JOURNAL OF PETROLEUM TECHNOLOGY • www.spe.org/jpt March 2018

JPT

FRACTURING'S NEW CHALLENGES

HYDRAULIC FRACTURING
PRODUCTION MONITORING/SURVEILLANCE
HEAVY OIL
SEISMIC APPLICATIONS

FEATURES

Mexico Deepwater Auction
Oilfield Service Recovery
Integrated Operations Trend

Fig. 3—The Geometrix 4D Shaped Cutter line from Halliburton uses shaped cutting structures to optimize drilling performance for specific applications.

as CH_4. The microprocessor-based analyzer is controlled by a fully integrated system software. The analyzer's data-collection features include chromatograms and user-definable options for exporting data to logging software. The PetroAlert's automatic calibration feature is ideal for unattended operation. The instrument's compact size and design allow for either a 19-in. rack-mount configuration or benchtop use.

For more information, visit www.baseline-mocon.com.

Rig-Movement Accelerometer

On floating drilling rigs, heave movement hampers the accurate analysis of critical return-flow measurements. This heave effect leads to the movement of the telescopic joint into the riser, consequently displacing the drilling mud into the return flowline. These movements introduce variations in return flow that mask the true flow responses from the well. GEOLOG has introduced an accelerometer that is located at the center of gravity of the installation and continuously measures the rig movement under the heave while using a predictive algorithm that computes and compensates the flow variations induced by the pump effect of the telescopic joint. The system has a self-tuning feature that adapts to change in heave height and period in real time with no additional operator input required. This application has been used with major operators drilling in deepwater West Africa and Europe. Once the predictive system's operating parameters are acquired, GEOLOG is able to detect and measure the flowout component caused by the rig's heave movement in real time. This is then eliminated from the flowout measurement that is already normalized for drillpipe displacement and changes in circulating parameters to derive a true heave-compensated flowout measurement. The system continues the tuning process, adapting to changes in heave height and period in real time.

For more information, visit www.geolog.com.

Production-Forecasting Service

BetaZi Basin Studies provides bundled, prerun production forecasts on every well in a basin loaded onto an interactive Spotfire project. It uses TGS data and BetaZi's proprietary physics-based predictive analytics to give users easy access to public data, tested forecasts, type curves on the fly, and basic economics. The product is a response to the availability of big data sets and the need to see every well's past and future instantly. The company's partnership with TGS for data, delivery, and support makes the offering optimal for the industry. Basin Studies brings deep-dive capabilities to producers, investors, and lenders who need an instant, unbiased evaluation of an asset's future production. The forecasts offer bounds that provide needed context of future outcomes. Oil and gas well forecasts with their P10 to P90 distributions are visualized by color and size on maps and graphs, with quick-click filtering by any parameters of interest. Results and data are downloaded easily to economic programs or as Excel spreadsheets. Forecasts are rerun and studies are updated monthly.

For more information, visit www.betazi.com.

Shaped-Cutter Line

Halliburton introduced Geometrix 4D Shaped Cutters, a line of four distinct geometric profiles to help improve cutting efficiency and increase control to reduce drilling costs (**Fig. 3**). Geometrix cutters expand the capabilities of traditional polycrystalline diamond materials by shaping the cutting structure to optimize drilling performance for specific applications. Traditional flat cutters generate heat and wear, which slow drilling progress because operators must frequently check or replace damaged bits. The new line includes the Chisel Plowed Scribe Cutter for brittle formations such as carbonates, the Chopper Plowed Cylinder Cutter for increased heat dissipation in high-energy drilling operations such as shale formations, the Dagger Multi-Plowed Cutter with fluid channels to improve cleaning and prevent plugging around the cutter face, and the Machete Optimized Tip Geometry Cutter for use in formations that require high point loading. In a recent offshore job in Mexico where an operator was drilling a limestone/shale formation, the Geometrix bit doubled the rate of penetration over a 700-m section, saving the operator 3 days of drilling time compared with offset wells. **JPT**

For more information, visit www.halliburton.com.