1 Introduction

The Jixi basin is a Mesozoic and Cenozoic rift coal basin in Jiamusi uplift. The recent coal bed gas in Jixi basin shows that the coal bed methane resources prospect is good, and the resources potential is large (TANG Shuheng, 2000; Zhang Xinmin, 2002). However, it is in the face of the problems such as narrow zone of sedimentary facies, rapid phase transformation, thin coal seam, coal distribution of poor continuity and fault development. The research on the coal bed gas system is not carried out. Coalbed methane reservoir often only distributed in the basin is very limited site (Qin et al, 2012). Therefore, the establishment of correct selection method is the important foundation and key factors of the exploration and development of coalbed gas successfully.

2 Main Controlling Factors and Optimization of Zone

The coal bed gas is the self generation and self preservation reservoir. The source of the reservoir, the gas generation and preservation are controlled by the coal bed itself. From generation analysis, Jixi Basin coalbed methane isotope mainly distributed between 39% to 41%, coal seam mature degree between 0.7% to 1.7%. The genesis of coalbed gas is thermogenic gas. So coal seam thickness and maturity are the main control factors of gas generation quantity. The research on the coal bed gas system is not carried out. Coalbed methane reservoir often only distributed in the basin is very limited site (Qin et al, 2012). Therefore, the establishment of correct selection method is the important foundation and key factors of the exploration and development of coalbed gas successfully.

3 Main Controlling Factors and Optimization of Layers

The analysis of the well in the favourable zone shows that the accumulated thickness of the coal seam can reach 60m above. But the single layer is thin, the maximum thickness of the single layer is generally no more than 3m, most coal seam 1-2m. The longitudinal span of the coal seam is large, from the buried depth from the 1400m to the 400m. It is relative dispersion.

To solve this problem, it is used well logging and mud logging data in the favourable areas of major coal bed Chengzihe formation and Muling formations to carry out fine contrast. Muling formation can be divided into 3
fourth order sequences, 10 fifth order sequences. Chengzihe formation can be divided into 6 fourth order sequences, 17 fifth grade sequences. The fine contrast shows that the number of coal layers increased and the thickness of the seam increased in the favourable zone. The lower part of the coal bearing section, the lower segment of Chengzihe formation, is condensed section of seam and the main layers of CBM exploration and development. Especially the lower section of Chengzihe formation, the development has two sets of relatively stable and large thickness of coal seam group. They are the coal seam gas main target layer.

4 Main Controlling Factors and Optimization of Sweet Spots

By observing the core of coal reservoir in Jixi basin, the coal and rock structure of Jixi basin is dominated by primary structure and fragmentation structure. The stress release location of slope is the advantageous part of cleat development (TANG Shuheng, 2004; SU Xianbo, 2004). Through well-seismic combined contrast of the main coal and layer structure of the objective interpretation, meticulous depiction of main layer structural characteristics and the characteristics of thickness show that favourable area in slope belt of JQ1 well area of Hezuo block structure is relatively simple, large thickness of coal seam, cleat development, resource abundance (LIU Mei, 2000; CAI Jinhua, 2013). It is a sweet spot (Fig2).

5 Application

Application of this method delineated two favourable zones, preferably two dessert goal, deploying 2 wells. In the dessert zone, the industrial air flow of CBM wells was deployed, and the experimental area will be established.

In conclusion, it suggests that the initial establishment of coal rank coal-bed gas sweet evaluation method is suitable for Northeast rift lacustrine basin, for the northeast to the other fault depressions containing coal basin of successful exploration and development and reduce the coal gas harm to provide technical guidance and reference.

References


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