STEP-IQ™ Fiber Optic Solutions Deliver Real-Time Data Accuracy and Value for Operators

STEP leverages modern technology that allows operators to make better decisions in real-time. STEP-IQ™ fiber optic solutions are used for production logging and injection profiling to help optimize wells. Applications such as fracturing monitoring to mitigate the risks of parent/child well communication are also on the horizon.

Key Benefits of STEP-IQ™ Fiber Optics

- Real-time data acquisition verifies proper tool functioning and allows operators to make better decisions during operations
- More accurate and complete data helps operators to better optimize their wells.
- Robust and simple deployment of CT-conveyed fiber reduces costs and operational complexities.
- Interventional fiber solutions are more cost effective than a permanent fiber installation.

Case Study: Production Logging

Challenge:

An operator in the Montney wanted an accurate understanding of where and how much gas it was producing along the length of a 9,980 meters (feet) horizontal wellbore.

Solution:

STEP worked with the operator using fiber optic technology to log production in the well. The fiber optic string was conveyed using coiled tubing to the bottom of the well where it remained “parked” for two days collecting production data across the entire length of the wellbore.

Result:

Real-time fiber logging provided superior data, detail and accuracy compared to a conventional production logging tool (PLT). STEP-IQ™ fiber optics delivered a robust solution, eliminated the risks of damaging a conventional PLT in the wellbore and saved time while gathering data along the entire wellbore length; all of this with the additional benefit of fewer running meters.

The fiber optic string provided the operator with a more complete understanding of well performance. The information was used to extrapolate well reservoir performance for other wells in the area and allowed the operator to optimize their current completion strategies.

Case Study: Injection Profiling

Challenge:

An operator in the Alberta Swan Hills area wanted to see where and how much fluid was entering the formation along each stage of a 13,125 meters (feet) 14-stage water flood injection well, to better understand where it was sweeping the formation.

Solution:

The operator decided to use STEP's CT-conveyed fiber optic profiling solution to overcome the primary limitations of conventional PLT tools which include: susceptibility to damage in the wellbore, data only gathered in 'chunks' along the wellbore and uncertainty over data quality captured by memory tools.

The fiber optic string was run to the bottom of the well and "parked." The well was left to stabilize, which was then followed by a fluid injection phase. The well was shut in again to allow it to equalize, followed by one more injection phase. The string was then pulled out of hole.

Result:

STEP provided the client a real-time injection profile report, which revealed a major inefficiency in the injection well: 83% of the total injection fluid was entering the formation through the heel of the well, in stages 10 to 14.

By using fiber optic technology, the operator saw a more complete picture of what was happening underground in real-time. This accurate and detailed data helped the operator optimize their water flood program.