

Innovation

New Drilling Techniques Yield Positive Results in Russia.

New technologies are making way into the field of E&P activities. Oilmen are more open to trying out innovative technologies to increase production. At TNK Uvat Fields, the geologists have tried new commingled technology and achieved success. Russia has sourced this technology from abroad and being novel technology very few companies have used so far. Commingled production has yielded good production results in Ethiopia and Ecuador.



In less than a year, TNK-BP has managed to extract almost 2 million tonnes of oil from Eastern Uvat fields. The success of this project is very impressive especially against the backdrop of slower production growth and falling exploration efficiency across Russia. The company has already commenced work on Central Uvat and is preparing to bring Tyamkinskoe field on stream. The success of the project can be attributed to the team of geologists who are applying advanced technologies and also developing new ones on their own. They have recently taken up a new technique known as commingled oil production in their oil fields.

Developing Multiple Reservoirs through One Well

Some of the fields contain several productive horizons and the oil companies have the right to operate such horizons jointly only if they can meter each reservoir separately, by separating production, which is cost intensive and time consuming as well. However this challenge can be handled through commingled oil production that enables development of two reservoirs at the same time via single well without drilling an additional grid or disconnecting the reservoirs. The flow-rates are measured and all hydrodynamic tests are performed at the wellhead. Thus two reservoirs

can be brought on-stream at the same time, doubling the flow-rate from a single well and boosting the oil recovery factor.

Conventional technology is used to develop lower formation first before moving to upper reservoirs. The catch, however, is that it is not possible to fully deplete the lower formation in practice: what happens is that when the flow-rate drops to 2–3 tons per day the well is deemed sub-commercial and the drillers move on to the overlying formation. Commingled production helps overcome the challenge of high water cut and production of just 2-3 tonnes from the lower reservoir and facilitate development of more productive higher formation. According to Alexander Prokhorov, Deputy Chief Geologist, TNK Uvat, the technology is designed to tap all the reserves, maximize the recovery factor and improve the field's economics.

The trials for the new commingled technology will be carried out at Ust-Tegussoke field, which has two productive reservoirs. The field's development plan envisages drilling 40 wells into each of the reservoirs and if the pilot project is a success, it will be possible to achieve the same result with 40 wells as with 80 thereby cutting costs. Drilling operations have already begun at the first experimental well and based on the initial results plan to drill two wells of this type in Ust Tegusskoe in

the current financial year. Company has signed a contract with Schlumberger and Baker Hughes to supply necessary equipment, while KAC Deutag will perform the drilling work. The Christmas tree will be manufactured in Romania and downhole equipment sets are ready to be delivered.

Russia has sourced this technology from abroad and being new technology very few companies have used this so far. Commingled production has yielded good production results in Ethiopia and Ecuador. TNK BP has used similar technology previously in Orenburg region, but the wells there were fitted with sucker rod pumps rather than ESPs.

Oil Injection Technique

A new technique developed by TNK BP geologists jointly with contractors from Tomsk has also been given debut in the Uvat fields at Urnenskoe location. The team has already carried out interference testing by injecting oil rather than water into the well. This new technique involves making tight wellhead connections to prevent oil spills at the first well, measuring the flow-rate, running a line to the second well and pumping oil instead of water. It has been developed for fields that are located far away from infrastructure and prevents any deterioration in reservoir properties during the initial stages and provide information needed to build a

geological model.

This technique provided amazing results when used for the first time in the summer of 2007 at Urnenskoe field. This new method proved that the field's reserve and contours were bigger than the seismic had indicated by giving an increment of 3.5 million tonnes of recoverable oil around the first cluster. It also enabled the geologists to design a reservoir pressure maintenance system and study the interaction between the wells. After its successful implementation, many other companies are inclined towards implementing this technique.

Welcoming New Ideas

Oilmen are keeping the eye on new ideas from local researchers and have set up working groups at various levels to look into the practicalities of applying new techniques. In Novosibirsk, TNK BP aims to apply a method of using reservoir pressure maintenance to boost recovery factors and at Kalchinskoe field, employ hydraulic fracturing in reservoirs that were previously regarded as unpromising. With the new technologies, Uvat fields now yield around 100 tonnes, something that would have been considered fanciful not so long ago, says Prokhorov. ■

Source: TNK-Uvat

IOC, HPCL Not to Build Refinery in Rajasthan

New Delhi: Indian Oil Corporation (IOC), India's flagship national oil company and downstream petroleum major, and Hindustan Petroleum Corporation Ltd (HPCL), an oil company of the Government of India based in Mumbai, have rejected an offer to build a refinery in Rajasthan.

The project can be viable only if the state government picks up stake and offers huge fiscal incentives. SC Tripathi committee said that IOC and HPCL had conveyed that at this juncture, their hands were full and they would not be in a position to participate in another project.