Storage permeability body classification in low permeability water bearing gas reservoir - A case study of Gaoqiao Gas Field, Ordos Basin, China

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At present, a large number of low permeability water bearing gas reservoirs have been found in the world, and meanwhile, there are more than 2×104m3 reserves distributed in this type reservoir in Sichuan and Ordos basin, China. This kind of gas reservoir is characterized by poor reservoir physical properties, strong heterogeneity, high water saturation, complex gas and water distribution, and no obvious gas-water contact. The primary problem to develop this type reservoir is how to optimize the building area. Because of the complex formation water distribution, the application effect of conventional optimize method is not good. Any reservoir is characterized by two aspects of storage and permeability. In this paper, according to the physical property and movable water, the reservoir is divided into six storage permeability bodies by using dynamic and static data. Gaoqiao gas reservoir is located in the Ordos basin, and belongs to the low permeability water bearing gas reservoir. Take the Gaoqiao as an example, the classification criteria of storage permeability bodies are established and the type of drilled wells is classified. Based on the understanding of gas reservoir characteristics, the plane distribution of storage permeability body is drawn. Based on this distribution, we can optimize the development area in Gaoqiao. This method can be used to optimize the development area to develop such reserves. Furthermore, this method is helpful for the effective development of a large number of these gas reservoirs in China and the world.

Biography
Yan Haijun received his BS degree in Petroleum Engineering from the Northeast Petroleum University and his MS degrees from Research Institute of Petroleum Exploration & Development (RIPED), Beijing, China. From 2006, he has worked in the areas of oil & gas geology, gas development. He is currently the Engineer in the Department of Ordos E&P, RIPED, working mainly on gas development. As an Engineer, he has published over 10 papers and 1 book.

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