Weatherford®

REAL RESULTS

MetalSkin® Solid Expandable Open-Hole Liner Passes Challenging Field Trial with Flying Colors

Objectives

- Field test Weatherford's 7 5/8-in. *MetalSkin* open-hole liner system for effective deployment in commercial wells. The operator's well in the Arkoma field, north Texas, was selected for this purpose. Testing focused on safety during running and expansion, system functionality and robustness, and drillability of the liner bottom.
- Install the *MetalSkin* system with minimal or no negative economic effect on operations or well design.

The *MetalSkin* solid expandable open-hole liner isolates problem zones to allow drilling ahead without resorting to downsizing the well completion.

Location
North Texas, USA

Well Type
Oil/gas development

Hole Size and Type
8 1/2- × 9 7/8-in. open hole
below 9 5/8-in. casing

Hole Angle
0° to 2°

Mud
8.8 ppg water-based mud

Casing
- Top: 2,050 ft (625 m) of 9 5/8-in., 36-lb/ft K-55, ID 6.276 in. (159.4 mm)
- Bottom: 400 ft (121.9 m) of 9 5/8-in., 53.50-lb/ft with 8.50-in. special drift

Liner
- *MetalSkin* open-hole liner: 7 5/8-in., 29.7-lb/ft VM-50, VAM® EWT
- Pre-expanded ID: 6.875 in. (174.6 mm)
- Post-expanded ID: 7.630 in. (193.8 mm)
- Pre-expanded length: 1,028 ft (313 m)
- Post-expanded length: 980 ft (299 m)

Liner Setting Depth
3,300 ft (1,006 m) MD

Work String
4-in., 14-lb/ft XTM-39 drillpipe

Products/Services
- MetalSkin open-hole liner system
- Tubular running services

Weatherford International Ltd.
515 Post Oak Blvd., Suite 600
Houston, Texas 77027 USA
Tel: 713-693-4000
www.weatherford.com

Weatherford
Tim Dunn
Applications Engineer, Solid Expandables
504-679-9700
tim.dunn@weatherford.com

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Results

- The test application was designed for installation of the 7 5/8-in. *MetalSkin* system, inside 9 5/8-in., 53.50 lb/ft parent casing and 9 7/8-in. open hole, at approximately 3,300 ft (1,006 m) MD.
- The open-hole interval was drilled, and 1,028 ft (313 m) of casing was run to total depth on drillpipe as a liner.
- The expansion cone and launcher were formed and the primary cement job executed. The isolation valve and liner release system functioned flawlessly. The expansion assembly was pulled from the bottom up to expand the 7 5/8-in. liner in the open-hole section and inside the 9 5/8-in. parent casing, and then pulled out through the top of the liner.
- The liner was hydraulically tested, and the liner shoe components below the launcher were successfully drilled through, without incident.
- Key objectives and performance benchmarks for the overall system were successfully achieved and recorded. Opportunities for future improvements will be identified after a thorough evaluation of the findings.

Value to Client

- The success of this operation demonstrated the effectiveness of the *MetalSkin* open-hole liner, giving the operator a new, cost-saving option for reducing installation risks and construction costs and minimizing drilling hazards.
- The collaboration between Weatherford and operator and the success of the field test accelerated the full-scale commercial application of *MetalSkin* solid expandables.

Running and making up the 7 5/8-in. *MetalSkin* open-hole liner. The system offers distinct advantages over other available expandable systems: more running clearance to avoid equivalent circulating density problems and differential sticking; retrievable, collapsible expansion cone for contingent recovery; fully qualified premium metal-to-metal expandable connectors; and elastomer sealing elements for enhanced pressure containment.

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Houston, Texas 77027 USA
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