

# Operating in challenging areas will be presented

## WORLD CLASS DRILLING

The North Pailin field, located in the Gulf of Thailand had been evaluated during 1996-1997 with 15 delineation wells. Unocal Thailand put the development on a fast track, aggressive timeline that moved the start-up project from well plan to cash flow within 9 months.

*World Class Drilling in the Gulf of Thailand: North Pailin Project* (SPE/IADC 79896) by **W Yad-in-Lam, N Luckanakul, P Tanamaitreejitt, Unocal Thailand.**

## 3D WELLS IN WESTERN SIBERIA

To improve the development of a field in Western Siberia, Sibneft elected to drill 3D wells (5,000m MD) with long horizontal drain (more than 1,200m). Due to geographical conditions those wells were drilled from a cluster. In order to drill those wells a heavy land drilling rig (3000 hp) from Pride Forasol, and well services from Halliburton, Schlumberger and Baker groups were mobilized.

*Drilling 3D Wells in Western Siberia* (SPE/IADC 79897) by **A R Matevosov, I Dyashev, SIBNEFT; D C Dupuis, Pride Forasol; and Y A Baradot, Institut Francais du Pétrol.**

## LAND DRILLING

Agip KCO, the operating company of the ex-OKIOC consortium, aimed to drill an exploration well in North East Caspian waters offshore Kazakhstan. Due to geographical conditions prevailing in that area the operator decided to build an artificial island where an ultra heavy land drilling rig would drill the well during summer period only. A complex interface is to be managed.

*Land Drilling Project in North East Caspian, Offshore Kazakhstan* (SPE/IADC 79898) presented by **Y Lepoutre, D Emergy, Pride International.**

## CASPIAN SEA DRILLING

Challenges of drilling in the Caspian Sea include shallow hazards, complex pressure regimes, low fracture gradient, highly-charged shallow water sands, reservoir sands that exhibit a pressure regression and the need to drill very deep to evaluate the geologic objectives.

The authors describe potential surface and subsurface hazards, the well plan that was developed to mitigate those hazards and summarize the operations that led to the drilling successes.

*Nakhchivan Drilling - Operational Success in a Challenging Environment* (SPE/IADC 79899) by **C W Sandin, J D Jorden, ExxonMobil Development Co.**



**This modular Russian rig can be skidded from site to site, rigged up, wells drilled and completed and demobilized in one winter season.**

## CHAD PROJECT START-UP

This paper discusses the challenges of starting-up a major operation in Chad where the existing local infrastructure and workforce support non-mechanized agrarian activities. The Chad project will recover approximately one billion barrels of heavy crude oil from 250-300 wells in a three-field area in southern Chad. The crude will be treated to sales quality in a central treatment facility and pipeline transported 1,100km to a floating storage and offloading vessel offshore Cameroon.

*The Chad Project Start-Up: High Performance Expectations in a Remote Area* (SPE/IADC 79900) by **C M Roberts, D L Breeding, ExxonMobil.**

## ENVIRONMENTALLY FRIENDLY WELLS

Polar Lights Company's Ardalin complex consists of the main Ardalin field and three satellite fields. In 1997 the Company decided to commence the satellite fields development utilizing an upgraded Russian drilling rig to meet the goal.

The modular upgraded Russian drilling rig can be skidded from site to site and rigged up, wells drilled and completed and demobilized back to Ardalin in one winter season. Polar Lights Company has drilled four satellite wells from the ice pads in one winter season leaving the tundra surface undisturbed and at substantial benefit to the company.

*Drilling Environmentally Friendly Satellite Field Wells in the Tundra of the Timan Pechora Region of Russia* (SPE/IADC 79901) by **Z Y Kukhtyak, S I Sekerenova, A V Perovsky, Polar Lights Co.**

## PROBABILISTIC METHODS

Enterprise was granted the operatorship of the Bijupira/Salema discoveries in Brazil's Campos Basin during 2000. To achieve project sanction, the Enterprise project team needed accurate well cost estimates. Coordinating concurrent pipelaying and manifold installation required accurate duration estimates. Opportunities as well as risks were identified and quantified. The generic models were modified to generate cost and time estimates for all sixteen planned wells simply by changing the directional plan.

*How Probabilistic Methods Were Used to Generate Accurate Campaign Costs for Enterprise's Bijupira/salema Development* (SPE/IADC 79902 - Alternate) by **S Zoller, Enterprise Oil; A J Hinton, J R Graulier, Peak Well Management; A W Paterson, Peak Group.**

## PRE-DRILL PLANNING

Methods recently used in an offshore appraisal program in Eastern Venezuela to understand the subsurface pore pressure and fracture gradient environments to be expected are presented. Framing subsurface conditions using rigorous seismic imaging and interpretation as well as sound engineering planning and practices made it possible to confidently drill through rather than avoid this suspected gas interval.

*Pre-Drill Planning for Shallow Gas in Eastern Venezuelan Appraisal Project* (SPE/IADC 79903 - Alternate) by **J C Stevens, J R Burgess, D Hanley, W Menard, ConocoPhillips.** ■