



DRILLING CONTRACTOR
Akerman Horizontal
Well Drillers (HWD)

LOCATION:

Marcellus Shale,
Pennsylvania
and New York

WIRELESS DRILLING SYSTEM

Wireless Torque/Tension System (WTTS) Sub
Enables Improved Horizontal Drilling

BACKGROUND:

Horizontal Well Drillers (Purcell, Oklahoma) is bringing significant benefits to O&G Operators drilling in the shale plays through their innovative rigs providing the ability to increase production, improve access to reservoirs with extended reach wellbores, drill multiple wells from a single pad, and improving economics for marginal wells through greater reservoir depletion.

Akerman HWD and American Directional Drill has designed and built rack and pinion drives in the mast with a drilling envelope ranging from 500' to 13,000' vertical depth with combined ability to drill horizontal sections in excess of 7,000'. The new method of drilling is accomplished by using an innovative rig design including the rack and pinion system that allows the ability to both push and pull during drilling operations.

PERFORMANCE

The 3PS Wireless Torque/Tension System sub offers enabling technology in key areas that contributes to the higher performance achieved by the innovative HWD rigs:

- **PUSHING THE DRILL PIPE** – HWD rigs Rack & Pinion design enables the ability to push down up to 220 Tons on the drill string allowing kickoff at shallower depths while still reaching the long laterals required for shale drilling. These rigs use hydraulic power and do not have conventional wire rope draw works systems. The 3PS WTTS sub fits below the top drive and enables direct and accurate measurement of tension and compression to 500 tons and torque (either direction) to 50k ft-lbs during all operations.
- **ABILITY TO ROTATE AT ALL TIMES** – The HWD rig can rotate and circulate during drilling, pulling, back reaming and running casing, all important features of horizontal drilling. The 3PS WTTS sub enables accurate tension and torque measurements during all these operations.
- **ANGLED START** – Some HWD rigs can start the hole at angles up to 40 degrees off vertical, enhancing the ability to drill horizontally in shallow formations with larger drill pipe, which in turn allows setting larger size casing. The 3PS WTTS sub provides accurate torque and tension sensing at any mast angle.



FOR MORE INFORMATION:

Visit the **3PS** Website at www.3PSinc.com
or contact us at 512.610.5200



DRILLING EFFICIENCY

The 3PS WTTS sub is improving rig operations on the HWD rigs with additional benefits:

- **RIG TIME** – The WTTS rigs up quickly and easily without wiring or hydraulic lines to get in harm's way, and is not affected by winter temperatures. Transmitter and receiver can be separated by up to 150 ft. and transmission at UHF frequencies avoids interference in RF rich environments.
- **ROP PERFORMANCE** – The combination of improved hook load accuracy (e.g. Weight-On-Bit accuracy) with improved torque accuracy and pump pressures are the essential ingredients for controlling ROP (rate of penetration). HWD now uses these tension and torque signals as the primary signals on the rig which in turn support improved drilling automation and less intervention by the Driller.
- **LESS TROUBLE TIME** – Improved accuracy and sensitivity has enabled the Driller with earlier detection of down hole problems, such as stuck pipe, reducing the risk of lost time and the potential loss of expensive down hole tools.
- **ACCURATE AND DURABLE** – Accurate torque readings enhance the Drillers ability to more quickly orient the directional drilling bent-sub tool face. The WTTS is reliable in low and high load ranges and is designed to withstand high shock, vibration, and physical abuse inherent in the harsh and hazardous operational environments. It is certified for hazardous use to CSA and UL standards.

3PS WTTS Sub Display



HWD Rig

