

ALD™ Azimuthal Lithodensity Service

OPTIMIZING WELL CONSTRUCTION WITH HIGH-QUALITY DENSITY MEASUREMENTS AND FORMATION IMAGES

OVERVIEW

The ALD™ azimuthal lithodensity service provides reliable measurements that are suitable for a wide range of petrophysical and geological applications. The ALD service allows real-time formation imaging in oil-based and water-based mud systems, providing accurate density for reservoir evaluation, high-quality borehole images for structural dip interpretation and better geosteering decisions, and hole-shape measurements for borehole stability applications.

As the ALD tool rotates, the density, photoelectric (Pe) absorption, and acoustic standoff data are acquired in 16 azimuthally oriented sectors or bins, referenced to the high side of the borehole or magnetic north. The azimuthal data can be presented as conventional log curves or borehole image logs in real time.

ALD image logs reveal borehole shape and hole spiraling, and can help to assess stress-induced breakout. ALD tools come in a wide range of sizes, suitable for boreholes between 5½ and 14½ inches in diameter, and include the first and only logging-while-drilling (LWD) density service mounted on a 9½-inch drill collar. Most sizes include an acoustic standoff transceiver mounted in line with the scintillation detectors to provide direct measurements of standoff, borehole diameter, and borehole geometry for a better evaluation of borehole quality.

MAXIMIZE ASSET VALUE THROUGH VERSATILE DENSITY MEASUREMENTS

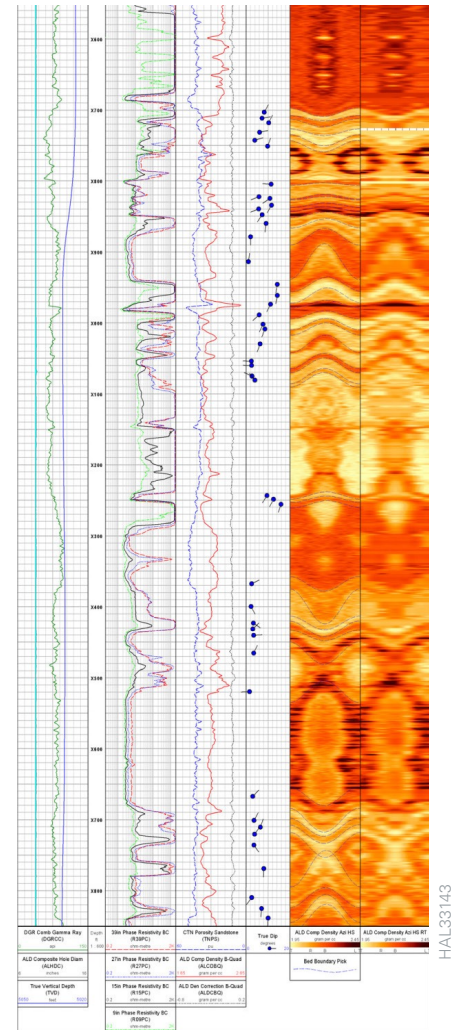
The ALD service provides high-quality measurements that add value to multiple aspects of the well construction process, from gaining a better understanding of the lithology and accurately evaluating reserves, to helping mitigate borehole stability problems and accurately placing the well in the target zone.

BENEFITS

Drill to Produce

- » Refine the Earth model by measuring structural dip in real time
- » Optimize wellbore placement through precise geosteering

For more information, contact us at sperry@halliburton.com or visit us on the web at www.halliburton.com



North Sea data provided by a 6¾-inch ALD™ sensor. A 16-bin real-time image is shown to the right of the 16-bin recorded image.

Enhance Reservoir Understanding

- » Acquire accurate density and Pe logs, even in enlarged boreholes or with bi-center bits
- » Identify and evaluate gas zones (with CTN™ compensated thermal neutron sensors)
- » Acquire real-time formation images in oil-based or water-based mud systems
- » Improve understanding of mechanical rock properties (with the QBAT™ or XBAT™ sonic sensors)

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.

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