

DIRECTIONAL DRILLING

STATE-OF-THE-ART TOOLS AND
NEXT-LEVEL SERVICE FROM THE
EXPERTS AT KLX



OVERVIEW

AS LEADERS IN DIRECTIONAL DRILLING, WE UNDERSTAND THE DEMANDING CHALLENGES YOU FACE. WHICH IS WHY OUR EXPERIENCED PROFESSIONALS ARE ALWAYS READY TO GET THE JOB DONE SAFELY AND EFFECTIVELY.

CAPABILITIES

CONSTANT INNOVATION IS A GIVEN WITHIN THE FIELD OF DIRECTIONAL DRILLING. THAT'S WHY KLX IS COMMITTED TO MAINTAINING EXPERTISE ON ALL THE LATEST TOOLS, TECHNIQUES AND APPLICATIONS, SO WE CAN CONFIDENTLY ADDRESS THE NEEDS OF EVERY PROJECT.

MODE SHIFTING

Request specific data from the MWD in real time and communicate with the downhole transmitter asynchronously through rotary or flow down linking. This technique can be applied to eliminate the need for additional down-hole restriction and streamlines data transmission for "one run" jobs.

STICK SLIP AND MODAL ANALYSIS

We have developed a first-of-its-kind device that instantly evaluates BHA rpm and quantifies stick slip and destructive dynamics. This fully retrievable instrument is located in the MWD tool string and records shock, vibration and temperature data in ultra-high resolution.

DYNAMIC SEQUENCING

Eliminate tool faces during rotation and transmit only pertinent data. Dynamic Sequencing grants the tool the ability to evaluate its own rotational status, employing second-generation sensors to transmit a non-uniform gamma sequence. These gamma transmissions take place at a density of 1 count per foot at 350 feet per hour while using 8 bits of resolution and .6 second pulse width.

CONTINUOUS INCLINATION & AZIMUTH

Shorter slide durations can produce a smoother wellbore with reduced torque and drag. These features allow for a more accurate representation of wellbore tortuosity and dogleg severity, as well as the means to mitigate them. With accuracies of $\pm .01^\circ$ for inclination and $\pm .02^\circ$ for azimuth, drillers can now identify build or turn trends without the need to stop for check-shots or conventional surveys.

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. This same technique is applied to all steering and logging data throughout the well, drastically reducing survey times.

PWD AND AZIMUTHAL GAMMA

PWD tools provide accurate, real-time downhole annular, pipe and differential pressures. This gives drillers a more complete understanding of the dynamic downhole environment and Equivalent Circulating Density (ECD). Get easy integration of established and emerging technologies with our open platform MWD systems. Similarly, azimuthal gamma provides a broader picture of the wellbore position by tracking the tool's orientation—rotating and transmitting gamma in multiple sectors. This not only allows drillers a more accurate formation boundary evaluation, it also enhances geosteering capability—all while being fully retrievable.

MEASUREMENT WHILE DRILLING (MWD)

KLX'S MWD SERVICES INCLUDE A BROAD RANGE OF WELL-PLACEMENT TECHNOLOGY SUPPORT COMPLETE WITH INNOVATIVE SOLUTIONS TO FACILITATE COST-EFFECTIVE DRILLING.

LANDMARK COMPASS SOFTWARE

Our field personnel begin drilling operations with confidence. That's because we utilize the latest well planning and anti-collision software to make sure well planners and directional coordinators can provide the necessary information for each project.

24-7, ON-CALL WELL PLANNING & OPERATIONS TEAM

Whether they're on or off location, our field personnel, coordinators and supervisors are able to continuously direct and monitor the directional drilling operation—always available to assist our customers and answer any questions they may have.

GET ACCURATE DAILY REPORTS

It's important to stay up to date and informed with accurate reports. That's why we provide our customers with detailed daily reports and a detailed completion report throughout operations and at the end of the job.

MWD TECHNOLOGY

OUR TECHNOLOGY ENABLES REAL-TIME DIRECTIONAL SURVEYS, PROVIDING CRITICAL DATA AND OTHER COMPLEMENTARY SERVICES TO HELP OUR CUSTOMERS REACH THE INTENDED TARGET ZONE MORE EFFICIENTLY.

DIRECTIONAL ELECTRONICS MODULE

This rugged and field proven directional sensor includes a self contained k-table and independent power control for magnetometers and accelerometers.

INTELLIGENT PULSER MODULE

As the most efficient pulser module on the market, our technology uses intelligent electronics and superior design to greatly improve performance.

VIBRATION MODULE

This self-contained vibration and shock module is complete with the real-time and recording capabilities.

GAMMA MODULE

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

K-SERIES MUD MOTOR

Balancing performance, efficiency and durability, the K-Series features a robust transmission/mandrel and proprietary design that delivers a strong build rate, fights fatigue on extended laterals and maximizes uptime. This high-performance equipment brings Next Level Readiness downhole with limitless options that let you make changes on the fly, customize downhole geometry/harmonic maximization and choose from a wide range of sizes (3.5 to 9.63 inches).

KLX Energy Services is the oilfield's most prepared service provider. We're always ready with a wide range of completion, production and drilling services for exploration and production customers operating in unconventional resource plays and conventional basins throughout the U.S.

DIRECTIONAL DRILLING LOCATIONS/OFFICES

Oklahoma City, Oklahoma
405.702.0440

Odessa, Texas
432.563.0200

Willis, Texas
936.856.4332

Bridgeport, West Virginia
304.842.3829

Casper, Wyoming
307.472.7400

www.klxenergy.com



NEXT LEVEL READINESS >