Prospecting for Stratigraphic Traps

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Stratigraphic traps are directly related to their respective environments of deposition. An understanding of the depositional environment is essential to successful prospecting for oil or gas from this type of reservoir. Isopach studies of shale units directly above or, both above and below, a lenticular reservoir sandstone are of considerable value in reconstructing depositional environments. Such shale intervals, either directly above a reservoir sandstone, or embracing it, are genetic units and variations in thickness are completely independent of present-day structural configuration. Isopach maps of such genetic units serve as realistic indicators of where certain lenticular sands were deposited. Depositional trends of beach sands, offshore bars, and strike valley sands are readily determined from such studies. Structural maps, constructed on a reliable time marker within the genetic interval, serve as a means of localizing oil or gas accumulation within any of these reservoir types. In all such studies electrical log data are essential, since arbitrarily selected genetic units are seldom named formational units. The thinner the genetic interval, the greater the necessity for accurate "picks" from electrical log data.

Deltaic reservoirs are poorly understood and only rarely recognized by the geologist. This type of reservoir is, nevertheless, abundantly preserved in the sedimentary section. Regional isopach studies of depositional environment are an essential prerequisite for the construction of meaningful exploration maps of this type of reservoir. An understanding of the trends of distributary fingers and the influence of differential compaction in producing drape structures, likewise, is important.

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