

Monday, March 10, 2003

Westchase Hilton • 9999 Westheimer
Social 5:30 p.m., Dinner 6:30 p.m.

Cost: \$25 Preregistered members; \$30 Nonmembers & Walk-ups

Make your reservations now by calling 713-463-9476 or by e-mail to Joan@hgs.org (include your name, meeting you are attending, phone number, and membership ID#).

HGS General Dinner Meeting

by **Michael G. Moore**
BHP Billiton Petroleum (Americas) Inc.,
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Hunting for Elephants: Exploration and Appraisal Learnings from the Western Atwater Foldbelt of the Ultra Deep Water Gulf of Mexico

Recent major discoveries at Mad Dog, Atlantis, and Neptune have opened a major new hydrocarbon province in the Western Atwater Foldbelt (WAFB) of the ultra deep water Gulf of Mexico. The WAFB consists of a series of large compressional anticlines, partially or completely overlain by the Sigsbee salt sheet. A total of nine exploration wells and 14 appraisal wells have been drilled to date leading to an understanding of the nature and scale of the petroleum system as well as increasing our confidence in the presence of the large reserve sizes needed to support development in ultra deep water.

The two main pre-drill risks in the WAFB were the presence of reservoir quality sandstone and hydrocarbon maturation and migration into the reservoirs. The nearest well that penetrated the middle and lower Miocene section was 90 miles away. The first test was the Neptune discovery well drilled on the AT 575 block in 1995. This well found oil reservoirs in Miocene age sandstones. The next two exploration wells were drilled in 1998 and led to the discovery of the Mad Dog and Atlantis fields. Nine structures have been drilled in the WAFB with five announced discoveries. This proves the presence of a large working petroleum system in the WAFB.

At the beginning of the appraisal phase the main risk shifted to the extent and continuity of the Miocene reservoir sandstones. Combining well data and seismic mapping led to the develop-

ment of a geologic model for the reservoir intervals. The reservoir rocks in the WAFB are interpreted to be Middle and Early Miocene submarine fan systems deposited on the abyssal plain near the base of slope. The fan systems appear to be larger than the individual prospect size with a scale of tens of miles. ■

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Biographical Sketch

MICHAEL G. MOORE was born and raised in the great state of New Hampshire. He developed an interest in geology by cracking open rocks left behind by retreating Pleistocene glaciers. He received a BS in geology from the University of New Hampshire in 1976, and an MS in geology from the University of Alaska at Fairbanks in 1979. Mike's thesis work involved mapping of

Carboniferous limestone turbidites along the Yukon River in east-central Alaska. Following graduation, he accepted a position with Exxon in New Orleans where he held several exploration and development positions, primarily focused on the Gulf of Mexico. Mike joined BHP in 1993 and since 1995 has been involved in the exploration and appraisal of the Western Atwater Foldbelt. Mike is currently a Geological Advisor for BHP Billiton's Gulf of Mexico exploration program.

