

The integration of reservoir characterization and seismic study of the West Patricia field, Balingian Province, offshore Sarawak

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West Patricia field is located about 48 km NNW of Bintulu in about 40 m of water. The oil in West Patricia field was discovered by drilling West Patricia-2 well in 2000 by Murphy Sarawak Oil based on 3D seismic data. The well tested oil in B7 sand and gas in B9 sand of Cycle III interval and gas, condensate and water in C-sand of Cycle II interval. The field was further appraised by drilling West Patricia-4 and 5RD in 2001 and 2002, respectively. To date, a total of four oil reservoirs (B5.5, B7, B8.5 and B8.9 sands) and six gas reservoirs (B4, B4.2, B4.8, B5, B8 and B9 sands) were discovered in Group B interval alone within a total depth of less than 1200 m TVDSS. Murphy will proceed with the development of West Patricia in 4Q 2002 with the first oil production targeting for April, 2003.

The integrated studies in West Patricia field were conducted following the availability of more information such as conventional core data (the core was cut in B7 sand of West Patricia-4 well), hydrocarbon characterization using FMI logs calibrated to core and the seismic studies such as Spectral Decomposition Frequency and Phase Analysis. The regional geochemistry study for SK-309 and 311 which was conducted in 2000 and also geochemistry studies conducted for each well are also available but they are not part of this paper.

Core and Facies Interpretation, Log-Core calibration of B7 core, log analysis of all West Patricia wells and Geochemistry studies were all conducted by PRSS while the characterization of hydrocarbon reservoirs using FMI logs and FMI to core calibration were done by Schlumberger Data and Consulting Services. Porosity and permeability data of Routine Core Analysis and capillary pressure data of SCAL were conducted by Core Laboratory.