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Yongchao Lu¹, Sitian Li¹, Jianye Ren¹, Youliang Feng², Fenggui Sui² (1) China University of Geosciences, Wuhan, China
(2) Geological Institute of Shengli Petroleum Administration, Dongying, China

Characteristics of the Lowstand Subaqueous Fan Deposits in Deep Lacustrine Basin and Their Tectonic Control, Dongying Half Graben of Bohaiwan Basin

Integrated sequence stratigraphy studies of the Dongying half graben of Bohaiwan rift basin have been done for constructing the chronostratigraphic framework and for the prediction of subtle traps. Subaqueous fan deposits as the optimum reservoirs occurred in lowstand system tracts of the Eocene Shahejie Fm. in deep lake background. Two types of the subaqueous fans have been recognized: 1, elongated slope fans with incised valley on the gentle slope of the southern depression, 2, short lobe fans at the down blocks of the syndepositional faults near the steep northern margin. All the lowstand slope fans or basin floor fans occurred on the sequence boundary and covered by the organic rich deep lacustrine mudstone beds. Almost all the lowstand fans distributed at the down dip part of the slope break zones which were controlled by the syndepositional faults beneath the sedimentary surface, in fact which are structural slope breaks. Based upon the relationship of the distribution of lowstand fans and the structural slope breaks petroleum plays can be predicted. Many stratigraphic traps of these types have been found in Dongying and adjacent grabens, although these areas have already reached mature stages of exploration.