Analysis Method of Coal Bed Methane Reservoiring Conditions - Case Study in Hancheng Area

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Abstract: Based on the analysis of the sediment, embedding and metamorphose of coal, and the reconstruction of reservoirs, the formation and evolvement process of Coal bed Methane (CBM) reservoirs in Hancheng area are studied, and characteristics of reservoirs, and conditions of CBM enrichment and reservoiring are analyzed. CBM reservoirs in Hancheng area are monocline, which is beneficial to CBM formation and evolvement due to its accumulation of coal and sediment in latter stage. Conditions for CBM production, storage and preservation are preponderant. The target coal seams of main reservoirs are thick and steadily distributed. No.3 coal seam is more advantageous than No.11 in conditions of CBM reservoiring and development.

Keywords: Coalbed methane; reservoir characteristics; reservoiring conditions; analysis method

Damages to CBM Reservoir and Its Protection during CBM Drilling

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Study on New Technologies of Ultra-short Radius Radial Horizontal Wells and Application in Coal-bed Methane Development Slim Hole Drilling Technology for Parameter Well of Coalbed Methane

Zhang Yi
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Study on Coring Technology of Outburst Coal Seam at Down Well

Liu Ying
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Application Research on Comprehensive Extraction and Control Technology of Coal and Gas Outburst

Jing Xinjun

A CBM Deoxidization Method with High Cold Efficiency

Tao Pengwan
Cheng Xueqing

A New Technology of Coalbed Methane Separation and Analysis of its Application

Zhou Hongjun
Du Wu

Present Utilization Situation and Benefit Analysis of Low Concentration CMM

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Abstract: On the basis of analysis on the characteristics of CBM reservoirs, this paper further analyzes the damage mechanism on CBM reservoirs caused by drilling pressure and drilling fluid during the drilling process, and finally works out a conclusion on reservoir protection in aspects of drilling technology and drilling fluid.

Keywords: CBM; drilling; reservoir; damage; protection

Study on New Technologies of Ultra-short Radius Radial Horizontal Wells and Application in Coal-bed Methane Development

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Abstract: Ultra-short radius radial horizontal wells technology is a new stimulation for oil development in recent years. It has got a good stimulation effect in old oil or gas wells, bad fractured wells, and near borehole damage wells. However, this technology has not been used widely due to some critical technologies’ problems such as turning system, hydraulic rock-breaking bit, etc. In this paper, both pros and cons of the critical technologies of common radial horizontal wells technology are analyzed. Meanwhile, new progresses and advantages in CBM drilling of these critical technologies both home and abroad are also introduced in detail.

Keywords: Radial horizontal well; turning system; hydraulic rock-breaking bit; CBM; revolving

Slim Hole Drilling Technology for Parameter Well of Coalbed Methane

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Abstract: In order to reduce the cost in drilling, China United Coalbed Methane Corporation adopts slim hole drilling technology to drill parameter wells. In this paper, key parts of this technology are introduced, which includes selections of surface equipment, drill string, drilling parameter and drilling fluid, maintenance of drilling fluid, control measures of solid content, deviation prevention, coring technology, and logging technology. These techniques are successfully applied in the Qingshan project in Baotian, Guizhuo Province, which only cost less than half of what may cost in conventional oil and gas well drilling. According to the above discussion, a conclusion can be reached that slim hole drilling is feasible for the drilling of parameter well.

Key words: Slim hole; coalbed methane; drilling; parameter well

Study on Coring Technology of Outburst Coal Seam at Down Well

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Abstract: In order to take out the core of outburst coal seams, and use the index of methane expansion energy initially released to forecast the fatalness of outburst, the paper analyzes the underground coring technology based on swivel type double tube core barrel.

Keywords: Coring technology; methane expansion energy initially released; prediction of outburst; swivel type double tube core barrel

**Application Research on Comprehensive Extraction and Control Technology of Coal and Gas Outburst**

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Abstract: This paper describes the comprehensive extraction technology tested in west and north areas of Sihe coal mine, Jingchen Anthracite Mining Group, which involves prospecting extraction by surface boreholes, regional extraction by long boreholes alone coal seam underground, extraction by short boreholes at excavation faces, and extraction by roadway boreholes at working faces. It effectively reduces both gas content and gas pressure in coal seams, and the tendency that outburst proneness coal seams in gassy mine may turn into real burst is also contained, which is of great significance to guarantee mining safety.

Keywords: Extraction; prevention and control; outburst; technology

**A CBM Deoxidization Method with High Cold Efficiency**

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Abstract: This paper describes a method of deoxidizing coal mine methane (CMM) with reforming catalyst. By using this method, steam is added to CMM. With the catalyst CH₄ and vapor become CO and H₂ by the heat of reaction between CH₄ and O₂. It not only avoids the super-temperature during deoxidization, but also increases the cold efficiency when delivering gas. The method can be applied to fields where pressure is needed in gas delivery and the adaptable scope of gas heating value is wider.

Keywords: CMM; catalyze; deoxidize

**A New Technology of Coalbed Methane Separation and Analysis of its Application**

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Abstract: This paper discusses advantages and disadvantages of existing coalbed methane (CBM) separation techniques, and points out the difficulty for work safety due to the explosion limit of CH₄. A new method of CBM separation is introduced, as well as its comprehensive utilization. It not only guarantees the safety during separation process, but also can reduce operation costs.
Keywords: CBM; methane hydrate; LNG

Present Utilization Situation and Benefit Analysis of Low Concentration CMM

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Abstract: CBM of low concentration is not only a major potential risk for coal mining safety, but also a clean resource associated with coal. Gas extraction is the fundamental measure to control CH₄ disasters. To control, develop and utilize CBM of low concentration in a scientific and reasonable way which can change calamity into benefit and make use of waste, is in accordance with both the national policies on energy–saving & emission reduction and the requirement to reduce the threat of CH₄ disasters. Therefore the utilization of low concentration CBM resource brings great benefits to the environment, the economic and the society.
Keyword: CBM of low concentration; utilization; benefit analysis; energy–saving & emission reduction