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# 论多层叠置独立含煤层气系统—— 以贵州织金—纳雍煤田水公河向斜为例

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摘要：

基于贵州织金—纳雍煤田水公河向斜的实测资料，采用地质分析等方法，探讨了煤层气地质条件在垂向上的非均质分布规律，提出和初步论证了“ 多层叠置独立含煤层气系统 ”的学术观点。研究表明，上二叠统龙潭组单一煤层甲烷平均含量及相邻主煤层之间含气量梯度均呈波动式变化，煤层埋深—压力系数关系在垂向上分为截然不同的两套系统，层序地层格架中二级层序与含气量梯度的独立分段高度吻合。由此揭示，含煤地层地下流体在不同主煤层之间总体上缺乏交换，导致不同煤层群之间的煤层气系统相对独立。笔者等认为，龙潭组层序地层格架特点奠定了该类系统形成的物性基础，含煤地层与上覆、下伏含水层之间缺乏水力联系而构成了该类系统产生的水文地质基础，即多层叠置独立含气系统是沉积—水文—构造条件耦合控气作用的产物。笔者等也指出，在以三角洲—潮坪—潟湖沉积体系为主的多煤层含煤地层中，该类含气系统可能具有普遍意义。

关键词：煤层气 层序地层 水力封闭 多层叠置 含气系统

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Fund Project:On Unattached Multiple Superposed Coalbed—Methane System: in a Case of the Shuigonghe Syncline, Zhijin—Nayong Coalfield, Guizhou

Abstract:

Using the method of geological analysis and taking the Shuigonghe syncline, Zhijin—Nayong Coalfield, as a case, the nonlinear occurrence of the geological conditions of the coalbed methane (CBM) in vertical section was discussed based on the measured data, and the academic viewpoint “unattached multiple superposed CBM bearing system” was suggested and demonstrated preliminarily. It was shown that the mean CBM content of single Upper Permian coal seam and the content gradient between backfence seams are various in undulation, there is two sets of the distinct system in the correlation of the coal seam depth to the reservoir pressure coefficient, and the secondary sequences in the stratigraphic frame is highly consistent with single sectioning of the CBM gradient. These imply that the exchange of the undersurface liquid in the coal bearing strata is generally absent among various coal seams, which might results in relative independency of the CBM systems among various coal seam groups. It was considered that the characteristics of the coal bearing strata sequence might supply a physical property base for the unattached multiple superposed CBM bearing system and the la ck of the hydraulic connection of the coal bearing strata to the superposed and underlied aquifers might supply a hydrogeological base for the formation of the systems, that is to say, the unattached multiple superposed CBM bearing system is jointly controlled by sedimentary, hydrogeological and structural conditions. It was also emphasized that the system might occur widely in the multi coal seam strata formed in delta—tideflat—lagoon environments.

Keywords:coalbed methane sequence stratigraphy hydraulic seeling multiple superposed CBM bearing system

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