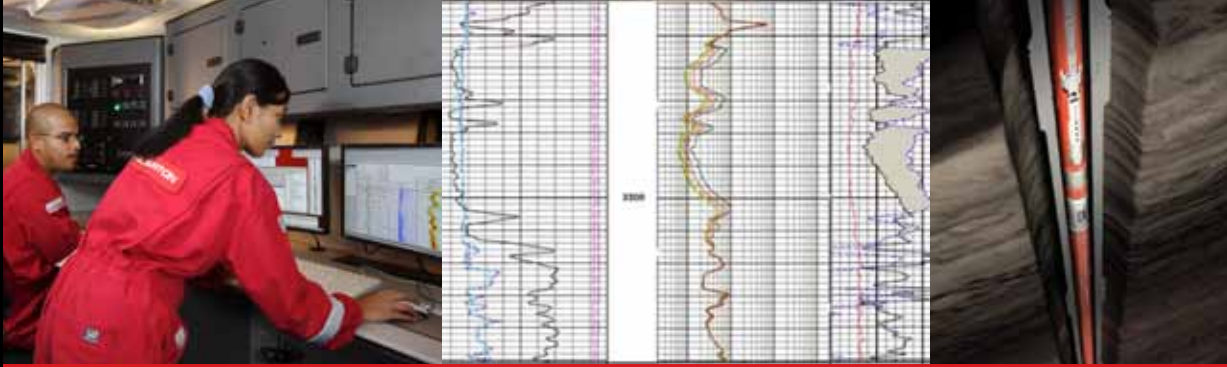


Improving Data Quality in Challenging Wells



UltraSlimSM Logging Services

Solving challenges.™

HALLIBURTON

Wireline & Perforating

High-Quality Logging, Now in a Smaller Package

Halliburton's new UltraSlim logging service delivers the same, high-quality data you would expect to get from full-size tools. But UltraSlim tools have a much smaller 2.35-inch diameter. And every UltraSlim logging tool is fully characterized, which means that you never have to choose between data fidelity and tool size.

UltraSlim™ Tools for Full-Size Wellbores

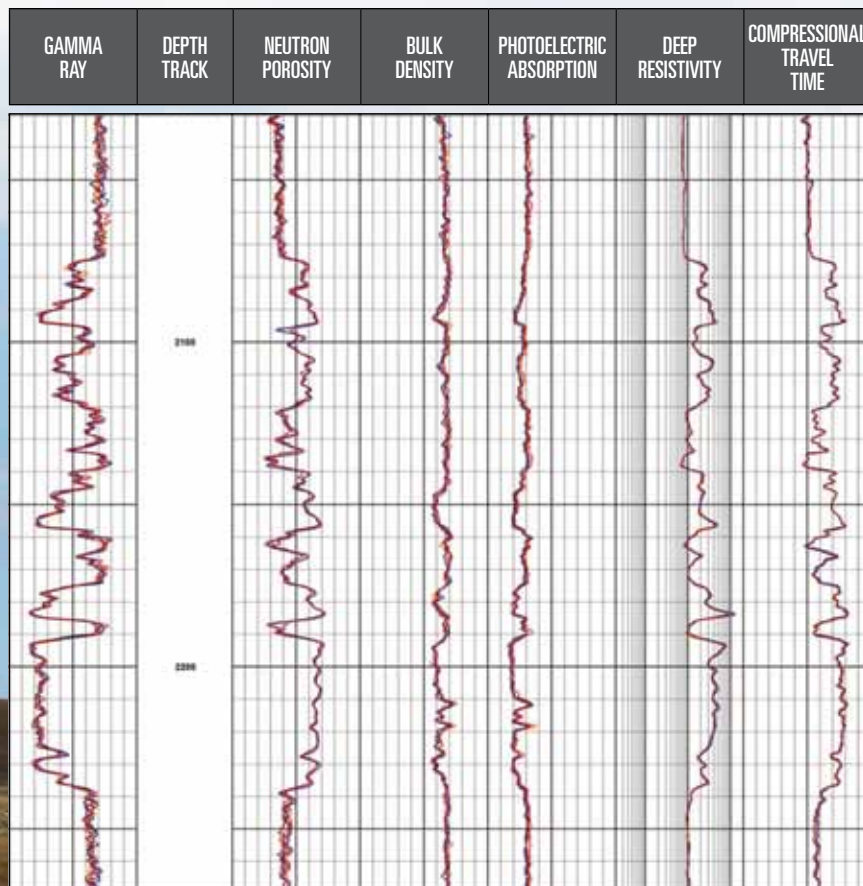
Full-size logging tools typically have a very narrow gap between the tool and the wellbore. By their very nature, UltraSlim tools have a much larger gap. To compensate for this, we have an extensive library of environmental characterizations. These allow for real-time corrections to be applied to the tool responses, providing high-fidelity logging data that perfectly matches the full-size tools.

The Most Characterized Slimhole Tool in the Industry

Other companies offer small-diameter tools, but nobody has the level of characterization that we do. That's why we're the only company that can deliver data from UltraSlim tools with the same quality as conventional tools.

