Prepare for Pressure

BACKGROUND
The well was drilled in 2012 to a depth of 2635m AH and was found dry. The 13-3/8” and 9-5/8” casing-shoes were set at 564m and 1295m respectively. The well was permanently abandoned by means of 5 cement plugs. The 9-5/8” production casing was cut and retrieved from 600m creating an uncased hole section of 40m between the top of the 9-5/8” and the shoe of the 13-3/8”.
Cement plug #4 was set in this open hole section. After removal of the wellhead and demobilization of the rig gas bubbles were detected. As a result an emergency slip-lock head MX2 wellhead and a 4-1/16” X-mass tree were installed.

OBJECTIVE
The objective was to re-enter the well, find the leak and re-abandon the well.

EXECUTION
• Drill a pilot hole through plug #5, bleed-off any trapped pressure, set and test new cement plugs in order to remove X-mass tree.
• Rig down BOP’s and remove 4-1/16” X-mass tree in order to accommodate a 13-5/8” BOP stack.
• Re-enter the well by milling trough top cement plugs and plug #4. Try to re-enter the 9-5/8” csg, run a tie-back liner, perform a leak search and re-abandon the well.
• Pressure below the shallow plugs could cause pipe-light scenarios. For that reason the HWT600 HWO/snubbing unit was used for milling through top plugs.

RESULTS
• Milling through the top plugs was done without problems. Pressure was contained. New plugs were set and tested. The 4-1/16” X-mass tree was removed and a 13-5/8” Snubbing BOP stack was rigged up.
• Finding the original 9-5/8” hole at 600m proved to be difficult because of the uncased hole section between 560m and 600m. Further attempts to access the original hole were cancelled.
• New cement plugs were successfully set, tested and the leakage stopped.

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