

CASE HISTORY

MULTI-FINGER CALIPER DATA ENABLES PLUG SETTING IN GEOTHERMAL WELL

APPLICATION

Cased Hole Services
Geothermal
Well Control

TECHNOLOGY

Cased Hole Services
+ Vulcan™ MFT-40

LOCATION

Far East

CLIENT CHALLENGE

A geothermal client wanted to deploy new technology to electronically set a plug for the first time to replace the incumbent conventional plug service provider.

The initial well selected for this new plug was proven to be incompatible with the size available in the country (verified with the help of Scientific Drilling International's Vulcan™ MFT-40 geothermal multi-finger caliper, that was previously logged by a competitor in 2021 with doubtful results). This prompted the client to cancel the operations and select a new well for the plug setting operations.

It was imperative for the geothermal operator to determine the accurate casing ID of this new well for each casing joint to determine the optimal plug setting depth, ensuring that no resources would be wasted due to inadequate planning, resulting in canceled operations.

SCIENTIFIC SOLUTION

For the new well, the operator chose to utilize SDI's Vulcan™ MFT-40 to accurately acquire the internal diameter of the 9-5/8" casing across a section of 988m.

Upon completion of the log and a comprehensive statistical analysis of caliper data at 2-meter intervals (including metal loss and maximum wall penetration data), the client was able to confirm that, indeed, a larger-sized plug was needed to successfully perform a wellhead replacement.

The caliper's high sampling rate of 50/s, as well as high-accuracy and high-resolution measurements, along with stringent data QA/QC procedures, provided the operator the confidence to proceed with plug-setting operations. Another set of plugs was mobilized of a compatible size based on the casing ID determined by the caliper.

CLIENT VALUE

The plugs were subsequently set successfully on the first attempt, providing a critical barrier for well control before replacing the wellhead. The wellhead replacement was conducted safely, and no resources were wasted.

