Integration of Unconventional Seismic Attributes and Geomechanical Analysis for Fractured Reservoir Characterization in Block M3, Offshore Myanmar

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ABSTRACT

Pre-stack seismic inversion is often applied in combination with rock-physics analysis to carry out reservoir characterization studies. However, in areas with a complex geological setting the application of such methods can be more challenging. This is the case in block M3, offshore Myanmar, where volcanic rocks are considered as one of the main reservoirs. A seismic reservoir characterization study suggested that hydrocarbon discovery was dependent on particular volcanic facies in the area, which were pyroclastic and brecciated lava. However, the original reservoir model could not fully explain the variations of gas production in these facies types. Additionally, past well results indicated that, besides lithology, fractures also played an important role for gas production. To improve the understanding of the reservoirs, an integrated quantitative study for fractured reservoir characterization was initiated. The objective was to identify areas of natural fractures and locations where hydraulic fracturing can be considered in the future.