

Orion Drilling will expand through newbuild rigs

A LAND DRILLING company recently formed by an industry veteran has its first rig operating and plans are to build as many as three more in the near-term. Right out of the gate, the company's first rig set a drilling record.

Orion Drilling Company was formed by **Wayne Squires**, the company's CEO. He was a partner in the original **Pioneer Drilling Company** that was purchased by **Southland Drilling**, with Southland adopting the Pioneer name. Orion Drilling immediately began designing its first rig with several equipment innovations as well as communications capability.

RIG DESIGN

The first unit, dubbed Eclipse, a 1,200 hp rig, was delivered and went to work just after Thanksgiving 2003, and already has set a drilling record. The rig established a drilling speed record for Colorado County, Texas, drilling more than 10,000 ft in only ten days. Mr Squires also noted that the Eclipse drilled from surface casing to 12,000 ft with only one bit. He attributes the drilling record and drilling performance



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to good crews and electronic monitoring of the rig's operations to establish optimal drilling parameters.

"The performance is a combination of rig design and the people," Mr Squires explained. "You have 5-in. drill pipe, 1,600 horsepower mud pumps and state-of-the-art Electronic Driller system. We also have a superior mud system and three shakers, so I think it was a combination of all that."

The rig incorporates numerous design innovations that result in better performance and safety. These include enclosed mud tanks with curved bottoms and level covering to prevent trips and falls. The rig has back-saver slips. The company has its own BOP hoisting system plus BOP winches under the floor. The drillers work in a climate controlled cabin with joy stick type controls. The company also plans to install hydraulic catwalks.

While the rigs will not initially have top drive drilling systems, they will be built so a top drive system can be easily installed, giving the operator a choice.

The rigs are hydraulically self-elevating, including the gas buster, shale shakers and sub-structure mast.

"All we do is raise the lights and handrails on top of the decks," Mr Squires said. "The shakers, desander and degasser are on a self-elevating skid so we don't have to worry about lifts."

"All we do is drop three skids and the SCR house, wire a couple of them, plug them together and we are done," Mr Squires explained.

That results in better safety. The Eclipse has been operating incident and accident free, a result of designing the rig to eliminate lifts. No cranes or gin



The drillers on Orion's rigs work in climate controlled cabins and perform the drilling operations with joystick controls. The rig is also monitored with Varco's Electronic Driller.

pole trucks are required to rig them up. Once the rig is set in place, everything is raised hydraulically.

That also means quicker rig moves. The rig recently moved from its first location in Colorado County to Matagorda and spud a well in 2 ½ days.

The Eclipse as well as the company's future rigs have DC systems rather than AC systems that were used on the Pioneer Drilling rigs. Mr Squires noted they are using DC systems because there is limited support for AC systems on land rigs.

Additionally, Orion Drilling utilizes the services of **Varco's Electronic Driller** and **M/D Totco's RigSense**. With the electronic driller, Mr Squires says, operating parameters are monitored 24/7, providing Orion with real time data transmission. Varco monitors the operations from a center near Austin, Texas, to maintain steady drilling conditions through improved control of the draw-work's disc brake. The Electronic Driller can maintain constant control parameters such as weight on bit, rate of penetration, delta-P or torque, and the communications with the rig enables Varco to switch between the control parameters.

"With the Electronic Driller," Mr Squires said, "we have tweaked the operating parameters via satellite. It doesn't override what the driller is doing, it just assists the driller."

The Eclipse also utilizes M/D Totco's RigSense monitoring system. "RigSense is a monitoring system that tells us how much mud we have in our pits," Mr Squires said. "It monitors volumes and pump strokes with an instrumentation system that is wired into our equipment."

All of the system monitoring on the rig can be viewed remotely via satellite at Orion's offices or other locations with a laptop computer. The operator also has the option of having the same monitoring system as the contractor. "The same pumps, strokes, rotary, everything the driller is doing on RigSense can be remotely monitored," Mr Squires said.

COMPANY EXPANSION

Orion Drilling's second rig is under construction with the derrick being manufactured now. The rig, to be named Halley's Comet, will be a 1,500 hp unit and is scheduled for delivery in about six months. The drawworks for a third rig has already been purchased and con-

struction on that rig, so far unnamed, should begin before year end.

The Eclipse was built at **IDM Equipment** in Houston but Halley's Comet will likely be built in Corpus Christi where Orion has an 8-acre shop and office facility. The main components will be manufactured in Houston.

Orion can build its rigs for approximately \$4 million a copy, much less than its competition, according to Mr Squires. The company is seeking to have masts and substructures manufactured in China, and even with transportation costs to Corpus Christi it's still about one-third the cost of buying the equipment domestically.

"If you can get a mast and sub built for a third of the cost and with similar construction," Mr Squires said, "that is one of the things you do to keep your costs down and be able to expand.

"You can put out a piece of equipment that is competitive to a \$12 million

drilling rig for a third of the price so you can afford to build a fleet," Mr Squires said.

"We will probably try to have four rigs in South Texas before we actually expand to other areas," Mr Squires said, "but we are looking at opportunities in other areas as we speak."

The company plans its expansion strictly around newbuild rigs because of the rig design and type of equipment it installs on the rig.

Rigs that cost less to build will also compete more effectively in lower dayrate markets. While Orion has drilled only turnkey wells so far with the Eclipse, the company plans to seek daywork contracts with the Halley's Comet.

The bottom line is that Orion Drilling will receive comparable dayrates as a company that spent three times as much money for a rig with similar performance. ■