

VariForm® Centralizers

Minimize Drag, Enable Running a 12,800-ft Casing Section, Deliver $\geq 80\%$ standoff in 3 ERD Wells

Objectives

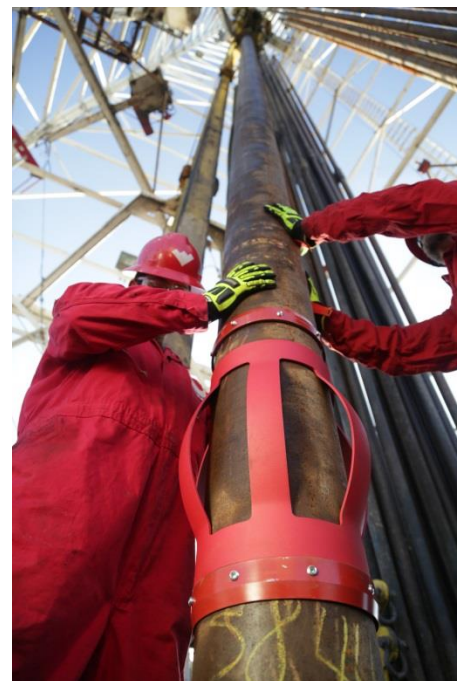
- Enable low-drag casing running for a 12,800-ft (3,901-m), 9-5/8 in. casing string in three extended-reach (ERD) wells. The string must navigate a deviated 8,000-ft (2,438-m) openhole section with a dogleg severity points up to 4 to 5° per 100 ft (30.5 m). In nearby wells, these factors have led to an increased friction factor during running and also affected the cement-log output due to poor standoff.
- Provide optimal standoff to contribute to a secure cement bond and life-of-well integrity.

Our Approach

- Following a thorough pre-job analysis with the ZADCO engineers, a Weatherford well-construction team recommended customized centralizers for the wellbore geometry. Based on VariForm single-piece centralizers—which combine the strength and restoring force of bow centralizers along with the reduced drag of solid centralizers—the team customized and manufactured an enhanced technology that would further reduce drag without decreasing standoff. Only one month elapsed between the design stage and delivery of 1,500 centralizers.
- A ZADCO team placed the customized VariForm centralizers on the casing string and ran them downhole in three wells. The casing-running operation resulted in exceptional friction factors—as low as 0.17 to 0.3—which enabled the string to navigate the wellbore deviation and unstable zones with no sticking or nonproductive time.
- The team then cemented the string in place. The centralizers delivered a ZADCO-specified $\geq 80\%$ standoff, as demonstrated by the cement bond log outcome.

Value to Customer

- Customized VariForm centralizers delivered friction factors as low as 0.17 to 0.3, which enabled trouble-free casing running in three deviated ERD wells despite dogleg severities that reached 4 to 5° per 100 ft (30.5 m).
- The centralizers provided a ZADCO-specified $\geq 80\%$ standoff, which eliminated the cementing issues experienced in other wells.
- The solution contributed to achieving an excellent cement bond, which set the stage for life-of-well integrity.
- In just one month, Weatherford designed and manufactured 1,500 customized VariForm centralizers that met the customer's specifications and the proposed drilling schedule.



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CUSTOMER

Zakum Development Company (ZADCO)

LOCATION

ZADCO Islands, Abu Dhabi, UAE

WELL TYPE

Extended reach, oil and gas

NUMBER OF WELLS

3

WELLBORE DEPTH

27,000 ft (8,230 m)

CASING DEPTH

12,800 ft (3,901 m)

CASING SIZE

9 5/8-in.

OPENHOLE SIZE

12 1/4-in.

WELLBORE DEVIATION

90°

PRODUCTS/SERVICES

- VariForm centralizers

