An operator working in a prolific field in the Middle East wanted to streamline and expedite development of the field. The operator typically drilled challenging interbedded sections using tungsten carbide insert (TCI) roller cone bits with an average ROP of approximately 38 ft/hr (11.5 m/hr), but believed it was possible to drill faster, mitigate torque fluctuations, and improve their cost-per-foot.

Baker Hughes recommended the Kymera™ XTreme (XT) hybrid drill bit for the application. Building upon the success of prior hybrid technology, the Kymera XT bit can be customized for each scenario and delivers smooth, reliable, faster, and more durable drilling performance in both vertical and curve drilling applications. It also delivers superior tool-face control in difficult drilling environments including challenging carbonates and interbedded formations where drilling speed and durability are often pushed to their limits. The Baker Hughes DART™ drilling application review team analyzed the formation properties through the difficult section and then customized a Kymera XT bit to perform optimally through that section. The BHA was also modeled and customized to achieve high performance and improved torque response with the Kymera XT bit. The DART team then performed a detailed formation drilling analysis to forecast how drilling performance would be affected by the Kymera XT hybrid drill bit.

The Kymera XT bit was deployed downhole and successfully drilled the 4,800 ft (1463 m) section in a single run, eliminating the bit trip that had been required when the operator used roller cone bits. The bit achieved the highest average ROP in the field. A rig-specific comparison on four wells revealed an ROP increase of 126%, more than doubling the field’s average and exceeding the operator’s previous field-wide benchmark by over 20%. The increase in ROP saved 2.5 drilling days and the Kymera XTreme hybrid drill bit delivered the smooth torque response and improved drilling efficiency that was crucial to the operator.