

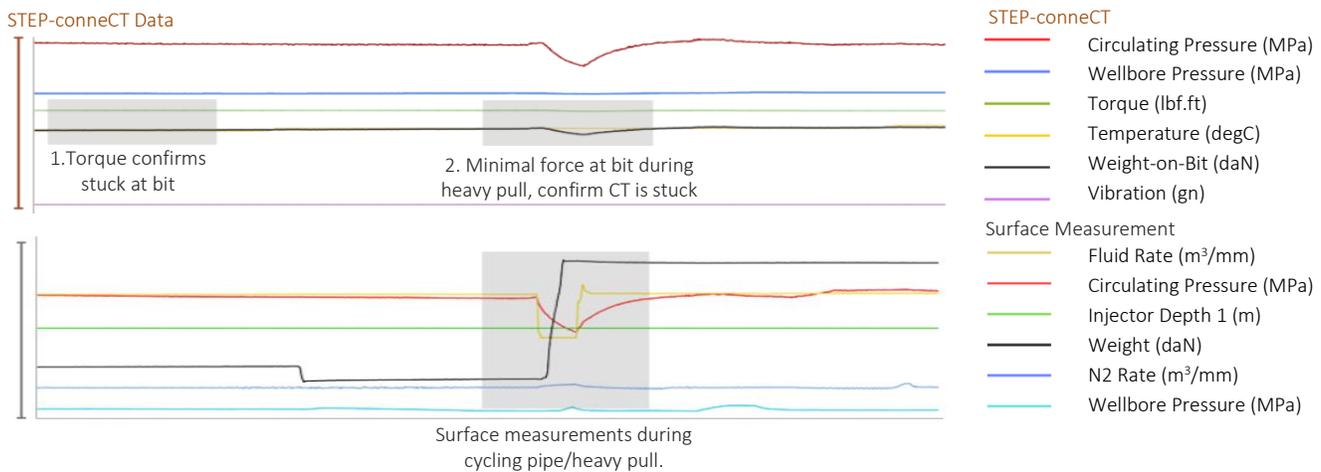
## STEP-conneCT Outperforms Surface Measurement

With longer laterals and higher stage counts in completions operations, energy producers need their milling campaign to stay on schedule and budget. Conventional milling relies on surface measurement methods to monitor the operation, however at best, this offers a probable guess of downhole conditions. This is especially true when nitrogen support is utilized. STEP-conneCT is a downhole, real-time data acquisition tool that can uncover errors in thinking before they become costly errors in judgment.

### Challenges

A client completing a five well milling campaign in the Montney formation near Gordondale, Alberta, Canada, had an unexpected setback when STEP-conneCT detected a motor stall and a stuck bit which ceased the operation. When cycling pipe, STEP-conneCT referenced minimal change in weight-on-bit (WOB), making the operator aware that the coiled tubing (CT) was stuck up-hole, above the BHA.

### STEP-conneCT Vs Surface Gauge



### Solution

Surface gauges failed to reference the root cause, a debris obstruction above the BHA. STEP-conneCT framed the problem correctly, which empowered a constructive path forward. Nitrogen was brought online to remove the annular obstruction; returns and pressures were restored. The pipe was cycled and movement at the BHA was verified with STEP-conneCT. After working the BHA with pumps off and on, the bit was freed with a heavy pull of 36,800daN (6,600daN downhole). The BHA was retrieved from the well enabling the operator to retool and continue with a successful mill out.

### Results

This case study demonstrates that surface measurements can undermine decision-making because they do not accurately depict actual downhole conditions. Unaware of the BHA stuck above, the operator would have otherwise had no alternative to freeing the stuck bit other than undertaking cut and recovery activities, incurring lost in hole charges and extensive non-productive time. Forewarned is forearmed - in crucial moments, STEP-conneCT provided awareness to empower decision making, bringing the milling campaign back on schedule and within budget.