

## Headline: **Cornell Wireline Cased-Hole Logging: Monitor Your Wells and Maximize Their Production**

Mysteries have their place in this world. A late-night mystery movie on TV or a page-turner of a mystery novel can be delightful diversions.

But mysteries don't belong in the oilfield.

Lack of knowledge about the condition of a well can be dangerous, and increases the risk of diminished production. That's why the cased-hole logging services provided by Cornell Wireline is such an important tool in maximizing production and profits.

Cased-hole logging can be used to determine the condition of a well and to discover problems that may contribute to declining production. Logging data can be used to guide decision-making that directly impacts production and profits - including determining when the time has come to abandon a well.

Put simply, our cased-hole logging services will remove the mystery and guesswork from the decision-making process. And making the right decisions at the right time is key to maximizing a well's production and profits.

### **Cornell Wireline's Cased-Hole Logging Service Deploys State-of-the-Art Technology**

Our customers depend upon our ability to provide a range of information about the condition of their wells. That's why we combine tried-and-true methodology with cutting-edge technology in building a comprehensive data collection for each well we log.

Our cased-hole logging downhole equipment includes:

- **Casing Collar Locator:** Registers the increase in metal mass that indicates the location of casing collars. Provides depth correlation that provides a reference for future logging runs, and helps to ensure accuracy in comparing the results of multiple runs. Can also help to detect flaws in the casing.
- **Gamma Ray Tool:** Measures radioactive isotopes emitted from the formation surrounding a well. This data helps to identify the formation at various well depths, and also provides a reference for correlating past, present and future logging runs.
- **Radial Cement Bond Tool:** Used to evaluate both the quality and the integrity of the bond between the well casing and the formation. This data can be critical in ensuring that well fluids will not leak to the surface, and

that water-bearing zones within the formation will remain isolated from production zones. The data provided by this tool can also be used to help evaluate the structural integrity of the casing. (Our RCBT equipment includes tools with large outer diameter capability.)

- **40- and 60-Arm Caliper Tool for Casing Inspection:** Multiple feeler arms provide a highly accurate evaluation of casing condition. Can be used for early detection of production-reducing problems such as scale buildup or aggressive corrosion problems. Also used to evaluate drilling wear, detect casing anomalies such as splits or cracks, and monitor for casing deformation caused by geomechanical stresses.
- **Noise Tool:** Microphones are used to detect movement of fluids both inside and outside the casing. Fluid movement can indicate problems such as leakages into or out of the casing, and blockages within the casing. Also can be used to help identify the type of flow (gas or liquid) emanating from casing perforations.
- **Compensated Neutron Log Tool:** This tool emits neutrons that constantly bombard the surrounding formation as the tool travels along the length of the casing. By monitoring the rate of return of neutrons that bounce off of varying elements within the formation, the tool can create a record of formation porosity behind the casing. The tool can also be used to help detect the presence of gas deposits.