



**Toro
Downhole
Tools**

One Motor — One Bit OK Mississippi Lime

Highlights

**Drilling in the OK
Mississippi Lime**

**Built with Toro's
Near Bit Kick Pad**

**Drilled the Curve
One Motor / One Bit**

**Drilled the Reach
One Motor / One Bit**

CHALLENGE:

A major Operating Company in Oklahoma was interested in drilling a horizontal well in the Mississippi Lime formation of northwestern Oklahoma. The challenge was to drill the curve with one motor and one drill bit, then drill the horizontal with one motor and one bit. Previous attempts with other downhole motor companies failed to meet the challenge. The Operator was understandably concerned as the cost to drill was increasing due to the number of trips required to complete the wells.

SOLUTION:

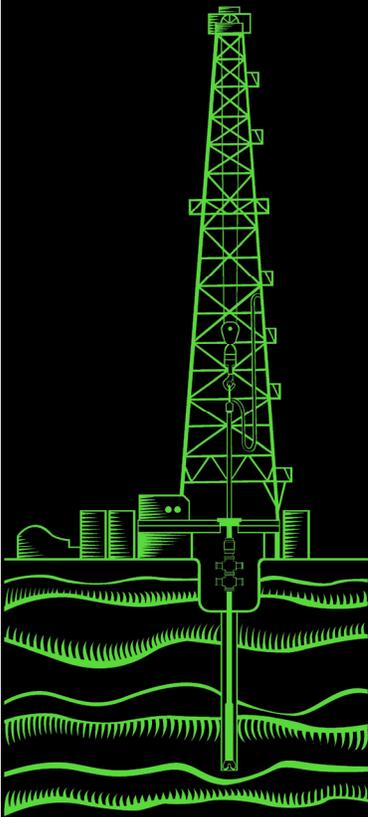
The Directional Company called for Toro's 475-9:10-3.5 Very Slow Speed Motors. Two motors were assembled under the watchful eye of TH Hill, Toro engineering services and Toro's own in-house inspection team. In an effort to increase build rates, the motors were assembled with a fixed bend housing and Toro's specially modified Near Bit Kick Pad. The Motors were sent to the drilling rig, ready to perform.

RESULTS:

Toro's 475-9:10-3.5 Very Slow-Speed Motor with a 2.23° fixed bend housing drilled the 698 ft. curve in 60.7 hours with a single rock bit — one Motor, one Bit! Subsequently, Toro's 475-9:10-3.5 Very Slow Speed Motor with a 1.79° fixed bend housing drilled the horizontal section in 173.25 hours with a 6 blade PDC drill bit — again, one Motor, one Bit!

OPERATOR VALUE:

The two Motors drilled over 4,000 feet, with an average ROP of 26.72' saving the Operator valuable time by eliminating unnecessary trips in and out of the hole. Toro's Downhole Motors were able to complete the challenge where other Motor Companies failed.



Reliable Tools / Proven Performance