Case Study

Dependable CT with Improved Field Performance

1 million running feet could have been far more.

Background

Recently, service companies are seeing more corrosion-related failures to their coiled tubing (CT) due to microbial infections and other corrosive fluids in shale plays. Additional fatigue accumulation at bias welds also prevents users from realizing the full potential of a conventionally manufactured CT string.

Service companies need a coiled tubing product that they can depend on— a reliable product that withstands challenging working environments every time—allowing customers to consistently achieve more than 1 million running feet. All parties in the CT value chain want to worry less about the costly downtime and potential safety risks and focus on realizing all revenue potentials.

Solution

In 2019, Quality Tubing launched a new product line that was designed to combat industry challenges: ATP. Sourcing an automated equipment package and proprietary steel grade designed for quenching and tempering, Quality Tubing is committed to delivering dependable products with consistent properties.

Through extensive testing, this product line has demonstrated its ability to mitigate pitting corrosion at the bias weld, allowing service companies to confidently complete one job after another.

Case study facts

Product: ATP-130, 2⅝-in. OD

Key product features

- No bias weld fatigue derating
- Lower fatigue accumulation at bias welds
- Available in 2-, 2⅜-, and 2⅝-in. OD
- Compatible with existing surface equipment

With presence of pitting throughout the coiled tubing's ID surface, the test sample still surpassed 100% predicted fatigue life.

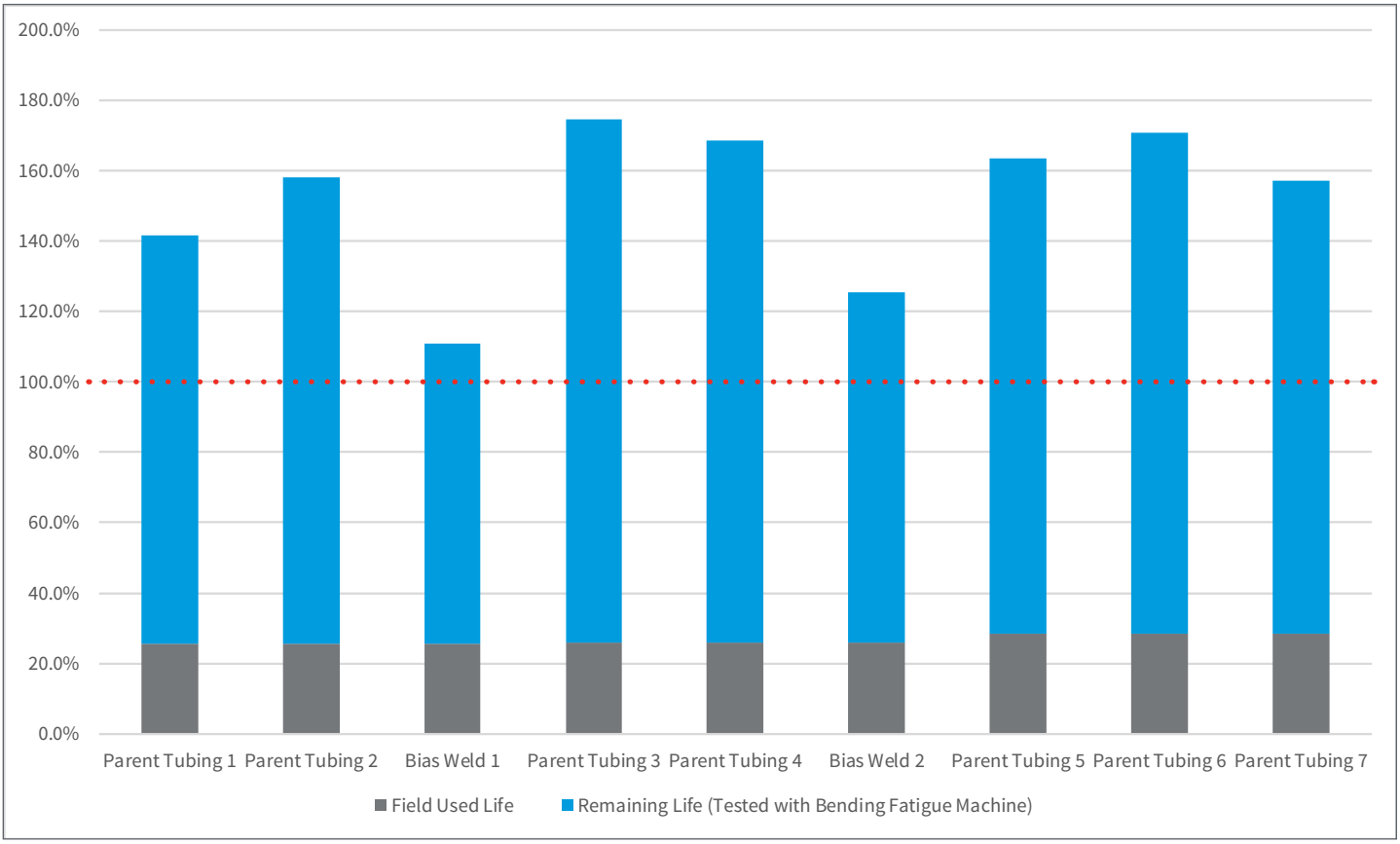
Results

A major US service company recently voluntarily retired their first ATP-130 string after it reached the operator-mandated retirement criteria of 1 million running feet maximum. They tasked NOV to find out the remaining life in the retired string.

Quality Tubing obtained samples from the ATP-130 string including parent material and bias welds after field use and performed additional fatigue testing.

Data shows all retired ATP-130 samples exceeded the statistical-modeled fatigue life after withstanding difficult operating conditions. These tests demonstrate the untapped potential in string fatigue life of the parent material and bias welds. This serves as a testament to the increased reliability despite pitting and the deceased operational risks brought by the ATP product line.

Untapped potential of a 1 million running feet string



Compounding field used fatigue life as recorded by Cerberus™ suite with laboratory test data on the retired string, all samples including those containing bias welds surpassed the 100% mark of predicted fatigue life. Despite the presence of pitting, ATP-130 provides service companies and operators peace of mind while helping deliver full revenue potentials.