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OPTICall

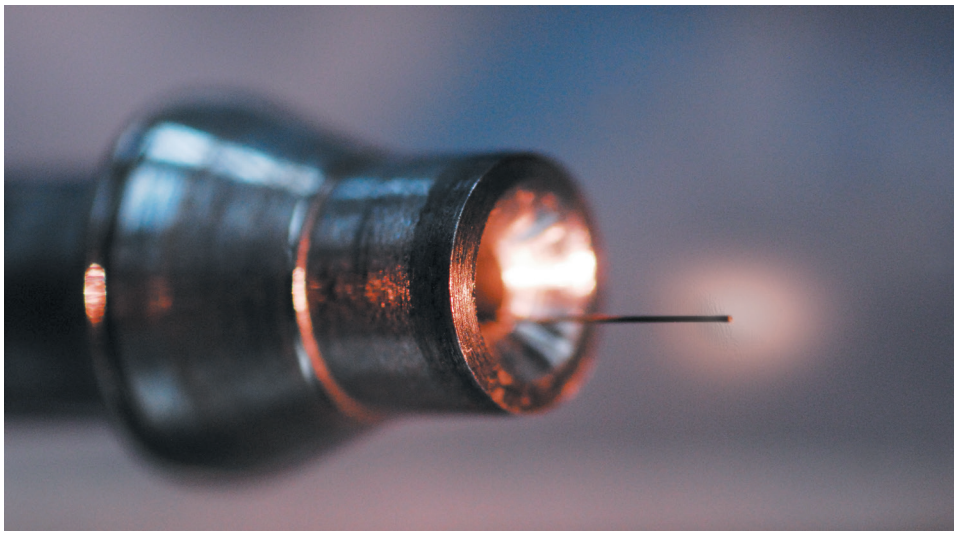
Thermal profile and investigation service

APPLICATIONS

- Monitoring
  - Gas lift valves
  - Oil and gas well production profiles
  - Water-injection profiles
  - Geothermal reservoirs
  - Hydraulic fracturing
- Evaluating acid placement
- Diagnosing well integrity
- Identifying
  - Cement tops
  - Crossflow between zones
  - Flow outside casing
  - Other flow- and wellbore-related events
  - Detecting leaks

ADVANTAGES

- Saves time by allowing problems to be quickly identified and resolved
- Provides instantaneous, continuous measurements for the entire length of the line
- Allows real-time monitoring at the surface
- Deployed with conventional slickline systems



Fiber-optic line.

The OPTICall* thermal profile and investigation service combines the features of permanent fiber-optic distributed temperature sensing (DTS) systems and the ease of the use of standard slickline systems. The data is monitored continuously on the surface, allowing for quick interventions and well remediation immediately after the analysis and measurements.

There are no downhole electronics, so the system can be positioned close to high-power equipment without electromagnetic interference. The system's continuous self-calibration and the operator's laptop PC-based processor and signal-processing system help ensure accuracy, speed, and reliability.

Distributed temperature sensing on demand with single trip efficiency

Get the advantages of distributed temperature sensing through a line-conveyed service, when and where you need it. The OPTICall service delivers the only on-demand DTS available in the market. At your well quickly and deployed using slickline-type intervention, the OPTICall service uses the OpticLine* fiber-optic line for continuous, definitive data acquisition with minimal interference. Once the OpticLine fiber-optic line system is deployed, you'll get the quick answers you need for improved productivity. In addition to thermal profiling, the OpticLine fiber-optic line has the ability to run conventional production logging tools in memory mode, saving valuable rig time.

Immediate, continuous measurements

The OPTICall service provides continuous measurements by thermally profiling the wellbore along the entire length of the fiber-optic line simultaneously. The result is a complete picture of downhole activity that enables a quick analysis of decreased production. The OPTICall service quickly and efficiently tracks fluid movements for real-time evaluation of performance and diagnosis of production issues. With this low-risk, highly economic monitoring solution, you can detect leaks, monitor gas lift valve performance, and evaluate fractures through an easily deployed service.

