Remaining Oil Prediction Based on Geological Methods

Changmin, Zhang, Yin Taiju, Zhang Shangfeng, and Wang Zhenqi, Yangtze University, Jingzhou, Hubei, China

Comprehensive geological analysis as an efficacious method, is widely used to predict remaining oil in China. The effect of this method depend on the reservoir model and the detailed understanding of production of the reservoir. In the studying of Shuanghe Oil Field, Nanxiang basin,Chian, a practical process for remaining oil prediction is summarized,whichincludes the following steps: 1 founding the reservoir architectural model, 2 analyzing the developing characteristics of the reservoir based on the basic architectural elements and 3 predicting the high remaining oil distribution areas through the production analysis. Geological data base should be developed before the founding of reservoir model, in which such things as the correlation of the lithofacies and well log, the geometry character parameter are included in the geological data base. Reservoir architectural model is established based on the outcrop analysis and densely spaced well development area, and the characteristics of model are analyzed. The studying shows that there are obvious differences in the liquid and oil production, water injection and the controlled level in different architectural elements. The connecting patterns are also an important factor that influences the subsurface fluid flow. Subaqueous distributery channel sandbodies, which are always with larger scale and good properties, are poor in remaining oil; gravity flow sandbodies and over-bank sandbodies are rich in remaining oil for its smaller scale and poor properties. Small scaled mouth-bar sandbodies can also be rich in remaining oil when they are not controlled by present well-net. Sheet sand are also rich in remaining oil for its poor properties though they are always widely spread.