

SPE Production and Operation Technical discipline Workshop:

Expandable Completion Technologies



The 4th of March 2004 a workshop promoted by SPE - Italian section was held at the conference room in ENI E&P building, in San Donato Milanese. The subject: “Expandable Completion Technologies” drawn the interest of 72 participants officially registered. The evaluation forms gathered after the event showed positive participants feedback both on the topic and on the quality of presentations, underlining the good outcome achieved by the event.

The topic of the meeting was a young technology that is rapidly evolving and offers possibilities of application for many different purposes in completion systems: sand control, water shut off, monobore wells, etc.. The aim of the workshop was to provide an overview of the current state of the art and promote an open discussion upon current applications, specific criticalities, and future developments.

After the introduction by the chairmen Maurizio Rampoldi (ENI E&P) and Alberto Pelliccia (Shell Italia E&P) followed a presentation by Domenico Antonio Di Renzo (technical leader for innovative technologies in drilling and completion at ENI E&P) illustrating the state of the art. Di Renzo provided an overview upon the expansion processes performed to deploy expandable systems and the applications for isolation expandable liners, expandable casing, expandable screens and the combination of them. He concluded explaining the main possible future developments of the technology: casing cladding with corrosion resistant alloy materials and expandable screens systems for multi-layers reservoir and longer horizontal wells.

Then followed four technical presentations on more specific topics. Each of them was performed by a representative of each service company providing expandable products on the market.

Jim Montagna (Manager Business Development for Expandables in Baker Oil Tools), after a brief introduction on solid expandable tubulars metallurgy currently available, presented the latest studies and test results on solid expandable CRA material candidates.

Travis Hailey (Halliburton Sand Control Products Manager) showed the expansion process for an expandable screen and its applicability in open hole wells. Subsequently he illustrated the functionalities and the possibilities of the Annular Barrier Tool System, developed in order to provide zonal isolation in open hole completions, in combination with the expandable screen.

Don Eubank (Product champion of expandable screen for Slumberger) presented the results of the recent study performed at Slumberger Cambridge Research Center on the role of annular gap in open hole expandable sand screen completions. The tests demonstrate the importance of a good compliancy between screen and borehole in order to achieve long term integrity.

David Butler (Responsible for business development of expandable products in Europe, Africa and CIS for Weatherford CS) offered an overview on the functionality of expandable solid and slotted tubulars and their possible applications in the well.

After the technical presentations followed a breakout session, where the participants were divided into four groups. Each group, guided by a facilitator (one of the previous technical speaker), was requested to design an expandable completion system for a given formation. The solutions identified were then presented by each facilitator and possible criticalities for each case discussed.

Maurizio Rampoldi held the wrap up session and underlined the most significant ideas and concepts developed during the event. After recalling the main current applications for expandable completion technology, he highlighted how the market is rapidly growing, remembering that in few years more than 250 applications have been performed worldwide. He concluded the workshop pointing out the possible future development of the technology even for drilling applications that offers the perspective of well re-entry and monobore wells.



A picture taken during the breakout session