

## **PTTC Focused Technology Workshop**

### **“Maximizing the Effectiveness of Hydraulic Fractures, from Devonian Sandstones to the Barnett Shale”**

**September 13, 2006; Pittsburgh, PA**

#### **Workshop Summary**

PAG member Roger Willis organized this workshop, and he and a small steering committee recruited a distinguished group of recognized experts who collectively made this one of the best workshops developed during our 12-year history.

A detailed summary of the workshop can be found on the PTTC Appalachian basin website in the latest newsletter. For this workshop report it is important to note that the workshop was very well attended – 139 registrants, 94% from industry – and very well received. Nearly every participant stayed, not only for the entire workshop, but also for an extended period after the workshop ended, talking among themselves and to the speakers, many of whom also remained. Conversations during the morning and afternoon breaks and during lunch also reflected the high level of interest and excitement with the overall workshop topic and with the presentations that had been delivered.

#### **Evaluation Forms**

Ninety eight of the 139 attendees filled out and submitted an evaluation form, many in return for their certificate of professional development hours. More than half of these had received a flyer in the mail; approximately a quarter had received an e-mail, probably as a result of our concerted effort to reach all members of SPE chapters and AAPG affiliated geological societies through our e-mail outreach network.

Approximately 70% of those who responded indicated that they are or work for an operating company. Another 26% indicated that they represent the service and consulting sectors. Only 3 individuals were from the government sector.

Between 85 and 95% of the participants gave high marks – either 4 or 5 out of 5 – to the workshop for having a program that met their expectations, speakers and facilities that were more than acceptable, and for offering a well organized program. Only two people questioned the organization of the workshop and only one said that the workshop failed to meet his or her expectations.

Numerous additional comments were received. Among the most positive were: excellent group of experienced speakers presented useful information; best workshop yet – well focused great speakers – questions answered; excellent workshop – have attended many and this ranks in the top 5; all of the speakers were excellent (particularly enjoyed

Norm Warpinski and Glenn Penny); Roger Willis was very informative and instructional – he is always very impressive; well prepared; great presenters; very applicable topics; great technology exchange; a lot of good information.

Other comments of a more negative nature reflect to a large extent our success in recruiting a group of speakers with a national reputation versus local experts and drawing such a large audience: too crowded; use academic facility instead of hotels; need more practical case studies with presenters with local experience; too much overlap of speaker's topics; afternoon session better than morning – morning too similar; if we can get access to power point slides it would be better; slides are a bit hard to read in the manual; program obviously set up by Universal.

Sixty persons indicated that they have attended other PTTC workshops, and 29 indicated that they have applied something that they have learned in these workshops. Perhaps it was these same 29 persons who indicated that they would be willing to share technological innovations or best practices with others. The list of topics that they were willing to share is perhaps the longest that we ever have received on these evaluation forms. The list includes: completion diagnostics in unconventional reservoirs (Barnett Shale, etc); improving stimulation in shale formations; reservoir characterization & completion results; Pennsylvania DCNR oil & gas leasing – best practices and requirements for operation and production on state forest lands; fracturing case studies; pinpoint stimulation on vertical or horizontal wells; permeability measurement in CBM microholes; use of coiled tubing drilling in future applications; applied geology versus empirical course work (i.e., taking the student out of the classroom into the field); stimulation information; and finally, fracturing and cementing technologies.

The list of additional topics these participants offered also was among the longest that we ever have received. Approximately 35 suggestions were received, many dealing with more on perforating and stimulation design, in both vertical and horizontal wells. Other suggestions were to offer more on shale play technology, including specific shales like the Marcellus; tight sandstone reservoirs, specifically the Upper Devonian sandstone reservoirs such as the Gordon and Gantz; coal bed methane plays, and the Oriskany Sandstone and other deep potential.

#### Attendance List

One hundred and twenty nine people pre-registered for the workshop, and 139 actually attended. These numbers do not Mark Hoffman and Doug Patchen, PTTC staff members.