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New Life in ALASKA

COILED-TUBING APPLICATIONS
MATRIX STIMULATION
WELLBORE TUBULARS
EOR OPERATIONS

FEATURES

Shale Attracts Automated Rigs

Austin Chalk Revival

Fracturing Designs That Hit Targets

Water Issues in the Permian and Bakken

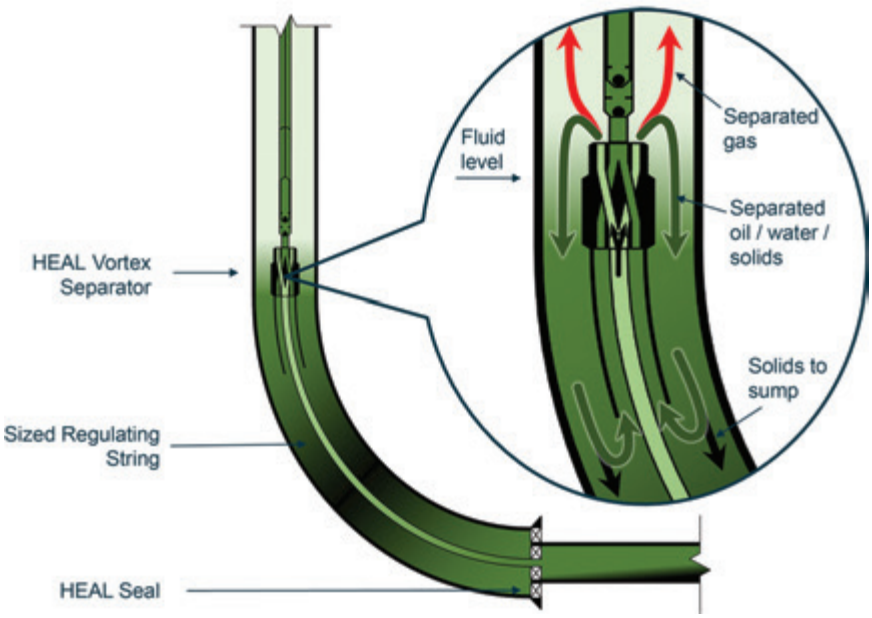

Fig. 3—Production Plus' HEAL Slickline System enables fewer, and simpler, artificial-lift transitions.

Fig. 4—The G9+ service from Geolog can characterize reservoir fluids in near-real-time.

numerous clusters. SandIQ is the result of GEODynamics' engineering and development efforts and is part of a broader perforating technology suite that allows operators to continuously improve well completions. GEODynamics offers engineering support for this continuous improvement process using software tools and step-rate-testing data provided by the operator.

For additional information, visit www.perf.com.

Slickline System

Horizontal wells are known to have production challenges as a result of inconsistent slug-fluid flow, damaging solids, and excessive gas interference. Production through the life cycle of these wells often requires complex and expensive artificial-lift strategies. Production Plus Energy Services introduced the retrievable Horizontal Enhanced Artificial Lift (HEAL) Slickline System, which provides greater access to the wellbore, easier installation, simpler integrity testing, and an economical protection solution for damaging offset interwellbore communication (**Fig. 3**). With no moving parts, the system easily joins to the horizontal as part of a standard well completion and is designed to perform for the life of the well. The system is part of a set of configurations that offers producers increased efficiency, more cost options, and the flexibility to enhance the performance of any artificial system, including electrical submersible pumps, rod pumping, progressive cavity pumping, and plunger lift through the life of a horizontal well. The products in the HEAL suite are designed to benefit a horizontal well's entire producing life—controlling fracturing flowback, extending the natural flow period, simplifying transitions between artificial-lift phases, lowering operating expenses, and eliminating costly intermediate artificial lift.

For additional information, visit www.pdnplus.com.

Fluid-Characterization Service

The average quality of discovered oil is decreasing through time, and oils with very different properties coexist in many wells. Consequently, good completion

Fig. 5—Weatherford's Raptor 2.0 cased-hole evaluation system offers multipoint oil and gas sensitivity calibration.

and flow-assurance strategies can guarantee more value from assets. A continuous oil-quality profile of a reservoir, produced at wellsite, can support important decisions for well completion, avoiding costly downhole sampling programs and lengthy delays waiting for lab results. Geolog's G9+ service can characterize reservoir fluids in near-real-time, with only a few minutes' delay, with low rates of penetration using low-cost thermal-extraction techniques formerly applied only in analytical laboratories (**Fig. 4**). This approach provides timely assessments of oil quality, including wax content, presence of biodegradation or water washing, and differentiation of oil intervals with different American Petroleum Institute gravities, all without any additional rig time. The service delivers rapid measurements of the liquid hydrocarbons in the range of C_9–C_{27} from cuttings. Successful applications have been delivered in areas such as West Africa and the Middle East, where both heavy and high-quality oils commonly occur in the same intervals.

For additional information, visit www.geolog.com.

Cased-Hole Evaluation System

The Weatherford Raptor 2.0 cased-hole evaluation system defines the location of oil and gas within inches and volume within a few saturation units. The system provides reliable saturation data that guide reservoir-rejuvenation programs (**Fig. 5**). It can also be deployed as an alternative to traditional openhole wireline logs in new wells. The system includes the only five-detector-array pulsed neutron tool in the world, which enables 250% more gas-saturation measurement sensitivity compared with two-detector tools. The Raptor tool is the only pulsed neutron tool that offers multipoint oil and gas sensitivity calibration, which provides factory-specification logging performance before each job. Once raw data reach the surface, the information is analyzed by dedicated production petrophysicists with an integrated single-well response characterization, four-detector mixing, and transparent petrophysical processes and software. At any point in the process, the client is able to confer with the production petrophysicist to see the analysis behind the answers. The system offers a variety of fluid-saturation answer products—including carbon/oxygen, sigma, and three-phase techniques—along with an array of specialty answer products. **JPT**

For additional information, visit www.weatherford.com.