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## Characteristic of Migration and accumulation of oil and gas of Fuyang reservoir in Changyuan and the west area, Daqing, Songliao Basin, China

Shi Lizhi, Zhang Yongsheng, Xing Enyuan, Peng Yuan

MLR Key Laboratory of Saline Lake Resources and Environments, Institute of Mineral Resources, Chinese Academy of Geology Sciences, Beijing 100037

Daqing Changyuan is one of the main production area of Songliao Basin. In recent years, Fuyang reservoir exploration in Daqing Changyuan and the west area has achieved good results. In order to clarify oil and gas migration and accumulation characteristics and distribution of the Fuyang reservoir, this paper applied geology, rock core, logging, well logging, testing, and seismic data, use Petroleum system theory as a guide, on the basis of structure, oil source, reservoir, cap layer and fracture analysis, this paper carried out the sedimentary and reservoir research, analysis the oil source and evaluate hydrocarbon source rock, recovered the excess pressure and fluid potential, divided of oil and gas reservoir types, analysed the main control factors of the oil and gas accumulation, established the accumulation model, predicted deposition and oil and gas zone.

The results shows that Fuyang reservoir is low permeability reservoir, sand body types and diagenesis are main control factors of reservoir physical properties, dissolution pores can improve physical properties of reservoir. oil source correlation shows that Fuyang reservoir oil & gas mainly comes from the overlying Qing-1 hydrocarbon rocks, with a short distance migration and accumulation characteristics and the source have good hydrocarbon generation ability. At the same time, Qing-1 source rock is good regional cap layer of Fuyang reservoir. In the late period of the Mingshui Formation deposition., Qing-1 source rocks buried deepest, the excess pressure is the biggest. Oil and gas which Qing-1 source source rocks generated migration along active faults or cracks down to Fuyang oil layer. This period oil and gas had the maximum under irrigation thickness, the buried deepest in the plane is the deepest under irrigation thickness. Mingshui formation is the key moment of oil and gas accumulation. From late Mingshui Period to today, oil and gas have multi phase injection period. Fuyang reservoir fluid potential low potential area (Qijia Gulong depression surrounding areas) is the favorable area of oil and gas accumulation. The sandstone have good property that Qing-1 oil source rocks injection down to Fu Yang oil layer vertical hydrocarbon expulsion and Fu Yang reservoir lateral hydrocarbon migration path through (in a thick layer of river sandstone) is the favored oil and gas accumulation reservoir. Fu Yang formation have lithologic reservoir and structural-lithologic reservoir, lithologic reservoir is the main type. Oil and gas under the row of thick Degree, fluid potential and reservoir are the three main controlling factors for hydrocarbon accumulation, and the main controlling factors are used to predict the favorable hydrocarbon zone is 3, the area is 5474 km<sup>2</sup>. The predicted favorable to area only 1 with 3952 km<sup>2</sup>.

**Keywords:** Daqing Changyuan; Fuyang reservoir; hydrocarbon accumulation; excess pressure; fluid potential.

