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Please fill in your abstract title.	Study on the “Incised-Channel” Lithologic Traps in Neogene in Enping Sag, Pearl River Mouth Basin	
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Abstract

Enping sag is located in the west flank of the ancient Pearl River delta in Neogene in Peral River Mouth Basin, where the sedimentary background is relatively open, meanwhile the fluviation action is relatively strong. By now, structural oil and gas reservoirs have been found successively in the uplift zones on the north and south sides of the sag in Neogene, whereas there are few studies on lithologic traps. It's necessary to accelerate the research of lithologic traps in view of long term exploration deployment.

The interest strata of this area includes the upper part of the Zhujiang formation and the lower part of the Hanjiang formation. Through analysis of high resolution sequence stratigraphy, combined with the seismic sedimentology theory, analysis of sedimentary microfacies and hydrodynamic conditions were carried out under the fourth-order sequence stratigraphic framework by using the data of seismic, logging, cores and particle size analysis. The sedimentary models of the channel sand bodies have been established and the typical kinds of lithologic traps are summarized originally.

It's indicated that the interest strata of Enping formation are dominated by the distributary channels of delta front under the action of fluviation, considering of the granularity probability curves which are composed of two segments. The characteristics of cutting and migration of compound channels can be obviously observed in the seismic sections and RMS amplitude attribute slices. A single-stage channel is small in scale, the width ranges from 0.5 to 1.2KM. However, the multi-stage channels are large in scale, with an average width of 8KM and a maximum of 12.5KM. The evolution of the channels within the key layer was characterized by migration from east to west. There are three types of migration patterns of the channels which includes vertical accretion, lateral migration and multidirectional swinging. Interchannel muddy sediment between distributary channels is easily to seal the channel sand body, which has been already verified by drilling. That is to say, the channel sand body could rapidly change into mud laterally, the boundary between the channel sand and the interchannel mud acts an effective pinch-out line in upward direction in a favorable tectonic background of the lithologic trap, which was defined as the “Incised-channel” lithologic trap. There are three types of “Incised-channel” lithologic traps based on the sealing patterns, which contain isolated(abandoned channel), unilateral sealing and bilateral sealing type respectively.

This study clarifies the exploration prospect of “Incised-channel” lithologic traps of relatively high-sand – bearing area in Enping sag as 2 potential zones conducive to the exploration of lithologic traps and 4 lithologic traps around the oilfields have been identified, which sets a good foundation for further lithologic trap exploration in this area.

Keywords: “Incised-channel” lithologic trap; Ancient Pearl River delta; Relatively high-sand –bearing; Enping sag