

论文

泌阳凹陷安棚油田核三段储层裂缝成因、期次及分布研究

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摘要:

根据定向取心、成像测井、常规岩心及薄片资料对安棚油田核三段储层天然裂缝特征进行分析的基础上,通过对20个裂缝充填物的稳定同位素测定,5组样品的声发射实验,结合岩心裂缝特征、地质构造历史等,确定出核三段地层中裂缝为区域性裂缝,以垂直或高角度张性缝为主,成组出现,产状稳定,不受局部鼻状构造控制,确定出裂缝有4个破裂期,主要破裂期为第二期。从岩石力学性质、刚性岩石分布情况和岩(砂)层厚度、构造应力场强度等方面入手,系统地讨论了控制裂缝发育的地质因素。区域应力场强度与裂缝发育程度有密切关系,是影响裂缝发育的主要外因,而岩性、岩石密度和厚度是影响裂缝发育的主要内因。采用构造滤波法、应力场模拟法、主曲率法对研究区VII、VIII、IX油组的平面裂缝分布进行了预测和评价。

关键词: [关键词: 泌阳凹陷;安棚油田;裂缝成因;裂缝期次;裂缝分布](#)

Genesis, stages and distribution of the fractures in H3 reservoir in Anpeng oil field, Miyang Sag.

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Abstract:

Based on the data of directional core drilling, FMI, routine cores and their thin sections, we have described the characteristics of H3 reservoir in Anpeng oil field, Miyang sag. By analyzing the stable isotopes of 20 fracture infillings and 5 groups of acoustic emission, combined with the studies of fracture characteristics and tectonic evolution, the fractures in H3 member were assigned to the regional fracture type which is characterized by the dominance of vertical or high angle extensional fracture, occurring in groups, relatively stable occurrences and out of the control of local nose type folds. It has been recognized that there are 4 breaking stages, of which the 2nd one is the major stage. Based on the rock mechanical properties, the distribution of rigid rocks, the thickness of sandstones and the intensity of tectonic stress field, we have systematically discussed the geological factors controlling the fracture developments. The regional stress intensity closely related to the degree of the fracture development is the major extrinsic factor influencing the fractures, while the lithology, the density and the thickness of rocks are the major intrinsic causes. The procedures of tectonic filtering, the stress field simulation and the main curvature calculation have been employed to anticipate and evaluate the areal distribution of fractures of the reservoir groups of VII, VIII and IX in the study area.

Keywords:

[Key words: Miyang sag; Anpeng oil field; causes of fractures; fracture stages; distribution of fractures](#)

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