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by *Jon Blickwede*
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Future Exploration Plays of the Gulf of Mexico Province

The Gulf of Mexico (GoM) province, despite being one of the most intensely explored regions of the world, continues to yield new exploration plays with major hydrocarbon discoveries. A recent example is the lower Paleogene Wilcox submarine fan complex in the deepwater GoM, where a number of significant discoveries have been made in the U.S. sector since 2001. In the not-too-distant past, few petroleum geoscientists envisioned the presence of any significant Paleogene sands in the deepwater GoM, let alone hundreds of feet of net sand spread across a vast area of the present-day lower continental slope and abyssal plain. This history of paradigm-breaking new play development suggests that the GoM will continue to offer new surprises and will remain an important producing province well into the future.

Where will the new GoM plays be located? Some major parts of the province are still virtually unexplored, including offshore Florida, the Yucatan platform, and the Cuban and Mexican sectors of the deepwater GoM.

The interplay of Florida state and U.S. federal politics has kept most of the eastern third of the U.S. GoM off-limits to exploration for more than two decades. Although some aspects of the petroleum system offshore Florida are different than the prolific offshore Texas-Louisiana-Mississippi-Alabama portions, a number of promising plays have been identified.

The Yucatan Platform of Mexico comprises an area about three-fourths the size of the North Sea, and one of its exploration plays has elements that are analogous to the Arabian Platform. Nevertheless, only about 50 exploratory wells have been drilled, most without the benefit of modern seismic. Yucatan's promise is hinted at by one major discovery to date, the Xan Field in northern Guatemala, as well as two smaller discoveries in Belize.

Of the three countries having sovereignty over the GoM, Cuba has the smallest, but also least explored portion. The first well in the offshore Cuban sector of the Gulf wasn't drilled until three years ago with the drilling of the Yamagua-1 wildcat. The results of the well have not been disclosed, but it is rumored to have encountered light crude.

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Probably the most promising under-explored area of the GoM province is the huge deepwater Mexican sector, where fewer than 10 wells have been drilled in water depths greater than 500 meters (1600 feet). In stark contrast, about 1800 wells have been drilled in the same water depths offshore from Louisiana and Texas, with the discovery of many world-class fields.

Even within the more highly explored portions of the GoM province, prolific new plays are expected to emerge in a variety of areas and age-intervals. Possible examples of these new plays include the unexplored part of the Upper Jurassic Oxfordian erg on both the U.S. and Mexican sides, Upper Cretaceous submarine fans in the deepwater western GoM, and Gulf-wide K/T boundary mass-transport breccias. ■

Biographical Sketch

JON BLICKWEDE is currently senior staff geologist with Statoil's Global Exploration-Americas division in Houston. He earned a BS degree in geology from Tufts University in 1977 and an MS in earth sciences from the University of New Orleans in 1981. Mr. Blickwede began his career as a geologist for Amoco Production Co. in New Orleans and Houston and as exploration coordinator for Amoco Venezuela in Caracas. From



HGS General Dinner continued on page 15

1997 to 2002, he served as manager of geoscience at The Andrews Group, providing E&P-related technical consulting for Petróleos Mexicanos (PEMEX), then as regional manager, Mexico, Central America and Caribbean at Petroconsultants/IHS Energy Group in Geneva, Switzerland and Houston. Prior to joining Statoil in 2005, he was senior advising geologist with Unocal, focusing on regional studies in the deepwater Gulf of Mexico and assisting with new ventures evaluations in Latin America.

Mr. Blickwede has been a member of the AAPG, Houston Geological Society, Asociación Mexicana de Geólogos Petroleros, Sociedad Geológica Mexicana, Sociedad Venezolana de Ingenieros Geofísicos, Sociedad Cubana de Geología and Geological Society of Trinidad & Tobago. He has published on a variety of topics, including the Mesozoic of northern Mexico and deepwater exploration potential of the Gulf of Mexico offshore United States and Cuba. Among other professional honors, he was the 1988 recipient of the AAPG Matson Award for his paper on the Perdido Foldbelt of the ultra-deepwater Gulf of Mexico.
