Monday, September 20, 2004

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

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

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International Explorationists
Dinner Meeting

by ***Paul J. Boucher,*** *BP, Houston, TX,*
John C. Dolson, *BP, Sunbury-on-Thames, U.K.,*
Jerry Siok, *BP-Egypt, Cairo, Egypt,*
Philip D. Heppard, *BP, Houston, TX*

Key Challenges to Realizing Full Potential in an Emerging Giant Gas Province: Nile Delta/Mediterranean Offshore, Deep Water, Egypt

The Nile Delta is an emerging giant gas province with proven reserves of approximately 42 TCF with approximately 50 TCF yet to find. This resource has more than doubled in the last three years, largely from successful deep water exploration for Pliocene slope-channel systems. Proven reservoirs vary in age from Oligocene-Early Miocene through Pleistocene. Proven source rocks include Jurassic coals and shales and the Lower Miocene condensed Qantara Formation shales. Additional source rocks may be present in condensed intervals of Cretaceous, Oligocene and Eocene age.

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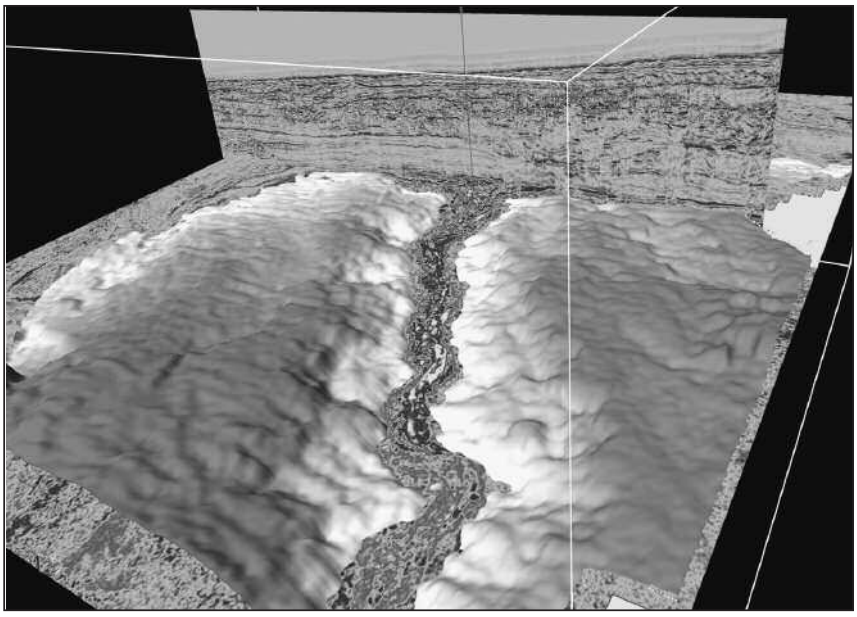
Following Tethyan rifting and opening of the Mediterranean in the Jurassic, prominent Cretaceous mixed clastic and carbonate shelf edges aggraded vertically along a steep fault-bounded shelf-slope break. This 'hingeline' in northern Egypt exerts the fundamental control on reservoir distribution in Tertiary strata. In late Eocene time, northern Egypt was tilted toward the Mediterranean during regional uplift associated with the opening of the Gulf of Suez and Red Sea rifts. Drainage systems shed reservoir quality sediments northward in a series of forced regressions. These regressions culminated in beheading of the youngest deltas by subaerial erosion during the sealevel low-stand associated with the Messinian salinity crisis. Early Pliocene transgressions deposited a thick sealing interval over the low-stand Messinian valley networks. Renewed deltaic deposition began at approximately 3.8 MA.



The steep structural hingeline and faulted continental shelf created a large amount of accommodation space with relatively minor progradation of depositional systems. As a result, the primary play consists of slope-channel fairways in all levels. The Plio-Pleistocene systems are the shallowest targets in the basin that hold the majority of proven reserves. Future large reserve growth will come from the pre-Messinian strata.

BP with partner RWE-DEA, recently completed

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a test of the pre-Messinian slope channel play. The Raven-1 wildcat well was drilled to test an early Miocene slope channel system in the western Nile Delta. The well was drilled in 650 meters of water to TD 4976 meters TVD. The well tested at a rate of approximately 37.4 million standard cubic feet per day and 740 barrels of condensate per day from lower Miocene channel sands. The Raven-1 well is being followed by tests of Miocene age strata in the Polaris-1 well.

Nile Delta gas resources lie close to emerging and established markets in the Mediterranean. Challenges to capturing the deeper pre-Messinian prize include:

1) Establishing favorable economic terms for export and domestic markets
2) Reducing drilling costs and optimization of wellbore patterns to develop multiple stacked objectives
3) Working in deep water and high pressure environments
4) Developing predictive models for pressure regressions in over-pressured reservoir fairways
5) Recognizing and exploiting "thin, bedded" low resistivity pay

Biographical Sketches

Paul J Boucher received a BS in geology in 1990 from Salem State College in Salem, Massachusetts and an MS in geophysics from Texas A&M University in1994. At that time Paul joined Amoco in Houston and began working on various projects in support of their operations in Egypt. He moved to Cairo, Egypt in 1998 to work on regional and prospect level mapping projects in the Nile Delta. He joined the BP western Nile Delta team in 2000 and was involved in the discovery of numerous large gas and gas condensate fields on the offshore Nile Delta. His main interests are exploring for hydrocarbons through integrated seismic sequence stratigraphy and petroleum systems analysis. He is currently working in the BP Brazil Deep Water Performance Unit as a senior explorer in the Foz do Amazonas area.

John Dolson has been a petroleum geologist for over 24 years with BP and formerly Amoco. He has a wide background varying from frontier exploration to field and reservoir management. He is currently the Exploration Advisor for TNK-BP New Ventures in the Russian Federation, where he lives in Moscow with his wife Debbie. John's primary interests lie in integrated sequence stratigraphy and workstation technologies which reduce risk in reservoir and trap detection and petroleum systems analysis. He is the senior author of AAPG's "Exploring for Stratigraphic Traps" in its Handbook of Petroleum Exploration and has authored over 50 papers and published two books. He lived in Cairo, Egypt for 8 ½ years where he raised a family and had the opportunity to explore in all of Egypt's basins. He moved to London in 2003 as an Exploration Advisor for BP. He was honored in 2004 with AAPG's Distinguished Public Service Award.

Philip D. Heppard is a geologist with BP in Houston, Texas. Philip received his BS in geology from Juniata College, Pennsylvania, in 1977 and his MS in geology from the University of Akron, Ohio, in 1984. He joined Amoco in 1979 and has worked as a development geologist in the Permian Basin and Trinidad, West Indies. Since 1988 Philip has been a pore pressure expert supporting BP's worldwide exploration and development efforts, most recently in their Exploration and Production Technology Group. His interest has been the integration of well and seismic data to predict overpressure in the subsurface for well planning and evaluation of seal quality.

Jerry Siok is a Certified Professional Geologist with 19 years experience performing a variety of subsurface resource assessments. He has 16 years experience as an exploration, appraisal and reservoir geologist for BP Exploration. Jerry is currently working for BP Egypt exploring for gas in the deep water areas of the Nile Delta. He has worked extensively in Alaska on projects ranging from new field appraisal and development at Northstar to detailed reservoir assessments and infill drilling with Coiled Tubing Rigs in Prudhoe Bay. He has also explored for fresh water resources in Alaska and applied shallow geophysical techniques to assess ground water contamination and develop remediation plans.