Extending life, value are topics of Mature Fields

IRANIAN DRILLING

THE ONSHORE DRILLING sector in Iran has for decades been dominated by the **National Iranian Oil Company (NIOC)**, with little to no influence from international performance drilling development and trends. The authors present OMV's experience with importing a brand-new 2,000 HP drilling unit from China, the paradigm shifts in local drilling engineering during the well planning stage and the results from the first two wildcat wells drilled to 15,000 ft in the Zagros fold belt in 2004. This project was the first international drilling unit to be imported into mainland Iran since 1991. Experience with introducing a Chinese drilling contractor into an Iranian operating environment for a European client is presented together with processes and solutions implemented to enhance team building and achieve a common goal. Successes and pitfalls are discussed as well as the general service quality and its impact on achieving performance drilling goals.

Performance Drilling Onshore Iran - Introducing New Concepts to a Mature Area (SPE/IADC 91892) **H F Spoerker**, **M Doschek**, **OMV**.

BERYL FIELD

Beryl field life was initially estimated to be 20 years, but is now in its 28th year of production. New technology/techniques are added to the drilling toolbox continually, enabling wells which were unthinkable to become common and economical in this mature field. 3D visualization is used to identify and target bypassed oil in the peripheral reservoir sectors. Extended reach/3D designer wellpaths are utilized to intersect ever smaller targets. New formation evaluation and geosteering concepts like chemical stratigraphic analysis are used to identify target intervals in real-time.

Modified rotary steerable tools are employed in the hard, abrasive Beryl formations. Real time vibration monitoring is used to optimize drilling performance, which provides a basis for bottom hole assemblies and bit design/selection. Onsite engineers are used to analyze/evaluate real-time torque, drag, vibration, hydraulics, and wellbore stability parameters.

Wellbore stability is a major challenge. A proprietary technique is used to build formation integrity in depleted zones, enabling mud weights critical to provide stability in highly reactive shales to be used. Due to this and the compartmentalized nature of the Beryl field, highly overbalanced drilling is a result.

Beryl Field: Extracting Maximum Value from a Mature Asset Through the Evolution of Technology (SPE/IADC 92763) **R Cutt**, **M R Niznik**, **ExxonMobil**.

Combining coiled tubing drilling technology with a conventional jointed pipe workover capability represents the next step change in providing low-cost reserves access via the most efficient tool for the application. SPE/IADC 92207.

WELL ABANDONMENT

The well abandonment phase of the decommissioning of the North West Hutton platform was the largest such project undertaken in the North Sea, and possibly in the world, to date. The authors discuss the systematic approach adopted by BP Exploration to achieve its objective of safely recovering the tubing, casing and conductors from the wells. It builds on a previous SPE paper describing the plugging of the wells. An integrated team comprising oil company engineers and key service company personnel developed processes and procedures to reach the project goals. The team applied conventional and non-conventional technology to address the challenges of the project. This approach facilitated the timely and cost effective recovery of 40 wells.

The authors discuss the methodologies used, both technically and in terms of project management. They will review the successful application of non-oilfield technology used during the project. The authors will also examine the implementation of basic technical limit principles to making the project more safe and efficient. They conclude with data on the performance achieved, a review of the key lessons learned and how this information will be used on future projects.

Abandonment of the NW Hutton Platform Wells (SPE/IADC 92165) **S J Kirby**, **Kirby Engineering Services**; **G J Skelly**, **Signa Well Services**.

HYBRID OPERATIONS

The authors document the results of a new stage of development in the application of coiled tubing drilling. Combining coiled tubing drilling technology with a conventional jointed pipe workover capability represents the next step change in providing low-cost reserves access solutions through selection of the most efficient tool for the application.

Drilling sidetracks through existing completions using coiled tubing is an established practice in Alaska's North Slope oil fields. During these operations the use of jointed pipe with the coiled tubing drilling rig was avoided, except for running liners.

A conventional workover rig was the preferred approach to prepare the coiled tubing-candidate well when it required a change-out of production tubing or other workover activity. In 2001 a North Slope operator evaluated the opportunity to utilize one rig to perform both operations. In 2002 a workover rig was modified to fit the need.

Specialized equipment, multidisciplinary personnel and control of overall well cost are just a few of the many parts of the operation that had to be planned. The authors detail the results, problems encountered, solutions, and a quantification of the real benefits achieved combining coiled tubing drilling with a jointed pipe workover.

True Hybrid Operations Combining Coiled Tubing Drilling and Conventional Rig Workover Techniques and Practices (SPE/IADC 92207-Alternate) **D P Rock**, **S M McLaughlin**, **Schlumberger**; **D T Kara**, **BP Alaska**; **U Cassee**, **Nordic-Calista Services**.