MetalSkin® Cased-Hole Liner
Withstands Internal Pressure Levels of 7,500 psi Without Additional Support

Objectives

- Remove a thin-wall casing patch that had been covering a leak in a split casing collar. Because of the large size of the leak, the patch did not hold up to the internal pressure requirement of 7,500 psi (51.7 MPa).
- Deploy an equally cost-effective but more robust solution to cover the leak, restore casing integrity, and withstand internal pressure requirements. The client was concerned that a more costly cement squeeze would fail to hold up against the pressure requirements. Additionally, the client wanted to avoid the inside-diameter restrictions associated with conventional liners and straddle packers.

Our Approach

- The Weatherford team recommended the MetalSkin cased-hole liner as a permanent, high-pressure-resistant solution for isolating the damaged casing while meeting all other client objectives.
- The team milled out the casing patch and then prepared for the liner installation by running smooth-outside-diameter mills 1/16-in. larger than the drift of the 5 1/2-in. casing and performing a multi-arm caliper log run.
- Weatherford ran 114 ft (35 m) of the 4 1/4- × 5 1/2-in. MetalSkin liner to the target setting depth range of 2,773 to 2,882 ft (845 to 878 m). The team set and expanded the liner to isolate the damaged casing.
- After the installation, the expandable connections of the liner were successfully pressure tested to 7,500 psi (51.7 MPa) without leaking.
- The operation had no recorded safety or environmental incidents.

Value to Client

- The expandable connections of the MetalSkin cased-hole liner withstood 7,500-psi (51.7-MPa) pressure levels—the highest internal pressure placed by Weatherford on expandable liner connections without any additional support, such as wrapping elastomers around the entire liner OD or performing cement squeezes for backside reinforcement. Achieving this record-setting pressure demonstrated the reliability of the technology.
- The MetalSkin liner permanently isolated the damaged casing, which averted the costs associated with repeated cement squeezes.
- The MetalSkin liner maximized borehole size to facilitate high fracturing volumes, optimal production flow, and future interventions.

The Weatherford MetalSkin cased-hole liner served as a cost-effective and robust solution for isolating damaged casing while holding up against demanding internal pressure requirements.

LOCATION
Rocky Mountains, USA

WELL TYPE
Onshore, vertical, oil and gas

PRODUCTION CASING
- Size and type: 5 1/2-in., 17-lb/ft (25.3-kg/m) P-110
- ID: 4.892 in.
- Drift: 4.767 in.

EXPANDABLE LINER
- Size and type: 4-1/4 × 5-1/2 in., 10.69 lb/ft (15.9 kg/m)
- ID: 4.24 in.
- Drift: 4.198 in.
- Pre-expansion length: 114 ft (35 m)
- Post-expansion length: 109 ft (33 m)
- Shrinkage: 4.4%

SETTING DEPTH RANGE FOR LINER
2,773 to 2,882 ft (845 to 878 m)

PRODUCTS/SERVICES
MetalSkin cased-hole liner

* MetalSkin is a registered trademark of Weatherford in the US and United Kingdom.

Weatherford®