

coastal sands and distributary sands, which together are thought to represent most of the sandstone in the Newcastle. Very gentle slopes, shallow sea floor, and slow rate of subsidence were primary reasons for the widespread distribution of a relatively thin sandstone section and the wide variation in sandstone trends.

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GEOLOGIC STYLING AND DIPMETER

Geologic styling has played a role in the economic interpretation of dip data. The classic dip patterns obtained from modern dipmeter computations can be related to a myriad of academic meanings, and an economic answer results only after the geologic styling within the area has been applied.

Geologic styling may be a dubious factor, and perhaps modern dip data, properly applied, can confirm or deny preconceived ideas. In either case, the full import of the economics is self-evident.

A broader concept and understanding of measured dip data will contribute significantly to the economic search for hydrocarbons.

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HISTORY AND ANATOMY OF ARKANSAS RIVER SAND BAR NEAR TULSA, OKLAHOMA

Several authors have demonstrated the dipmeter's ability to resolve internal crossbed dips. Analyses of the dip patterns, which result from paleocurrent flow directions, are interpreted to determine different sand body types.

This paper shows the relation between crossbed variation in a fluvial sand bar and known channel patterns which existed during deposition. The sand bar studied is in the Arkansas River valley approximately 10 mi upstream from Tulsa. From aerial photo sequences plus discharge and river stage records, it can be shown that the entire sand bar (600,000 cu yd) was deposited during two floods—May 19–22, 1957 (60 hours), and October 3–6, 1959 (96 hours).

The sand bar was studied in detail along a 500-ft

natural cutbank parallel with the valley and in a 700-ft trench dug at right angles to the valley. Crossbed types were studied and 210 crossbed measurements (true dip direction and true dip angle) were recorded at 12 vertical sections.

Results show that the highly variable patterns of crossbed dips match the erratic and changing flow directions prevalent during flood stages. In some vertical sections crossbed dip directions are at many angles to the overall east-west orientation of the Arkansas River valley. These results verify the expected crossbed variability in fluvial sands and suggest that dipmeter patterns from wells in channel sandstone bodies should be interpreted and projected with caution.

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PETROLOGY OF PENNSYLVANIAN CARBONATE BANK AND ASSOCIATED ENVIRONMENTS, AZALEA FIELD, MIDLAND COUNTY, TEXAS

The Azalea carbonate biogenic bank developed on a broad shallow shelf during early Strawn deposition. Study of cores and well cuttings defined 3 major facies. The "deeper water" micrite is dark brown with scattered crinoid fragments and was deposited in water from approximately 50 to 200 ft deep. The biogenic bank facies is composed of coarse fossil fragments including crinoids, Bryozoa, pelecypods, brachiopods, fusulines, and platey algae. The "sheltered" micrite is light brown with small fossil fragments consisting mainly of bivalves and Foraminifera deposited behind the bank.

Bank development was confined to the west edge of an Atokan structural terrace where oscillation waves were impinging upon the rising sea floor. Moderately high energy, shallow water and the associated supply of nutrients provided necessary ingredients for prolific growth of organisms which formed the biogenic bank.

Hydrocarbon production has been obtained from the bank over 13 mi of its length. Recently production has been extended 1¼ mi on the south end and 1½ mi on the north end. There is a good possibility that additional biogenic banks have developed on the broad Strawn shelf.

THE AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS 56TH ANNUAL MEETING

and

SOCIETY OF ECONOMIC PALEONTOLOGISTS AND MINERALOGISTS 45TH ANNUAL MEETING

Houston, Texas, March 29–31, 1971

Host Society: Houston Geological Society
Convention Headquarters: Shamrock Hilton Hotel
Headquarters Hotel: Shamrock Hilton Hotel

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If you have not seen Houston recently, you should! If you were one of 4,500 conventioners at Houston's last AAPG meeting in 1963, you will return to a city which physically has vastly changed. We have added

museums, theaters, shopping centers, several buildings over 40 stories high, the Astrodome and Astroworld complex, as well as man's nerve center to outer space, the Manned Spacecraft Center.

Houston has a population of over 1,200,000 and the Metropolitan area exceeds 1,800,000. With this growth