MEETINGS

HGS LUNCHEON MEETING—
FEBRUARY 26, 1992
Social Period, 11:30 a.m. - 12:00 p.m.,
Luncheon and Meeting, 12:00 p.m.
The Houston Club

MICHAEL J. DiMARCO—Biographical Sketch

Mike received a B.A. in geology from the State University of New York at Buffalo in 1979 and a M.S. in geology from Kansas State University in 1983. Following a brief teaching post at the University of Arkansas at Little Rock, Mike then obtained a Ph.D. in geology from L.S.U. in 1986. Subsequently, Mike joined Shell Western E. & P., Inc. where he worked for five years in onshore Gulf Coast exploration, mainly in clastic depositional systems. Recently, Mike has begun stratigraphic and exploration studies for Pecten International Co. in the North Africa area. His interests include stratigraphy, clastic sedimentology, and sedimentary petrology.

R. CRAIG SHIPP—Biographical Sketch

Craig received a B.S. in biology from Dickinson College (PA) in 1972, and then worked as the diving officer of the West Indies Laboratory of Fairleigh Dickinson University (NJ) in St. Croix, U.S. Virgin Islands. Craig earned his M.S. in geology at the University of South Carolina in 1980 and then worked as a staff geologist for the Marine Systems Laboratory of the Smithsonian Institution for four years. He received a Ph.D. in oceanography from the University of Maine in 1989. Craig joined Shell Development Company as a research geologist in 1988 and has worked in the Gulf Coast Tertiary and the deepwater Gulf of Mexico. His interests include marine geology, seismic stratigraphy, and shallow geologic hazards.

STRATIGRAPHIC CHARACTERISTICS AND SANDSTONE DISTRIBUTION OF THE HACKBERRY DEPOSITIONAL SYSTEM (MID-OLIGOCENE), S.E. TEXAS AND S.W. LOUISIANA: A SAND-RICH SLOPE-FAN COMPLEX

The Hackberry depositional system has been long recognized by Gulf Coast geologists by its anomalous deep-water fauna, rapid lateral variation in sandstone thicknesses, and prominent basal erosional unconformity. Hackberry sandstones also serve as major hydrocarbon reservoirs in many fields in southeast Texas and southwest Louisiana. A vertical succession through the Hackberry typically shows the basal erosional surface overlain by a variably sandy interval, informally termed the lower Hackberry sands, and capped by a thick deep-water interval, the Hackberry shale.

High-quality seismic data indicate that the Hackberry has a distinctive seismic signature. This seismic signature permits the interpretation of Hackberry lithologic characteristics in a sequence stratigraphic framework. Key elements of the seismic signature include: (1) a series of half-graben-like slumps, marking the updip limit of the Hackberry depositional system, and representing the failure of an immediately pre-existing shelf edge, (2) a basal erosional surface, in some places channelized as deep as 1800 ft. and cutting as deeply as the Eocene, representing a prominent sequence boundary upon which the Hackberry was deposited, and (3) a pronounced downlap surface with well-developed suprajacent clinoform geometries, best developed in updip positions and representing a maximum flooding surface within the Hackberry shale.

Most Hackberry sandstone is confined to the lower Hackberry sand interval immediately above the sequence boundary. The Hackberry sandstone isopach shows numerous linear to ovoid-shaped areas of thickly developed sandstone separated by areas of little or no sandstone. In some places, linear sandstone depocenters can be related to eroded and channelized slope paleotopography that is discernable seismically. Elsewhere, linear areas of thickly developed sandstone are not associated with a clear erosional expression on seismic records and may represent broadly linear, aggradational turbidite fills in paleolow positions. Other, more irregular to ovoid-shaped sand patterns represent ponded aggradational deposits in intra-slope paleolow areas and basins. Paleontologic data strongly suggest that this system was deposited at the time of the large mid-Oligocene sea-level lowstand shown on the Haq *et al.* (1987) coastal onlap curve. Deposition of lower Hackberry sands commenced when fluvio-deltaic systems bypassed the foundered shelf edge and sediment-gravity flows ensued through a tortuous network of upper slope channels, gullies, and other paleolows. Collectively, these deposits represent the upper and middle portions of a sand-rich slope-fan complex.

REFERENCE

Haq, B.U., Hardenbol, J., and Vail, P.R., 1987, Chronology of fluctuating sea levels since the Triassic. Science, v. 235, p. 1156-1167.