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## Halliburton Develops New Technologies to Advance Ultra Deep Water Capabilities

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These milestone technologies enable operators to reach difficult-to-access reserves in deeper water.

Halliburton's (NYSE:HAL) Energy Services Group has developed new technologies -- DeepReach(SM) coiled tubing service and DeepQuest(SM) stimulation service -- designed to assist operators with recovering harder-to-access reserves in deep water. In some cases, these technologies will help operators perform treatments on ultra deep wells that could not be performed prior to the development of these technologies.

Compared to conventional coiled tubing strings, Halliburton's DeepReach system with its tapered outside diameter permits the performance of coiled tubing work at depths unachievable before. With conventional coiled tubing, the length and resulting weight of the tubing string that would be required to perform ultra deep work may exceed the strength of the string at the upper end, imposing a strict limit on depth capability. With the DeepReach system, two factors work in unison to allow working at greater depths: the coiled tubing string is lighter in weight and its design results in greater strength at the upper end of the coiled tubing. This could result in up to 30 percent greater depth capability.

The lighter weight is important on offshore platforms where weight is strictly limited both by crane capacities and deck loading restrictions. The DeepReach system also helps to increase safety margins and allows for better flow designs in siphon or velocity string installations.

"The engineered transition joints are key components of the DeepReach system," said Mike Marshall, Intervention Business Development Manager. "These joints along with Halliburton's patented V-Block technology result in a very dependable system." Marshall added that the system is currently in field trials and should be fully commercial during the first quarter of 2005.

Halliburton's new DeepQuest service includes a new weighted fluid system that allows for fracpack and fracturing treatments on deep wells where the necessary surface treating pressures would otherwise exceed the pressure limitations of surface equipment. The technology is specifically aimed at deep shelf and deepwater field development but is also applicable in land applications. Using a weighted fluid makes it possible to achieve required treating pressure at the formation face by taking advantage of the hydrostatic pressure of the fluid column. This is especially important for offshore operations because flexible treatment lines rated at over 15,000 psi (pounds per square inch) simply are not available at this time in the industry.

"The new DeepQuest fluid system transports the proppant very effectively and cleans up well, plus it helps to make ultra deep fracpacks possible, both from an economic and logistic perspective," said Wes Ritter, senior technical advisor-Deepwater. "With this system operators can benefit from an optimized treatment on even the deepest wells they are now completing."

Currently celebrating its 85th year, Halliburton is one of the world's largest providers of products and services to the petroleum and energy industries. The company serves its customers with a broad range of products and services through its Energy Services and Engineering and Construction Groups. The company's World Wide Web site can be accessed at [www.halliburton.com](http://www.halliburton.com).

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