

## ½" to 18" E-PEPs™ | Kashagan Oilfield, Kazakhstan

Discovered in July 2000 the Kashagan oilfield is one of the most important oil finds in recent times. It is estimated to hold 38 billion barrels of oil, with a potential recoverable reserve of 16 billion barrels. At peak production, it is expected to produce 1.5 million barrels of oil per day, and will eventually double Kazakhstan's oil output to 3 million barrels per day - equal to 4% of current world production. The field is being developed by a group of partners including Shell, Exxon Mobil, Total, ConocoPhillips, Kazakh state-run oil company KazMunaiGas, INPEX and AgipKCO (Eni).

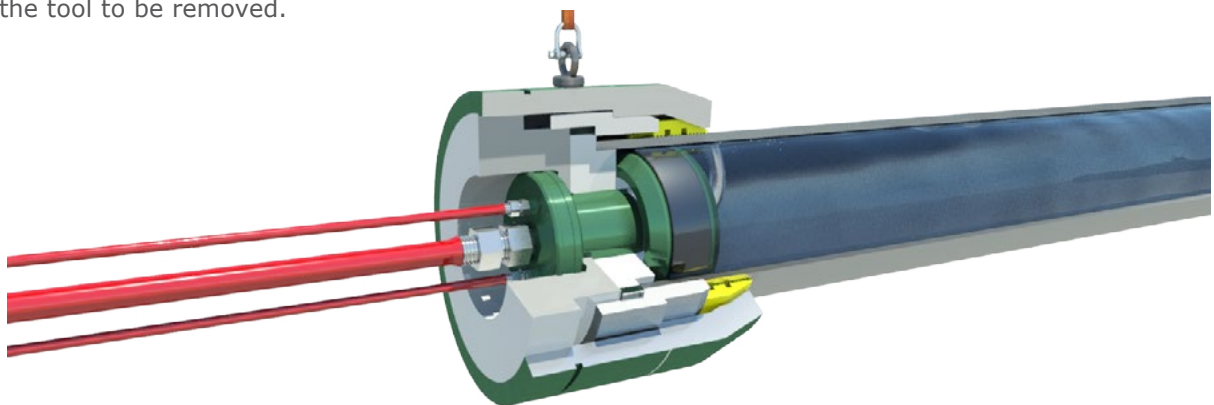
The \$136 billion field is located in the shallow waters of the north Caspian Sea and development is not without its challenges. Since its discovery, the project has faced several problems, not least, the technical difficulties of extracting oil in a harsh climate. During the winter temperatures can plummet to -20°C causing the shallow waters to completely freeze, up to a depth of at least two meters for several months. To overcome some of these difficulties the field is being developed through the construction of a series of artificial islands, on which drilling and production facilities are located. Such challenges have extended the original production date, planned for 2005, to the last quarter of 2012.

As a result of the considerable ongoing investment required to bring this field into production each and every opportunity to introduce efficiency and limit the spiralling costs has been investigated. As a result of the desire for improved efficiency and cost saving STATS (UK) Ltd were approached by BJ Services Company Middle East Ltd to supply a range of E-PEPs™. The E-PEPs™ ranging from ½" to 18" will provide temporary test caps required to carry out the estimated 10,000 hydro tests relating to the construction of the process and production infrastructure. STATS patented E-PEPs™ have significant benefits over the traditional time consuming and wasteful method of welding and removing end caps to provide the temporary test boundaries.



### How the E-PEP™ Works

The E-PEP™ series of self-energising external grip test plugs are fitted to the pipe end and hydraulically actuated. The simple, straight forward operation allows the E-PEP™ to be installed and activated in a matter of minutes. The introduction of hydraulic set pressure to the set circuit activates a mechanical lock assembly that grips the OD of the pipe whilst simultaneously energising an elastomeric seal in the ID of the pipe. This allows the pipe work to be pressure tested with minimum preparation to the pipe end and no remedial work after the E-PEP™ is removed. High quality elastomer seals provide excellent sealing qualities ensuring a leak tight seal, designed with generous radial clearance the E-PEP™ can easily cope with typical internal obstructions such as weld beads or pipe ovality. A through port allows the system to be filled and pressurised or vented through the E-PEP™. To remove the E-PEP™ from the pipe end, hydraulic pressure is applied to the un-set circuit; this will retract the lock assembly, de-energise the seal, and allow the tool to be removed.



### Solution

- Reduces the environmental impact by negating the need for sacrificial end caps and welding consumables
- Operators save time and reduce costs associated with welding / cutting end caps
- Timely completion of construction and fabrication activities