OVERVIEW

Operators producing heavy crude oil and bitumen require in-situ thermal recovery techniques such as steam-assisted gravity drainage or (SAGD) development in order to recover hydrocarbons. This process requires parallel stacked horizontal wells to be drilled into the reservoir just a few meters apart from one another with a high degree of accuracy. Steam is continuously injected into the upper wellbore (injector) to heat the oil, thereby reducing its viscosity and resulting in the heated emulsion draining into the lower wellbore (producer), where it is pumped to surface. When drilling in these formations, operators seek to overcome the following challenges: high infrastructure and operational costs, large pad design and wide slot spacing, uncertain well placement, and downhole equipment that cannot operate in high-temperature environments.

The Aurora™ surface-access magnetic ranging service, designed for SAGD applications, utilizes surface excitation to determine a ranging distance and direction relative to the drilling wellbore. An industry first, it connects to the target wellbore via the wellhead, whereas legacy tools require downhole access via wireline conveyance systems to deploy a magnetic source. The Aurora service allows operators to eliminate the need for wireline ranging conveyance, thus reducing rig time; operation costs; and health, safety, and environmental (HSE) risks. Another feature of the service is the reduced surface footprint, which reduces HSE risks and allows operators to install more wells on a pad, thereby maximizing asset value through increased production and lower costs per barrel of oil equivalent (BOE) in SAGD field development.

FEATURES

» Connection to the target wellhead via the surface instead of downhole (limited access)
» No wireline conveyance (removes tractor or e-coil)
» Reduced surface footprint
» Parallel ranging with real-time survey accuracy qualifiers
» Readings integrated into the drilling bottomhole assembly (BHA)
» Available in 8-inch and 6¾-inch sizes

BENEFITS

» Remove logistical challenges by obtaining downhole access to wellbores
» Reduce wireline costs by removing the need to convey a magnetic source downhole
» Eliminate equipment and personnel from surface operations, thus reducing HSE risks and surface infrastructure costs
» Increase production and returns by placing more wells per pad
» Maximize reservoir recovery through accurate well placement

Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.