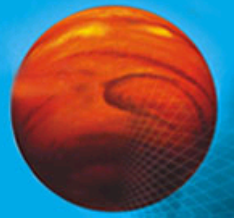




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两种不同沉积环境下火山岩储层成岩作用研究

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Influences of diagenetic effects on volcanic rock reservoirs under two different sedimentary environments

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摘要 基于三塘湖盆地石炭系火山岩储层的岩石类型、储集空间特征研究, 识别出该区存在陆上喷发沉积和水下沉积2种环境。并通过岩石心描述、铸体薄片和扫描电镜微观显示以及元素分析等手段, 重点从成岩作用的角度对这2种环境下火山岩储层的发育特征及影响作用开展研究。研究认为, 各种成岩作用对火山岩储层起到了不同程度的影响作用。该区陆上喷发沉积的火山岩受沸石和绿泥石填充较强烈, 后期又遭受风化淋滤作用, 使得储层发生明显的改善; 风化强度与储层改善有着密切关系。水下沉积的火山岩储层改善主要受有机酸溶蚀作用影响, 其原生孔隙不发育, 但发育大量的基质溶孔。对水下沉积火山岩储层发育机理的认识, 为今后火山岩油气藏勘探指出了新的领域。

关键词: 火山岩储层 成岩作用 风化淋滤作用 水下沉积 三塘湖盆地

Abstract: According to the studies of rock types and reservoir space features of Carboniferous volcanic rocks in the Santanghu Basin, there were two kinds of environments for volcanic rock generation including subaerial and subaqueous in the study area. Based on core description, casting chip, scanning electron microscopy and element analysis, the generation features of volcanic rocks under the two different environments and the corresponding influences on reservoirs were discussed from the aspects of diagenetic effects. It was concluded that different diagenetic effects influenced volcanic reservoirs in different extents. The volcanic rocks which erupted and deposited on land in the study area were severely filled by zeolites and chlorites, and then improved obviously due to weathering and leaching. The extent of weathering and leaching was closely related to the improvement of reservoir. The volcanic reservoirs which deposited under water were improved owing to organic acid erosion. Primary pores were seldom found and a large amount of matrix dissolved holes generated. The generation mechanisms of subaqueous volcanic reservoirs pointed out new areas for explorations in the future.

Keywords: volcanic reservoir, diagenesis, weather and leaching, subaqueous deposition, Santanghu Basin

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