



DIRECTIONAL DRILLING



OVERVIEW



AS LEADERS IN DIRECTIONAL DRILLING, WE UNDERSTAND THE DEMANDING CHALLENGES YOU FACE. WHICH IS WHY OUR EXPERIENCED PROFESSIONALS DO WHATEVER IT TAKES TO GET THE JOB DONE SAFELY AND EFFECTIVELY.

MODE SHIFTING

The ability to communicate asynchronously with the down-hole transmitter through rotary or flow down linking provides an opportunity to request specific data from the MWD at pulse widths most suitable for real-time drilling conditions. This technique can be applied to eliminate the need for additional down-hole restriction as well as making “one run” jobs dramatically more efficient from a data transmission standpoint.

DYNAMIC SEQUENCING

The ability to transmit only pertinent data, by employing second generation sensors the tool can evaluate its rotational status and transmit a non-uniform gamma sequence. This will eliminate tool faces during rotation and transmit only gamma at a density of 1 count per foot at 350 ft./hr. when using 8 resolution and .6 second pulse width.

HIGH DATA RATE

With the ability to generate a larger amplitude pulse, decoding shorter pulse widths has become possible. This has allowed us to reduce the time required to transmit a traditional survey by more than half with no loss in data resolution. While drastically reducing survey times, this same technique is applied to all steering and logging data throughout the well.

PREDICTIVE INCLINATION

The ability to transmit an unqualified inclination while rotating with $\pm 0.5^\circ$ of accuracy. In a moderate dip well this lateral tool will function within 3° of horizontal and enables a driller to identify a trend, well before a survey point. This will lead to shorter duration slides and reduced DLS for an overall smoother wellbore.

ROTARY SKIP

This function allows a driller to rotate during the tool's transmit delay causing the gamma logging sequence to begin immediately should there be a flow off cycle but no survey is required.

TOOL IDLE

If a survey is not needed or steering is not required for an extended period, the driller can spin the rotary during the transmit delay and essentially put the tool to sleep. While situations that call for this are rare, the need to circulate gas for many days for example would allow battery preservation for times well beyond the normal life of the tool.

MEASUREMENT WHILE DRILLING

LANDMARK COMPASS DIRECTIONAL WELL PLANNING SOFTWARE

LANDMARK COMPASS ANTI COLLISION SOFTWARE

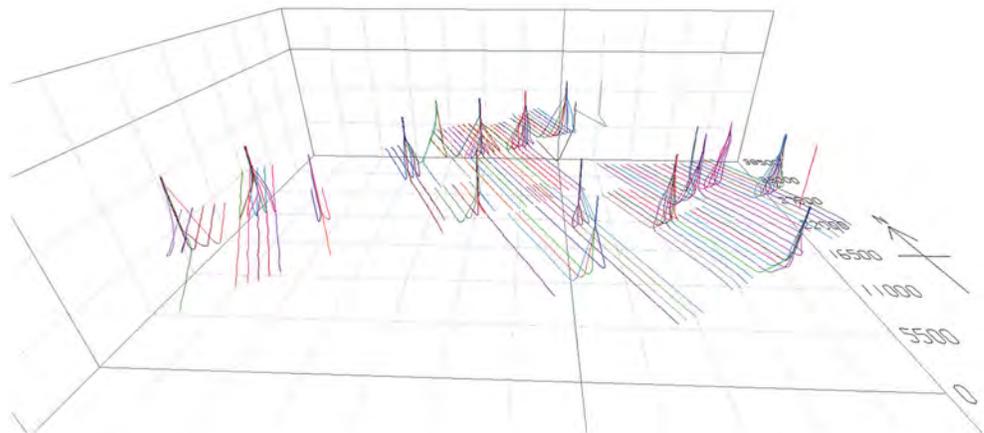
24-7 ON CALL WELL PLANNING & OPERATIONS TEAM

DAILY REPORTS & PLANNED VS. ACTUAL REPORTS EVERY MORNING

Utilizing the latest well planning software, while consulting with our senior management team, allows QES's well planners and directional coordinators to provide our field personnel with the necessary information to begin the drilling operations.

All of our field personnel are equipped with the necessary hardware and software to continuously monitor and direct the directional drilling operation. On or off location, our field personnel, coordinators and supervisors are always available to assist our customers or answer any questions they may have.

Accurate, detailed reports are provided to our customers on a daily basis during the operations, and at the end of the job, a detailed completion report is delivered to the customer.





QES'S MEASURING WHILE DRILLING (MWD) SERVICES ARE EQUIPPED WITH A BROAD RANGE OF WELL-PLACEMENT TECHNOLOGY AND INNOVATIVE SOLUTIONS TO FACILITATE COST-EFFECTIVE DRILLING. QES OFFERS ADVANCED MWD TECHNOLOGY THAT ALLOWS DRILLERS TO TAKE DIRECTIONAL SURVEYS IN REAL TIME, PROVIDING CRITICAL DATA AND OTHER COMPLEMENTARY SERVICES TO HELP OUR CUSTOMERS REACH THE INTENDED TARGET ZONE MORE EFFICIENTLY.



DIRECTIONAL ELECTRONICS MODULE

Rugged field proven directional sensor with self contained k-table and independent power control for magnetometers and accelerometers.

INTELLIGENT PULSER MODULE

Our pulser modules use intelligent electronics and superior design to greatly improve performance while continuing as the most efficient pulser on the market.

VIBRATION MODULE

Self contained vibration and shock module with real time recording capability.

GAMMA MODULE

Our gamma logging tool has become the industry standard for geosteering and MWD.





Quintana Energy Services LP is a growth-oriented company formed to provide a wide range of completion, production and drilling services to land-based exploration and production customers operating in unconventional resource plays and conventional basins throughout the U.S.

Denver, Colorado
303.542.1935

Oklahoma City, Oklahoma
405.789.3499

Odessa, Texas
432.563.0200

Willis, Texas (HQ)
936.856.4332

Morgantown, West Virginia
304.777.2310

Casper, Wyoming
307.472.7400

[DIRECTIONALDRILLING@QUINTANAENERGYSERVICES.COM](mailto:directionaldrilling@quintanaenergyservices.com)