from this normal trend is caused by the presence of geopressured formations and/or gross changes in lithology. There is no accurate way to separate shale from other lithologies when using seismic velocity data. Therefore since the influence of these other lithologies can adversely affect the interpretation of a seismic pressure plot, all available geologic and other subsurface information should be integrated into the evaluation. The accuracy of ITT plots will also depend upon the quality of the seismic data, and the use of high resolution seismic data will enhance the prediction of a shallow geopressured interval.