

Fusion+™ Drills 82% Farther Than Average

8-1/2" F+613DG, M'Boundi Field, Republic of Congo

CHALLENGE: Drill a longer interval in the heavily interbedded Sialivakou and Vandji formations, which typically only yields about 160 m (525 ft) of drilled footage in this offset area, and do so without sacrificing ROP. The run was scheduled to drill a vertical section followed by a 31° tangent section.

SOLUTION: Varel recommended the 8-1/2" F+613DG Fusion+ hybrid diamond impregnated PDC bit. Featuring Varel's abrasion resistant Vulcan® PDC cutters and hot isostatic pressed (HIP) segments tailored to the formation, the Fusion+ is ideal for drilling from a softer formation into harder rock formations where durability is key.

RESULTS: The Fusion+ bit drilled 294 m (948 ft) of this interbedded formation which consists of sand, shale with carbonate layers, and hard quartzite conglomerate stringers throughout the run at 7.4 m/hr (24 ft/hr). Drilling 82% farther and 19% faster than the average offsets, this run set a new benchmark for footage drilled.

This 8-1/2" F+613DG was pulled with a 1-4-WT-S-X-I-CT-PR dull grade. Of the five available offsets, all of which drilled through the quartzite conglomerate between 2150m and 2640 m deep, four were pulled out of gage, all suffered severe cutter damage, and all were either cored or rung out. This performance demonstrates once again the extreme durability of the Fusion+ hybrid design.



Pulled with a 1-4-WT dull grade, this had an outstanding dull grade compared to offsets.



If allowed to continue its run, this durable bit would surely have drilled for many more hours.

| Bit Type | Meters Drilled | ROP (m/hr) | Dull Grade |
|------------|----------------|------------|---------------------|
| F+613DG | 294 | 7.4 | 1-4-WT-S-X-I-CT-PR |
| Competitor | 261 | 7.6 | 8-7-RO-A-X-I-NO-DTF |
| Competitor | 204 | 7.0 | 2-8-RO-A-X-1-BT-PR |
| Competitor | 151 | 3.6 | 8-8-CR-C-X-2-ER-PR |
| Competitor | 91 | 7.3 | 8-8-CR-C-X-1-LT-PR |
| Competitor | 88 | 5.5 | 8-8-CR-A-X-1-CT-PR |

For more information on this bit and proposed applications please speak to your local Varel representative.