

ACTive DTS

Distributed temperature measurement and inversion analysis

APPLICATIONS

- Coiled tubing interventions using ACTive* real-time downhole coiled tubing services

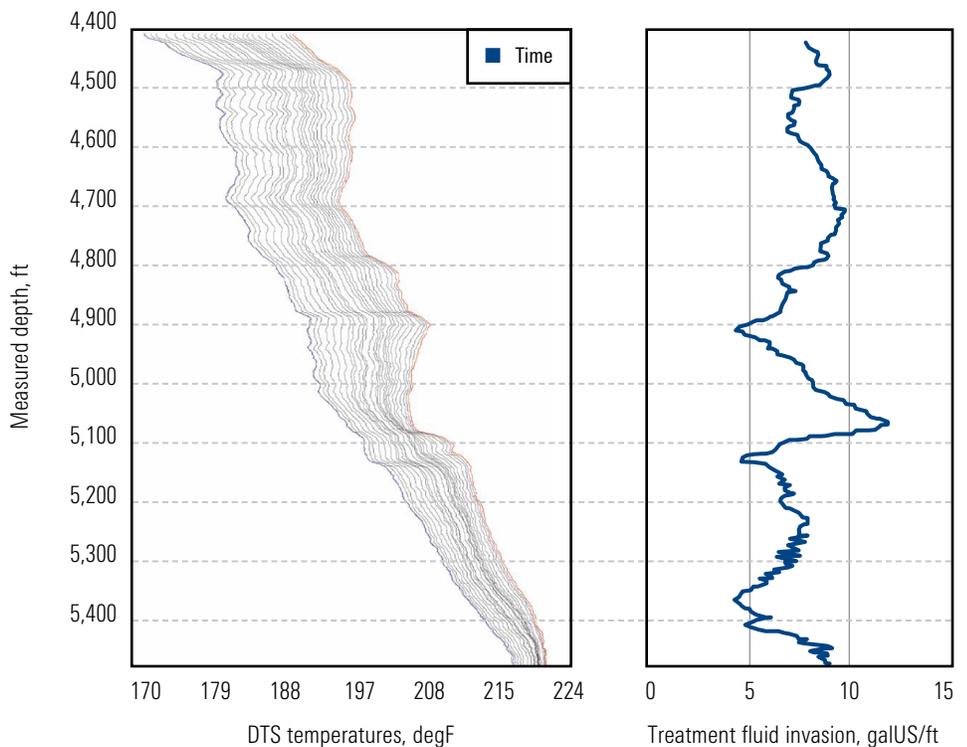
ADVANTAGES

- Shifts distributed temperature sensing (DTS) interpretation from qualitative to quantitative
- Provides an advanced analysis of DTS wellbore-temperature logs used for calculating
 - Flow contributions
 - Water-injection profiles
 - Fracturing effectiveness
 - Top of cement
 - Crossflow between zones
- Quantifies the fluid invasion profile for the pumping stage preceding the DTS acquisition
- Loads DTS data exported from THERMA* thermal modeling and analysis DTS software for wells with distributed temperature sensing
- Uses detailed menu items and module structure to account for reservoir properties and zoning
- Conducts sensitivity analysis with flexible simulation parameters
- Evaluates treatments involving multiple injections
- Saves results in Log ASCII Standard (LAS) digital data format that can be opened in the Techlog* wellbore software platform for analysis

Quantify treatments using real-time DTS measurements

DTS measurements rely on a laser beam and a continuous strand of optical fiber-optic technology to collect continuous temperature profiles along the length of the well. This technology has been used as part of ACTive services real-time CT interventions to monitor wellbore temperature evolution while pumping, as well as during shut-in periods. The tracking of temperature data down the wellbore, as well as the qualitative assessment of reservoir temperature warming or cooling—or lack thereof—during shut-in, has helped engineers gain insight into fluid placement performance and zonal coverage.

As part of ACTive Profiling* CT real-time production logging and distributed temperature sensing services, ACTive DTS* distributed temperature measurement and inversion analysis allows engineers to use DTS data acquired during real-time ACTive services interventions to quantify the intake profile of treatment fluid along the wellbore.



The DTS inversion process generates the fluid invasion profile (volume per unit length) across a selected interval based on the evolution of distributed temperature measurements, as well as key treatment and reservoir parameters.