ABSTRACT

THE EVOLUTION OF GEOPHYSICAL EXPLORATION IN A MATURE AREA

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Geophysical Exploration in a Mature Area is reviewed by an examination of the methods of exploration, instrumentation and interpretation of geophysical data gathered early in the history of a Mature Area. Additional methods of petroleum exploration cannot be ignored because they play a significant role in the development of any potential oil and gas producing region.

During the period from 1960 to 1970, exploration in many areas declined substantially; however, technological advances during this time resulted in a new era of exploration maturity characterized by the introduction of new technologies.

At the present time, well density in a Mature Area provided considerable information for subsurface structural and stratigraphic studies. Much of the subsurface data was derived from shallow tests and low density deep tests. Numerous areas of interest may be generated using this type of information. An area of interest may be upgraded to a first-class prospect by using the new technologies developed during the past few years.

Stratigraphic traps have always been popular and usually rewarding targets for explorationists, but they are also elusive. Major geophysical efforts in the past have been directed towards finding structural traps. Many explorationists agree that the future petroleum reserves must be found in stratigraphic traps. The important developments of wavelet/inversion processing in conjunction with additional technologies may be the forerunners of a totally new methodology in the 1980's.