

Expro Excellence

CBI™ Tool maximized efficiency for 8½” tri-lateral well drilling operations

Well Construction | Drilling Technologies



Objectives and background

- Hole cleaning in directional wells is a major limiting factor in today’s extended reach drilling campaigns. If not done properly, operators can incur an increase in drilling cost due to high non-productive time (NPT) caused by tight hole, stuck pipe, slower drilling, excessive torque and drag on the drill string, and drill string not reaching total depth (TD)
- In the past, operators were required to use tandem sweep pills, wiper trips, and reaming or back reaming to effectively remove cuttings from the wellbore, consuming large amounts of rig time and spend
- To drill more efficiently, an operator in the Middle East sought a new solution that would increase the cuttings removal process on three 8½” open hole lateral sections while sustaining a 90° inclination from +/- 9,000 feet to TD at +/- 17,500 feet
- Additionally, the solution would need to use minimum flow rates to avoid breaking the formation and causing costly and potentially damaging mud loss

Expro Excellence

- Expro’s CBI™ Cutting Bed Impeller is a downhole drill string tool designed for use in deviated wells where excessive build-up of cuttings causes drilling problems, typically in hole angles greater than 30°
- The CBI™ tool’s chevron-shaped blades remove cuttings from inside the casing or in an open hole and improve the transportation of these cuttings to the surface for more stable hole conditions and reduced risk of stuck pipe

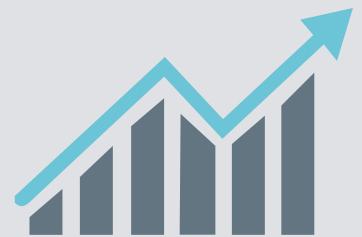
Expro Excellence

- Expro recommended the installation of 51 5” CBI™ tools at a frequency of one tool per two stands in the open hole section and one tool per three stands in the cased hole to cover the horizontal section up to the critical angle at 35° due to the increased level of cuttings in these areas
- CBI™ helped agitate the cuttings that tend to settle, and boost cuttings transfer to the surface

Value to the client

- Our CBI™ tool enhanced hole cleaning on the lateral sections and significantly reduced the open hole friction factor from 0.4 at the beginning of the run to 0.22 at TD. This decreased measure of friction caused by cuttings proved our solution reduced torque and drag, resulting in faster and more efficient drilling
- The enhanced hole cleaning by our CBI™ tool reduced the frequency of high-viscosity mud pills and wiper trips needed and decreased torque and drag while drilling and tripping to minimize cost and overall rig time
- All sections were drilled at a minimum flow rate of 500 GPM with zero hole-cleaning issues
- Compared to an offset well, wiper trip frequency on the three 8½” sections were significantly less. Additionally, the offset well encountered overpull while pulling out of hole as well as mechanical stuck pipe incidents, which decreased overall efficiency and increased costs
- Our technology solution reduced NPT and drilling costs by mitigating overpull and stuck pipe incidents and minimizing the frequency of other hole cleaning methods

Increased productivity



Reduced costs



Contact

For further information please contact:
wellconstruction@expro.com
 or visit
expro.com | Drilling Technologies