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塔里木盆地寒武系碳酸盐岩台地类型、台缘分段特征及勘探启示

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Cambrian Carbonate Platform Types, Platform Margin Segmentation Characteristics and Exploration Enlightenment in Tarim Basin

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摘要/Abstract

摘要:

碳酸盐岩台地类型及其台缘带特征对储层的形成及储盖组合配置关系具有重要的控制作用。塔里木盆地寒武系碳酸盐岩台地经历早寒武世缓坡型台地、中寒武世镶边型蒸发台地、晚寒武世镶边型台地的演化过程,其中北部台缘为沉积缓坡型台缘|轮古—古城台缘为断控陡坡型台缘,分段差异明显|塔西南乌什—喀什—麦盖提—和田—民丰—线早寒武世为古陆,中、晚寒武世时期随着海平面上升演化为水下低隆,到晚寒武世后期可能发展成台地边缘沉积。陡坡型及缓坡型碳酸盐岩台地边缘形成不同的储盖组合。轮古东、古城地区上寒武统陡坡型加积—进积台缘储层非常发育,连通性好,盖层往往是这类台缘带储盖组合的关键,从而位于台缘带后侧、潟湖靠海—侧的礁后滩体是有利储层发育区,并且该相带储层往往上覆致密碳酸盐岩盖层,可形成优良的储盖组合|塔北西部英买7-8缓坡型台缘带储层为一套藻丘及滩体复合型白云岩储层,盖层为中、下寒武统泥晶白云岩、膏质白云岩、含泥白云岩等致密层,其储盖组合要优于轮古东、古城等地区陡坡型台缘带,勘探前景更为乐观。

关键词: 台地类型, 台缘带, 分段差异性, 塔里木盆地, 寒武系, 勘探启示

Abstract:

Carbonate platform types and features of platform margin belt play an important role in controlling the formation of reservoir and the relationship between reservoirs and caps. Cambrian carbonate platform in the Tarim Basin underwent three evolutionary processes of the Early Cambrian ramp platform, Middle Cambrian edging evaporative platform and the Late Cambrian edging platform, in which, the northern platform margin was the type of deposition, the eastern platform margin was fault controlled and the Lungu-Gucheng had obvious sectional differences. The line from Wushi-Kashi-Maigaiti-Hetian to Minfeng of the southwestern Tarim Basin were ancient lands in Early Cambrian, and they evolved into underwater lows with the rise of sea level in the Middle and Late Cambrian period, and possibly developed into a platform edge deposits in the Late Cambrian. Carbonate platform margin of steep slope and gentle slope can form different reservoir-seal assemblages. The Upper Cambrian aggradation-progradation platform margin reservoir in steep slope of eastern Lungu and Gucheng area is developed with good connectivity and whose caprock is always the key of platform margin reservoir-seal assemblages, so the reef-beach located behind the platform margin belt and near the sea side of the lagoon are favorable reservoirs, and the reservoirs are often overlain by carbonate caprock, which can form good reservoir-seal assemblages. Platform margin belt in gentle slope of Yingmai 7-8 in west of Tabei is a set of dolomite reservoir for algal mound and reef-bank complex with caprock of Middle-Lower Cambrian dolomicrite, gypsum dolomite and mud dolomite. Such dense layers, whose reservoir-seal assemblage is superior to that of eastern Lungu and Gucheng, have better exploration prospects.

Key words: Platform types, Platform margin belt, Sectional differences, Tarim Basin, Cambrian, Exploration enlightenment

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