
Temana Jacket-W development — an intergrated approach

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The Temana Field is situated in the northeast of the Balingian Basin, some 30 km west of Bintulu, offshore Sarawak. Its main prospective sequence, of early Miocene age (Cycles II and III) consists of fluvial channels and flood plain sequences deposited in a narrow low relief coastal/ deltaic plain environment.

The area of interest (Blocks 54/99 in the northern part of Temana Central) was originally planned to be developed by three wells with an expected ultimate recovery of 4.7 MMbbls. The primary development objective was the 160 fluvial channel reservoir which was interpreted to have a WNW/ESE orientation based on sparse appraisal well data.

An infill 2D seismic survey was acquired over the Blocks 54 and 99 area in August 1989 with the objective to optimise the development well locations and fault pattern. The seismic interpretation led to changes in the structural map. This indicated, together with the subsequent drilling of appraisal well TE-59 and detailed reservoir geological evaluation, including dipmeter studies (indicating a N/S channel trend), the presence of a combined stratigraphic and structural closure at 160 reservoir level. As a result expectation reserves increased from 4.7 MMbbls to 12.7 MMbbls. Consequently, the project scope was increased to six wells.

Drilling results of the six TEJT-W development wells confirmed the geological interpretation and the reserves estimate. The results demonstrated the importance of an integrated approach to development planning of small fields. Proper understanding and uncertainty assessment of both the structural configuration and sedimentological model has been essential to optimise the development plan for this complex field.

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