

CASE STUDY

MICROGUIDE REVEALS TUBING AND CASING BUCKLING IN ARCTIC CIRCLE WELL CAUSED BY SUBSIDENCE

▶ TECHNOLOGY

- MicroGuide™ wellbore tortuosity logs

▶ APPLICATION

- Pad drilling
- Wellbore tortuosity analysis

▶ LOCATION

- Arctic Circle

INDUSTRY CHALLENGE + OBJECTIVE

An operator inside the Arctic Circle was utilizing high-density survey data to evaluate well issues due to subsidence. After producing several wells in close proximity for 25 years, the pad started to slowly sink due to melting permafrost from the high-temperature hydrocarbons. In 2010, we collected data in three phases on a particular well to help the operator better understand the condition of the wellbore. We first surveyed the 2 $\frac{7}{8}$ -in. tubing, and after it was removed the next month, we surveyed the 7- and 9 $\frac{5}{8}$ -in. casing.

TECHNOLOGY + SERVICE SOLUTION

- Several years after collecting high-resolution data, we were able to go back and run a MicroGuide analysis, which provided the operator with a 3D visualization of the wellbore.
- The MicroGuide analysis provided insight into wellbore conditions that was otherwise unobtainable with conventional technology.

RESULTS + VALUE DELIVERED

- The initial 2 $\frac{7}{8}$ -in. tubing survey showed a spike in measured inclination at approximately 270 ft down.
- While the MWD survey data showed a standard well path without issues, the MicroGuide logs told a different story. Buckling was occurring not only in the 2 $\frac{7}{8}$ -in. tubing but also in the 7- and 9 $\frac{5}{8}$ -in. casing.

