Abstracts: In this article the author use the data of acoustic travel time, systematical analysing the abnormal pressure distribution obtained by equilibrium depth method (Hunt, 1990; Qiu et al., 2014) in the lower assemblage of Yanchang formation 151 well bores in the middle area of western Ordos Basin, combined with the distribution patterns of hydrocarbon reservoir discovered in the researched region, the relationship between abnormal pressure and distributions of reservoir is disclosed. Abnormal pressure of Chang 7 reservoir group in researched region is generally more than 8MPa, most of the region is more than 16MPa, in some areas (such as the Fengdikeng, Jiyuan, northwest of Tiebiancheng and southeast of Wu Qi) of more than 24MPa. Abnormal pressure as a whole has trend of gradually decreasing along the Northwest-Southeast from the middle to both sides (Fig.1). Chang 8 reservoir group compared with Chang 7, abnormal pressure is overall low, most regions is 12MPa below, abnormal pressure of in some areas (for example, Jiyuan, Southwest of tiebiancheng) excess 16MPa (Fig.2), mainly due to abnormal pressure of Chang 7 reservoir group. Abnormal pressure profiles (Fig.3) study of DING 1188 Well-DING 4986 Wells found that Chang 7 is the largest abnormal pressure distribution layer (greater than 20MPa), generally more than 25MPa and mainly concentrated on the lower part of Chang 7, which have good continuity, length more than 110 km; abnormal pressure of Chang 8 reservoir group is smaller in the whole, most of region is smaller than the 15MPa; between Chang 7 reservoir group and Chang 8 reservoir group exists the higher abnormal pressure difference. Oil layer formation of Chang 7 and Chang 8 in the wells of the study area were abnormal pressure (Fig.1, Fig.2), oil-bearing formation of lower Chang8 exist universally the higher abnormal pressure difference (Fig.4). Abnormal pressure difference between Chang7 and Chang8

Study on the Relationship Between Abnormal Pressure and Reservoir Distribution in Lower Yanchang Formation, Ordos Basin

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Fig. 1. Distribution map of abnormal pressure of Chang 7 oil-bearing formation in the researched region.

Fig. 2. Distribution map of abnormal pressure of Chang 8 oil-bearing formation in the researched region.

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drive for oil and gas of Chang7 hydrocarbon source rocks produced along the micro-cracks from the high potential zone migration to low potential zone. Higher abnormal pressure difference of Chang-7 oil-bearing formation has become the main driving force of oil downward migration, low pressure area of abnormal pressure of Chang-8 oil-bearing formation or relative low pressure area is trend of oil and gas migration. According to abnormal pressure difference of oil layer formation of Chang 7 and Chang 8 in the wells of the study area, the abnormal pressure difference between the two census a map (Fig.4). It can be concluded that oil-bearing formation of Chang7 and lower Chang8 exist universally the higher abnormal pressure difference, most of above of 4MPa, usually 8–12MPa or so, some areas of more than 12MPa. This study combines with reservoir capacity of the lower assemblage of YanChang formation to find better production capacity of Chang8 oil-bearing formation of Zhai zi-he oil zones, Wang Gou-men oil zones, southern oil zones of Luohe, Wu Cang-bao oil zones, Fan Xue oil zones and five-star village oil zones. More than seven oil zones are shown in Fig.4. By mean of analyzing abnormal pressure difference of oil-bearing formation of Chang 7 and Chang 8 and known better reservoir location of the lower assemblage of Yanchang formation of the study area. It can be concluded that abnormal pressure of the study area and known reservoir distribution is closely related. Most of the reservoir located in high-value areas in the context of low-value of abnormal pressure difference of oil-bearing formation of Chang 7 and Chang 8 (Fig.4).

**Keywords:** abnormal pressure, reservoir distribution, lower Yanchang Formation, Ordos Basin

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**References**


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