A GEOLOGICAL STUDY OF THE EXPLORATION TECHNIQUES APPLIED TO THE PALUXY FORMATION IN THE WEST TYLER AREA OF SMITH COUNTY, TEXAS

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ABSTRACT

The West Tyler complex is created by a faulted intrabasinal ridge trending northeast-southwest through roughly the center of Smith County, Texas. This ridge has upthrown flanks on the northwest and southeast sides that cause critical structural traps to develop where the Paluxy channel sands are deposited across them. These faults are the limits of hydrocarbon migration for the four Paluxy "B" fields which have developed in the area.

The Paluxy "B" sand reservoirs that occur in the West Tyler area are formed by sand-rich channels of a Paluxy delta system that developed on a stable shelf during Paluxy time. These rivers were depositing sands in a distributary setting, somewhat similar to the current Mississippi River, on a stable shallow-water marine shelf which developed to the southeast in southern Smith County, Texas. These channel sands grade laterally into interdistributary open-shelf shales and finely-laminated non-porous siltstones and provide the excellent lateral trapping conditions for these fields.

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