

PTTC Focused Technology Workshop

“Well Control 101”

May 16, 2006; Washington, PA

Workshop Summary

This workshop was the latest in our successful program to involve more PAG members in the workshop development process. Steve Nance, a PAG member from Pennsylvania, served as our “Champion” for this workshop, i.e., a PAG member who gets an idea for a workshop and develops that idea, with assistance from the RLO if requested, culminating in a workshop in his home area.

The workshop also was a good fit with a recurring theme for workshops that we will hold this year - safety around the wellhead. It preceded by one week a workshop on Well Safety that was held in Marietta, Ohio, and by three months a workshop on oil field explosives safety planned for Columbus, Ohio on August 29th.

This workshop was held May 16th at the Holiday Inn in Washington, PA. Wild Well Control, Inc. cooperated with PTTC to teach the event. The workshop was based on the assumption that four factors typically contribute to the escalation of well control events: the drilling program, rig equipment, rig personnel and corporate preparedness.

The workshop began with an introduction to well control, after which the instructor, Bill Mahler, proceeded to discuss management of well control risks and responses to well control incidents.

At the very outset of the workshop, Mahler warned that “a blowout today can very easily bankrupt a small company,” and that small incidents by a company fortunate enough to never have had a blowout still can lead to big problems. In today’s business environment, more wells are being drilled by more rigs requiring more crews, and these rigs and crews are being asked to drill deeper and deeper. Also, rigs - and even crews - are being moved to the U.S. from other countries, such as China. Consequently, insurance rates are increasing due to the limited pool of experienced workers and the increase in the number of start-up companies. These smaller companies - often with a larger risk profile - are drilling deeper and faster, often in unconventional oil and gas plays, and frequently employ the use of consultants. In addition to rig utilization being at maximum capacity and crew experience being low, high rig personnel turnover, drug test failures, language barriers, unproven technology and deeper drilling to reservoirs with higher pressures are key factors to be considered.

Well control “incidents” can lead to “events” which in turn can lead to blowouts. These “incidents” increase as the rig count increases, and at this time number one for every 1000 wells drilled. Thus, if we expect to drill 50,000 plus wells in the U.S. this year, we can project approximately 50 incidents or blowouts (uncontrolled flow from the

well). The ultimate result will be an increase in the risk profile for the oil and gas industry. In parts of the U.S. today, insurance costs equal drilling costs for deep wells.

One of the first, perhaps even the first objective of a safety plan is to increase the crew's awareness of basic well control principles. You need to teach them what to look for as they do their jobs so when they experience something out of the ordinary they can "call time out" and "check it out." Historically, more than 80% of major well events have had 7 to 11 incidents leading up to them. In addition, safety drills should be designed, held and repeated until they become second nature to all members of the crew. This in itself will improve emergency response time. Companies also should prepare a first response action list and an ICS, or Incident Command System, with established lines of command. For best results, workshop participants were advised to keep it simple and flexible.

Understanding pressures and the most common causes of kicks were points of emphasis for much of the morning session. Well control concerns while drilling with air, a common practice in this basin, were to be discussed in the afternoon. However, at approximately 1:40 the instructor abruptly ended the workshop lecture and began a question and answer session that was over by 2:15. Thus, what was advertised as a full-day workshop lasted only 75 minutes past the lunch break.

Although what was presented during the workshop was well received, many were disappointed that the workshop ended so early and nearly everyone was at a disadvantage because the notebooks had not been shipped early enough to arrive on time. However, the instructor insisted that he would mail copies to all registrants.

Evaluation Forms

Twenty three of the 26 industry participants submitted an evaluation form. Most of those submitting forms were operators (14) or service company employees (7), and two were consultants. Six of them had attended previous PTTC workshops, so we reached a relatively new audience with this workshop topic. Three of the 6 previous attendees reported that they had applied something that they had learned from our workshops. One stated that he had used knowledge gained in a computer mapping and production analysis workshop; another volunteered to share technological innovations based on old field evaluation and exploitation.

Suggested topics for future workshops included: open-hole logging and completion; a focused discussion of Appalachian drilling and workover practices; more detail on safety issues related to encountering hydrogen sulfide zones and air drilling awareness; and additional safety issues.

A few additional comments were offered. One lamented the absence of handouts and the resulting difficulty in taking notes. Others applauded the workshop, wishing that more of their employees had come, and thanking us for hosting it.

Attendance List

Twenty seven people, all from industry, pre-registered for the workshop, along with two instructors and two PTTC staff members. Several companies substituted one employee for another, such that the final registration list (below) indicates 26 registrants, all from industry, plus one instructor and two PTTC staff members, a total of 29 at the workshop. Half of those who submitted an evaluation form indicated that they learned of the workshop through our e-mail approach where we ask local societies to distribute a one-page workshop announcement attached to an e-mail to their entire membership.

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