Role of 3-D Seismic Data in Prediction of High Potential Areas within Pre-Tertiary Fractured Granite Basement Reservoir in Cuu Long Basin, Vietnam offshore

Huy Ngoc Nguyen, Nguyen Quoc Quan, Ngoc Dong Hoang, and Ngoc Nhi Nguyen Do Exploration, Thang Long JOC, Ho Chi minh City, Viet Nam.

Currently the Pre-Tertiary fractured granite Basement is considered as the primary objective in Cuu Long basin in particular and in Vietnam in general, which contributes more than 70 % of oil production from total production of the Cuu Long Basin. The fresh granite is considered as none reservoir rock with almost zero porosity, it becomes reservoir only when it was strongly fractured. Based on experiences of exploration, appraisal & production from this particular reservoir type the following three main fracture characters will contribute to the success of the wells, which are fracture density, aperture and direction of opened fractures and connectivity of different fracture systems. Prediction of these fracture characters in the Granite basement is very complicated problem. In the last time, based on application of new technology in 3D seismic data processing, seismic imaging of faults and associated fracture inside the granite basement has been significantly improved and the prediction of fracture characters using seismic data integrated with geological and logging data has achieved some encouraged results.

In this paper the authors would like to present the role of 3D seismic data especially seismic attributes in prediction of three above mentioned fracture characters, workflow of using 3D seismic data integrated with other geological and logging data to predict high potential fracture reservoir areas within a certain basement structure. We also would like to present good consistency between the predicted and well results.