

ABSTRACTS OF TECHNICAL PAPERS

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Schlumberger, Tulsa

*"Paleozoic Sand Trends Defined by
Dipmeter Data"*

Recently developed dipmeter techniques provide improved stratigraphic control for isopach projection of Paleozoic sands. These techniques, involving short-interval dip computation and a statistical approach to interpretation of the data, are extensions to the stratigraphic interpretation methods now widely used in Tertiary formations along the Gulf Coast.

Paleozoic sands, such as in the Pennsylvanian section of the Anadarko basin, have often been deposited over wide areas on underlying surfaces of low dip and low topographic relief. Lithologic unit boundaries are almost parallel, providing little information with which to predict the direction of improved sand development. Here, cross-stratification causes most of the anomalies from which dips are computed.

Because cross-bedded sedimentary units are relatively thin, correlation intervals used must be short, leading to computed dips for every few feet of formation.

These dips are the result of many factors, including the attitude of the underlying surface at the time of deposition and any post-depositional tilting. However, dips due to cross-stratification, comprising the large majority of those computed, primarily reflect the direction of sediment transport, although random variations in sedimentation confuse a superficial study of the computed data.

To emphasize trends and minimize random events, statistical methods are used.

Dip-direction frequency diagrams and modified Schmidt plots indicate the direction of sediment transport, show the direction of interval thickening, identify present structural dip, and enable greater accuracy and confidence in predicting sand development.

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*"Economics — The New Dimension
in Geological Thinking"*

The current problems of expensive exploration, imports, overcapacity in production and refining, and the continued loss of investment capital through increased government control have brought about reduced margins of profits and steady declines in drilling, discoveries, reserves and employment to the United States petroleum industry in recent years. The average petroleum geologist knows little about these matters. He has limited his interest to geology — period! The geologist has not concerned himself with these complexities and, therefore, knows very little of the many difficulties the petroleum industry continually faces.

The geologist must come out of hibernation and look at the industry as a whole. His knowledge must expand beyond his own science. He has to broaden his thinking into the area of economics more than ever before. The geologist must keep up with the changes in every phase of the industry.

The geologist must look outward — not just straight ahead but in all directions. He must be aware of what is happening in today's new technology, the ever-changing economic conditions, new political concepts, the intense fuel competition, world petroleum outlook and world markets — but above all, he must learn what significance all of these things have on his industry, his company, and on his own future as an explorationist.

The geologist should realize that the petroleum industry must prosper within all of its phases if he, himself, is to prosper. He, therefore, must take a more direct and positive interest in the four dominant problems which constantly confront the industry: geological, technological, economic and political. The geologist has an inherent knowledge of the first, knows a little about the second and is completely oblivious of the third and fourth. To become more effective as an explorer or developer he must become more involved and astute in all of these challenges.

The economic factor is the most important to management, therefore, the geologist must begin to make economics the new dimension in his geological thinking. The growing pressure on management to