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APPLICATION OF COHERENCE CUBE TECHNOLOGY AND SEISMIC ATTRIBUTES IN RUBY FIELD

The Ruby oil field which is located in the north-eastern end of the Cuu Long basin offshore South-east Vietnam was discovered by Ruby-1X well in 1994. The primary objectives are the Early Miocene transgressive sandstones and the fractured Pre-Tertiary granite basement. A 3D seismic survey with a full fold area of 272 Sq.Km was acquired in 1995 and was processed by the conventional post-stack time migration sequence.

The seismic data quality was considered as moderate. The seismic data interpretation was carried out and completed in 1997 when nine horizons were mapped. Besides the structural interpretation, an extensive work in the seismic attribute analysis was carried out but the results were not encouraging.

With the aim of optimally locating the development wells in the Ruby field, the Coherence Cube technology (CCT) was utilized in the field in June 1998. The study mainly focused on the essence of the technology and in determining the most suitable data interpretation procedure. Based on the 3D seismic reinterpretation using the Coherence Cube processed data, the structures for both the Miocene and the Basement reservoirs have been constructed with a higher confidence level and detail. The prospective fracture zones inside the Basement have been identified and outlined.

The Coherence Cube data have been applied to identify and to outline the areas of good quality Early Miocene sand; the results were encouraging but in some places the confidence level was too low. In order to improve the probability of identifying the distribution of good quality sand, an extensive and integrated seismic attribute study was carried out. The results showed that integrated Coherence and amplitude attribute clearly images the distribution of good quality early Miocene sand. Based on this study the location and primary target trajectory of ten (10) development wells including four (4) wells into the Basement have been selected, and the results of the drilling proved to be encouraging.

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