

Petroleum Geology Conference and Exhibition 2008

14th – 15th January 2008 • Kuala Lumpur Convention Center, Kuala Lumpur, Malaysia

Poster 5

THE GEOGRAPHIC AND STRATIGRAPHIC DISTRIBUTION OF CORED-SECTIONS IN THE MALAY BASIN

WAN M KHAIRUL ANUAR WAN SULAIMAN, AZMI MOHD YAKZAN AND SHAMSUDIN JIRIN

PETRONAS Research Sdn Bhd, Lot 3288 & 3289,
Off Jalan Ayer Itam, Kawasan Institusi Bangi, 43000 Kajang, Selangor

The sediments in the Malay Basin can be seismically differentiated into 'Groups' bearing the alphabets A to M; A being the youngest and M being the oldest. Due to the effects of Middle-Late Miocene tectonic inversion, the area in the south was gradually uplifted, resulting in most of the younger stratigraphic sections to be eroded. Whereas, in the north, where the effect of the inversion is minimal, a thicker sections of younger stratigraphic sections are preserved.

The early phase of exploration activities targeted reservoirs from older stratigraphic sections, mainly located in the south Malay Basin. After 1970, exploration activities gradually shifted towards the north, as more concessionaries open. The main targets are mostly the gas pay horizons from younger stratigraphic intervals. Naturally, the distribution of the cored-sections in the Malay Basin follows this exploration drilling pattern.

This paper shows the geographic and stratigraphic distribution of cored-sections based on the inventory of data from over two hundred wells (Chart 1, 2). These charts provide a quick assessment of the depth of well penetration and length of cored-section, stratigraphic tops, gross lithology and core availability within each stratigraphic unit.

It can be observed that most cored-section in Groups I,J,K,L and M are from wells located in the south. For younger stratigraphic units such as Groups D and E, the cored-sections are available from the wells located in the northern area of the basin. The stratigraphic units having the most cored-section are Groups E, I and J. The least cored-sections are Groups F and M. It can also be observed that approximately one half of the cores was either not described or the data were not available. The deepest cored-section is recorded within Group L at 2783m from Angsi-1, while the shallowest core was cut from Group A/B at 254m in Bekok-4.

The charts also depict the gross lithology of the cored-section. This is represented as colour bars which also reflect the general lithological succession and facies association. They enabled a quick evaluation of gross lithofacies in the cored-section from different stratigraphic units within and across wells. In general, the cores were mostly cut from predominantly sandy lithology associated with the major reservoir pay horizon. The exceptions are in Group D of Noring-2 and 3. In this case, the cored-sections are mainly within clay interval. Some cores cut through several coal horizons. The major ones are in Group J of Bunga Pakma-1 and Group E of Jerneh-3