



Weatherford®

REAL RESULTS

MetalSkin® Open-Hole Liner System Isolates Water-Swellable Shale Zone, Maximizes Hole Size, Stabilizes Wellbore

Objectives

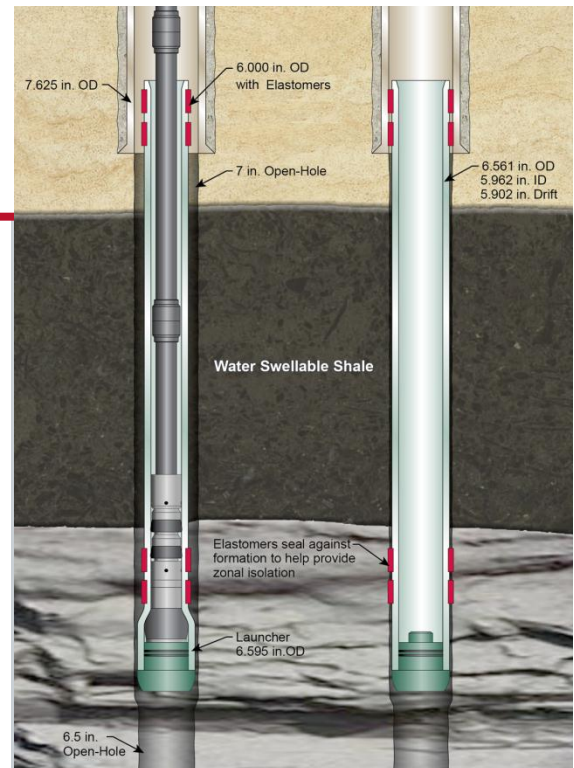
- Achieve zonal isolation below the existing 7 5/8-in. casing. Directly under the parent casing is the water-swellable shale zone followed by a total lost-circulation zone. The operator opted to drill with oil-based mud but, when the total lost-circulation zone was pierced, the mud exited into the formation with no returns. The operator could not substitute seawater because it activated the water-swellable shale.
- Enable a 5 7/8-in. drill bit to pass through to total depth (TD).
- Limit nonproductive time (NPT). During conventional drilling, the water-swellable shale began to activate, causing wellbore stability problems and leading to stuck pipe and sidetracking operations, which significantly increased NPT. The operator had spent multiple weeks trying to drill through the problem zone with a 6 1/2-in. bit without success.

Results

- Weatherford deployed a 6- × 7 5/8-in. *MetalSkin* open-hole liner and successfully isolated a 394 ft (120 m) section of water-swellable shale without cement.
- The post-expanded *MetalSkin* liner was set from 6,036 to 6,561 ft (1,840 to 2,000 m) with a 131-ft (40-m) overlap at a 34° angle, for a total of 525 ft (160 m).
- The resulting drift ID was large enough for the operator to drill through the total lost-circulation zone with a 5 7/8-in. drill bit.
- The mechanical barrier enabled the operator to use seawater instead of oil-based mud.
- The well was successfully drilled to TD.

Value to Client

- Using Weatherford's *MetalSkin* open-hole liner enabled the operator to isolate a water-swellable zone under existing casing, drill through a deeper total lost-circulation zone with seawater instead of oil-based mud leading to significant cost savings, and reach TD with optimal size casing.
- The *MetalSkin* liner installation eliminated weeks of NPT by solving the wellbore stability problems.
- Running the expandable liner as a mechanical barrier without cement further reduced cost to the operator by reducing material costs and minimizing installation time on the rig.



Weatherford's *MetalSkin* open-hole liner system isolated a water-swellable shale zone located under existing 7 5/8-in. casing without cement, enabling the operator to drill to TD with maximum hole size, seawater as a drilling fluid, and a stabilized wellbore.

Location

Gulf of Mexico

Well Type

Offshore, high-angle re-entry well

Hole Size

- 7 5/8-in. (parent casing)
- 5 7/8-in. (predrilled open hole)

Depth

- 6,036 to 6,561 ft (1,840 to 2,000 m): expandable liner
- 6,167 to 6,561 ft (1,880 to 2,000 m): open hole

Casing

- 7 5/8-in., 33.7-lb/ft production casing
- 6 × 7 5/8-in. *MetalSkin* open-hole liner

Products/Services

MetalSkin open-hole liner system

Weatherford
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Region Product Line Champion
Solid Expandable Systems
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