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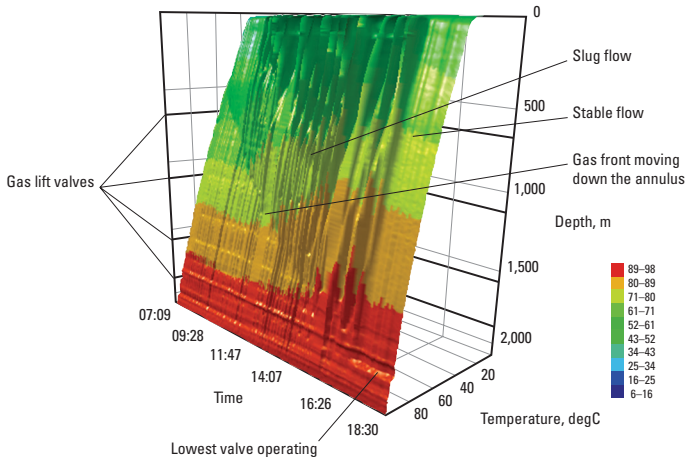
Answers at the wellsite

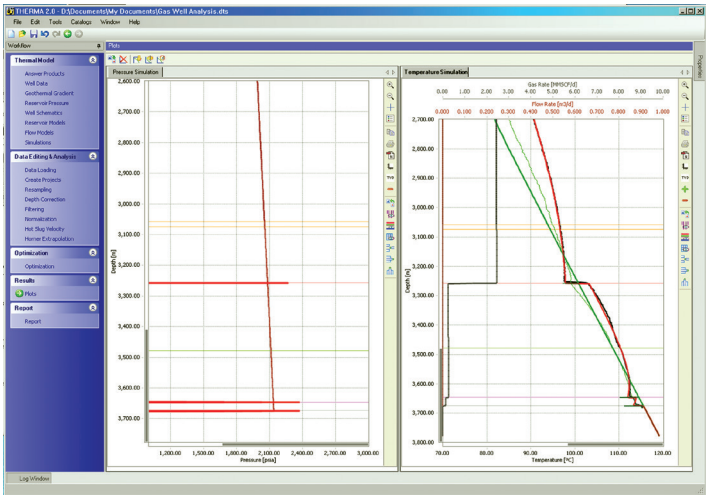
The immediacy of the OPTICall service results provides a distinctive advantage that saves time and money. As soon as the line is deployed, the data is instantly transported to the surface and can be analyzed on site. With no waiting for data analysis, many problems can be diagnosed quickly, and the best course of action for intervention can be followed. In addition to having immediate information for onsite diagnosis, you can request a more extensive field report for a more in-depth look at thermal events that indicate completion issues such as gas-lift malfunction or flow behind the casing.



THERMA thermal modeling and analysis software for wells and distributed temperature sensing model showing monitoring of gas lift valves during gas lift startup.*

Specifications	
Light source,† ns	10 every 3.28 ft [1 m] of line
Temperature analysis type	Raman scattering
Accuracy	0.18 degF [>0.1 degC]
Resolution	0.18 degF [~0.1 degC]
Spatial resolution	3.28 ft [1 m]
OD	0.125 in [3.18 mm]
Nominal operational load	1,000 lbf [4,448 N]
Nominal max. load	1,280 lbf [5,694 N]
Breaking strength	2,000 lbf [8,896 N]
Working pressure rating	15,000 psi [103 MPa]
Max. temperature rating	257 degF [125 degC]
Max. depth	20,000 ft [6,096 m]
Anticorrosive material	Incoloy® alloy for inner and outer tubing; carbon-weave jacket

† Pulsed Class 3 laser.



Using THERMA thermal modeling and analysis software, you can further assess well flow performance.*

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