The Characteristics of the Sandy Debris Flow of the Triassic Yanchang Formation and its Exploration Significance in the Ordos Basin, China

Xiangbo Li, Zhao Yingcheng, Huaqing Liu, Wan Yanrong, and Lihua Wei
Research Institute of Petroleum Exploration and Development-Northwest (NWGI), PetroChina, Lanzhou, China.

The sandy debris flow is a new genetic kind of sand body, which is a partial deny and improvement to the deep water sedimentolgy such as the Bouma Sequence and deepwater fan. Due to the significant control to the hydrocarbon accumulation in deep water, the sandy debris flow is drawn more and more attention from the geologists. Based on the large amount of the core data, field observations and analysis as well as seismic sequence interpretation, three kinds of sediment-gravity flows (the sandy debris flow, the classic turbidite and the Slumps) were identified from the Chang 6 formation of the Triassic Yanchang formation in the deepwater area at the center of the ancient Ordos basin lake, of which the first discovered sandy debris flow is dominant and oil prone, whereas the classic turbidite is limited in distribution, which indicate previous study about deepwater sedimentation of the Yanchang formation may overrated the turbidite sedimentation. Further study suggests that the wide distributed thick deep water sediment-gravity flows sand bodies, the distribution of which is mainly controlled by the lake slope break, have favorable accumulation conditions and will be the most important exploration area in the Ordos basin.