AAPG/EMD Gas Hydrate Committee Report
Mid-Year Meeting
Submitted November 10, 2005 by Art Johnson and Bob Lankston, Co-Chairs

Significant gas hydrate activities continued during 2005 and the level of activity is expected to increase in 2006 with higher natural gas prices and increased government and industry funding. At the global scale, gas hydrate investigations are divided between assessments of resource potential, geohazards, and implications for climate. Fortunately, results gained in the assessment of one aspect are often applicable to the others.

Global Gas Hydrate Activities

- The Methane Hydrate Research and Development Act of 2000 was set to expire in 2005, and the Office of Management and Budget recommended no funding for the program. Fortunately, reauthorization of the program was included in the Energy Policy Act of 2005. The legislation is awaiting final approval and the new budget will be $12 million, up from $9.4 million for the previous year.

- The Gulf of Mexico Joint Industry Program (JIP) conducted a drilling cruise from April 18 to May 22, 2005 with a goal of tying subsurface data to seismic data so that a predictive model can be developed for quantifying gas hydrate concentration in sediments and to enhance safe drilling operations. The program is led by Chevron and the participants include ConocoPhillips, Halliburton, JOGMEC MH21 (a Japanese consortium), Schlumberger, TOTAL, Reliance Industries, and the US Minerals Management Service. Substantial funding was provided by the US Department of Energy. Seven wells were drilled in the Atwater Valley and Keathley Canyon Areas of the Gulf, in water depths of 4200 to 4400 feet. Fifty-three cores were taken totaling 688 feet although the recovery of pressure cores was disappointing. Several cores recovered pieces of gas hydrate and other cores had evidence of hydrate dissociation. The log quality was very good and a wide range of shipboard analyses was conducted. The sediments evaluated at the Atwater Valley sites were predominantly fine-grained with little or no gas hydrate, while log evaluations of several sandy intervals penetrated at Keathley Canyon indicate the presence of gas hydrates. Additional work is needed to refine log interpretations and integrate core analyses.

- IODP Expedition 311, a 35-day cruise offshore Cascadia, was begun in late September, 2005. The cruise investigated gas hydrate distribution along a transect across an accretionary margin.

- The U.S. Minerals Management Service is conducting an assessment of gas hydrate potential on the Outer Continental Shelf. The MMS approach integrates a variety of data types and statistical programs to yield estimates of percent hydrate in a given area. The MMS assessment will be refined as additional data become available.

- Several oil companies are conducting assessments of gas hydrate hazards and/or resource potential, although most of these efforts are being kept confidential. BP is the exception and has been remarkably open about its goals, methodology, and results. A key component of the BP methodology is a petroleum systems approach.

- The Mallik volume (GSC Bulletin 585) was published in August, 2005, and includes all of the results from the 2002 drilling and testing. The volume may be ordered from the Geological Survey of Canada website: (http://gsc.nrcan.gc.ca/gashydrates/mallik2002/bulletin585_e.php).

- Beyond North America, gas hydrate investigations are continuing or being initiated. Japan is continuing its assessment of the gas hydrate potential off its coast and India has begun an aggressive assessment program with drilling being considered for 2006. Chile conducted coring operations in 2005 and a new resource assessment is scheduled for early 2006. Ireland completed an initial resource assessment during 2005.

Gas Hydrate Special Publication

A gas hydrate special publication covering all aspects of gas hydrates is being planned based on papers from the 2004 Hedberg Research Conference, along with additional submissions that were not given at the conference. The deadline for papers was initially announced as August 1, 2005, and over 65 papers have been committed; however the deadline was moved back to October1, 2005 due to logistical issues. Tim Collett, Camelia Knapp, and Art Johnson are the editors, with Tim serving as point source for communication with authors and AAPG. The AAPG Foundation approved a $12,000 request for funding to cover publication costs and the editors are very grateful to the EMD leadership for making the request. We do not yet have an estimate for the publication date.

2005 Annual Meeting

The AAPG Annual Convention in Calgary was very successful and included two gas hydrate poster sessions. The sessions were well attended and included active discussion among the authors and the convention attendees.

On the afternoon of June 21, the EMD Gas Hydrate Committee held a meeting that was attended by 27 AAPG members. All were encouraged to join EMD. Four presentations were made, accompanied by lively discussion and wide participation.

- Robert Hunter (ASRC Energy) – Overview of the BP Gas Hydrate Program on the North Slope of Alaska.
- Pulak Ray (U.S. Minerals Management Service) – Assessment of Recoverable (?) Gas Hydrates of the OCS
- Art Johnson (Hydrate Energy International) – (Extremely) Preliminary Results of the JIP Drilling Program in the Gulf of Mexico
- Scott Dallimore (Geological Survey of Canada) – Update from a Canadian Perspective

A common theme throughout the presentations and discussion was the need to utilize a petroleum systems approach for gas hydrate evaluation. This underscores the need for sound geological training and suggests an on-going role for EMD.

More detailed notes from the June 21 meeting will be posted on the EMD/Gas Hydrate website.

At the conclusion of the meeting, Bob Lankston (ConocoPhillips) agreed to serve as co-chair of the committee with Art Johnson. Erika Geresi (University of Victoria), Kelly Rose (National Energy Technology Laboratory), Mike Wiley (Consultant), and John Welch (Halliburton) agreed to serve as members of the EMD Gas Hydrate Committee.