The Research of Composite Reservoir Evaluation under the Control of Palaeogeomorphology

Linjun Huang ¹, Jianguo Pan ¹, Dongtao Wei ¹, Yanjun Wang ¹, and Peijun Li ²
¹Research Institute of Petroleum Exploration & Development-Northwest (NWGI), Petrochina, Lanzhou, China.
²Petrochina Xin Jiang oilfield company, Karamay, China.

Base on the fine analysis of 3D seismic data, some detailed researches have been done on the composite system under the control of Palaeogeomorphology in XQ block, Xinjiang Jungar basin Beisantai salient with the key technologies of palaeogeomorphology recovery, integrated reservoir prediction and lithofacies identification, etc. The Palaeogeomorphology feature of Carboniferous residuum controls the distribution of clastic reservoir-Wutonggou sand, so we predicted the distributed regularity by means of AVF inversion and clustering of multi-attribute. We thought the Wutonggou sand have the features of palaeohigh supplied sand, monadnock aparted sand and the valley gathered sand. Below the Wutonggou team, the volcanic reservoirs along the Carboniferous residuum should be controlled by lithofacies and palaeohigh. In XQ block, the different reservoir rocks are continuously distributed widthways and overlaid vertically. the oil reservoirs have the characteristics of multi-sources, multi-stages and multi-type overlapping. The exploration prospect of the area is good for it is the most important area of the next reservoir evaluation, and also it would be the replacement area of the scales reserve and the deliverability development.