

5.2 HYDROCARBON GENERATIVE POTENTIAL

5.2.1 Source Rock Richness

Nicholas and others (1981) analysed 27 core samples from the basin, including the Otway Group. The highest recorded value is 20.1 percent TOC in the EVCM (coals excluded) with an average of 3.51 percent overall. The average for the EVCM is 4.0 percent T.O.C. All stratigraphic intervals (Torquay Group, Demons Bluff Formation, EVCM and the Otway Group) contain greater than 0.5 percent T.O.C. and can be considered as potential source rocks.

Based on the samples studied, the EVCM (below the Lower M. diversus zone) are ranked as good to very good source rocks whilst the EVCM above the M. diversus Unconformity are ranked as fair to good source rocks.

A cross-plot of total hydrocarbon content against total organic carbon content shows the overall source rock quality of measured formation samples (See Figure 5.1).

5.2.2 Source Rock Quality

Different source rock types are prone to produce different hydrocarbons. Table 5.2 simplifies the general conclusions of Nicholas and others (1981) concerning the type of hydrocarbons which would be produced by each formation.