Our UltraSlim logging tools are fully characterized for:

- Hole Size
- Mud Weight
- Mud Type
- Potassium Content of Mud
- Centered / Eccentered

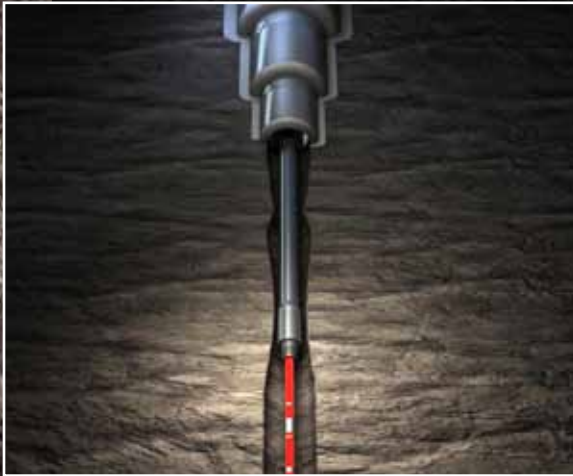


This log illustrates two passes from two different UltraSlim™ quad-combo tool strings (four passes in all) together with data from a LOGIQ® quad-combo run. All UltraSlim logging passes were recorded at 45 fpm, while the LOGIQ data were recorded at 30 fpm. The high-fidelity UltraSlim logging data perfectly matches the full-size tool data.

High-Quality Logging for Challenging Applications

Halliburton's UltraSlim logging services combine high-fidelity data gathering capabilities with an extremely small OD that allows operators to log challenging wells without compromising data quality.

The UltraSlim logging services can be used in many situations where standard-sized tools would be too large or too heavy to complete the job.



Bypass Cave-Ins or Well Obstructions

Because the UltraSlim logging service can operate through drillpipe, operators can log large-diameter holes that may have cave-ins or obstructions. The drillpipe is tripped in to cover up the section of bad hole. Then the UltraSlim logging tools can navigate that section inside the drillpipe and can successfully log the open hole deep down.

Squeeze through Tortuous High-Angle Wells

Large-diameter or conventional logging tools are difficult to navigate through severe doglegs. But UltraSlim logging tools can be run anywhere the drillpipe can reach, giving operators access to every section of the well.



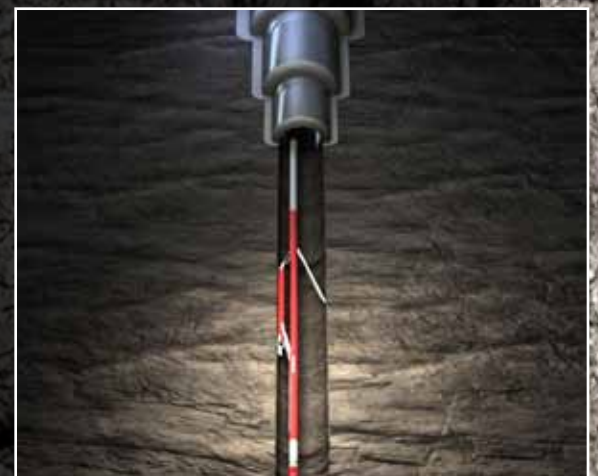
Pump Down into Long Horizontals

To log long horizontal sections, which are common in unconventional wells, most logging tools have to be attached to pipe and pushed into the well. UltraSlim logging tools can be pumped through the pipe, greatly reducing the time needed to log the horizontal section of a well.



Acquire High-Quality Data in Small-Diameter Wells

Some wellbores are simply too small to allow for conventional logging tools. Since UltraSlim logging tools deliver the same data quality in a fraction of the size, they're ideal for conventional wireline operations in small-diameter wells. They have both real-time logging capabilities and the option of recording data in memory mode.



Conveyance for Enhanced Versatility

Intelligent Deployment for Intelligent Tools

Halliburton's UltraSlim logging service uses tools that are small enough to get into the most challenging wells. But the intelligent deployment capabilities give UltraSlim tools the edge.

Pump-Down through Pipe to Avoid Wear and Tear

Some competing slimline logging services attach the tools directly to the drillpipe while tripping in, subjecting them to constant vibration. That can damage the tools, sometimes requiring a second trip to acquire the data.

Halliburton's UltraSlim tools are pumped down once the drillpipe is in position. The last tool on the string is designed to catch onto the end of the pipe, so the hole can be logged as the pipe trips out. This greatly reduces the chance of damaging a tool, so you can be confident that you'll get high-quality data on the very first run.

Self-Diagnostics Ensure Tools are Ready for Action

Before the UltraSlim logging tools detach from their wireline cables and begin logging in memory, they enter a self-diagnostic mode. This runs the tool through tests that ensure the sensors, memory and mechanical components are operating correctly. Once the self-diagnostic is complete, the tool detaches from wireline, signaling that the logging operation is ready to begin.

This self-diagnostic capability prevents wasted logging trips with tools that may not be working correctly, avoiding unnecessary trip time, NPT and project delays. It also gives the operator confidence that the data collected will be as accurate as possible.

Slim Logging Tools without Compromising Data Quality

With UltraSlim logging services from Halliburton, you can easily achieve reliable logging in challenging applications with data quality you expect from full-size tools. No other company offers the same portfolio of highly characterized small-diameter tools.



Once the self-diagnostic tests are complete, the UltraSlim tool automatically detaches from the wireline.



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www.halliburton.com/ultraslim

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