

Correlations from limited core suggest that very low permeability occurs when porosity falls below 13 percent.

Based on the best core data available, reservoir sands with good porosities and permeabilities exist. However, low production rates may be because ^{of} migrating fines, clay plugging or formation damage caused by drilling.

2.4.4 Formation Pressures and Over Pressures

Drilling and development problems associated with overpressure may be significant in determining the economic prospects of deeper plays in the Bass Basin.

Drilling has been stopped in several wells, notably Pelican 1, 2 & 4 and Poonboon 1, when a 500 psi overbalance between formation pressure and bore hole pressure could no longer be maintained with a 12 ppg mud weight. Good hydrocarbon shows, however, were still being encountered within the overpressured zone in Pelican 4.

Figure 2.16 plots RFT shut in pressure versus depth below MSL. In Pelican 4 it shows:

- * that normal hydrostatic pressure gradient exists to -8800' MSL, ie. 0.44 psi/ft which is typical of brackish water depositional environments
 - * a lithostatic pressure gradient exists between -8800 and -9800 MSL (1.02 psi/ft)
 - * a zone of significant overpressure exists below -9800' MSL
- The top of the lithostatic zone gradient coincides with