

# HALLIBURTON

## Halliburton Successfully Installs World's First Trilateral Well From a Semi-submersible for Norsk Hydro in the North Sea

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HOUSTON, Aug 27, 2002 (BUSINESS WIRE) --

### *A quantum leap in the application of multilateral technology*

Halliburton Energy Services' Sperry-Sun product service line and Norsk Hydro recently successfully developed and installed the world's first trilateral TAML (Technology Advancement for Multilaterals) level 5 well from a semi-submersible with the ITBS(TM) isolated tie-back system. The multilateral well, located in the Troll Olje field in the North Sea, 65 kilometers from the Norwegian coast, will help prevent sand production and allow numerous reservoir sections to be tied together with a pressure-tight junction. The project was completed under budget and with a total completion time for both junctions of 6.8 days. Halliburton Energy Services is a business unit of Halliburton (NYSE:HAL).

"The installation of the trilateral well junctions at Troll in less than seven days was an important step in the development of this product. We are sure that these practices can be utilized in other fields on the Norwegian shelf and around the world," said Jorunn Saetre, country vice president for Norway, Halliburton Energy Services.

Norsk Hydro has chosen multilateral wells to reach the most inaccessible oil reservoirs at the Troll field, where the oil-bearing layers can be as thin as 10 meters. This requires the oil to be drained through long horizontal wells. By having several conduits reaching into the shallow reservoir, it is possible to produce more oil at a lower cost.

"The construction of a trilateral subsea well is a breakthrough in multilateral technology, confirming that even more branches can be joined together and provide a way to drain more oil from the Troll field and other complicated reservoirs in the Norwegian continental shelf," said Tor Madsen, section manager for petroleum technology - Troll Field, Norsk Hydro.

The first multilateral well installation from a floating rig was carried out at the Troll field in 1997 by Halliburton. An additional 16 multilateral wells have been installed in that field since that time, which has made it possible to increase production to rates once thought unachievable. The trilateral (three horizontal branches) well design is the most recent breakthrough. The third branch will make it possible to produce 1.5 million barrels of additional oil from the well, while keeping the well junction pressure tight and preventing sand from entering the well.

The multilateral project and the application of ITBS system technology in the Troll field have been nominated for the Offshore Northern Seas 2002 Innovation Award. The award will be presented by the Prime Minister of Norway during the ONS opening ceremony in Stavanger, Norway, on August 27, 2002.

Halliburton Energy Services provides products, services, and integrated solutions for oil and gas exploration, development, and production. Capabilities range from initial evaluation of producing formations to drilling, completion, stimulation, and well maintenance -- for a single well or an entire field. With more than 300 service centers in more than 90 countries, Halliburton possesses the global perspective that is increasingly important for energy exploration and production.

Halliburton, founded in 1919, 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 Group and Engineering and Construction Group business segments. The company's World Wide Web site can be accessed at [www.halliburton.com](http://www.halliburton.com).

Norsk Hydro is a leading energy and materials company, based in Oslo, Norway. With more than 50,000 employees in 58 countries worldwide, Norsk Hydro's operations are divided into three main areas of expertise: Oil and Energy, Aluminum, and Agri. See more on [www.hydro.com](http://www.hydro.com).

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