

2010 International Coalbed & Shale Gas Symposium

RPSEA Forum & Technical Session

Wednesday, May 19, 2010

University of Alabama in Tuscaloosa, Alabama

Sixty nine people attended the forum. There was an overview of RPSEA followed by six technical papers, four of which were on RPSEA funded projects. A panel discussion with forum participant interaction followed the technical session. The following notes are from discussions during the presentations and the panel discussion on "Critical Research Needs for Development of Gas Shale and Coalbed Methane Resources".

- There is a need for an integrated, geologic basin analysis with an understanding of how reservoirs are tied into and affected by basin wide events and the water management issues within this framework.
- There is a need for more research in overall water management practices. The use of and disposal of water is ground zero for many environmental issues.
 - Need for evaluation of alternate water sources so as not to compete with public water sources.
 - Need to continue studying pathways for produced water reuse.
- There is a need for a better understanding of the mechanical properties of shales, how hydraulic fracturing affects shales, the transfer of proppant within these fractures and how permeability is affected by production.
 - The focal point of the discussion was the need for stimulation technology to catch up to drilling technology. While the group believed there needs to be money set aside for new drilling technology more of a focus should be on stimulation since stimulation technology is not well understood. As an example, the slick water fracturing method in the Barnett Shale was discussed. Slick water is a friction reducer which lowers the pump pressure requirements. The 100 mesh sand used as the fluid loss control mechanism is the key to understanding fracturing in the Barnett and not the slick water since 100 mesh sand is carried further into the frac than 20/40 sand which settles out much more quickly. The slick water is just the means for delivering the proppant.
- There needs to be a portfolio approach in the characterization of gas shales as well as in coals. This characterization should be integrated into the basin analysis mentioned above.
 - Fluid flow in reservoir rock with nanodarcy pore space cannot be characterized with darcy type technology.
 - The main issue discussed in coalbed methane is how to use current technology in a more cost effective and more efficient manner.
- From the small producer perspective, data management is a critical issue. There was discussion on the need for a centralized data management facility that would house information such as research papers and reports from various technical societies such as SPE, AAPG & SEG that could be accessed via the computer. Data management for the small producer is mostly a daunting and time consuming process.
- There is a need for ongoing research into the effects of biocides and how they affect bacteria in the reservoir versus at the wellbore.
 - There is a concern about long term bacterial controls and the generation of biogenic methane.
- At the university level, it was discussed that students are not learning how to think outside their comfort zone. Most research projects are large, complex undertakings performed by teams of researchers. These diverse, collaborative teams draw on each member's

expertise, for any one person is responsible for only a small part of a larger project. Students must understand this issue.

- Finally, there was discussion on the wish to use an expert system approach and whether such an approach could be used in the many diverse gas shales in the world.