A CASE HISTORY OF A 3D SURVEY IN THE PINNACLE REEF TREND IN SCURRY COUNTY TEXAS

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ABSTRACT

The intent of this case history is to show that 3D seismic surveys are not just the wave of the future but are both economically and technically viable now.

Design considerations will be explained in detail from both theoretical and practical points of view. By integrating geological assumptions, such as dip and a velocity model, maximum bin spacing related to Fresnel zones and to migration aliasing will be defined. If 2D data are available in or near the survey area, migration trails can be run using the 2D data to show the edge effect of the algorithm. The 2D data can also be used to make some reasonable assumptions about signal to noise ratios at specific offsets.

Processing flows and concepts are discussed, and certain key steps such as 3D autostatics, FX-Decon and 3D migration will be addressed. Application of this technology is demonstrated by numerous interpretive displays and drilling results.

These data presented should leave little doubt that 3D seismic surveys are not just a subject for discussion, but have practical application and should be an integral part of both exploration and development efforts.

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