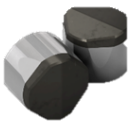
# Case Study

## Outstanding New ROP Record in the Field for 8.375” Section in Oman

### APPLICATION
Onshore– 8.375” Section, Rotary BHA.
Moderately hard carbonate section and abrasive sandstone formation.

### TECHNOLOGY
EVOS™ 516P-C
Venom™ Shaped Cutter
Cobra Cutters
Hydra™



### LOCATION
Oman
Onshore

### CUSTOMER CHALLENGE
The Customer focused on drilling into the challenging formation with one 8.375” PDC bit to achieve the best possible ROP, maximizing efficiency and minimizing the drilling time

The TOP 15 achievement using PDC bit design achieving 14.9m/h ROP average for the field. Record run in the well was set @ 21.2m/h.

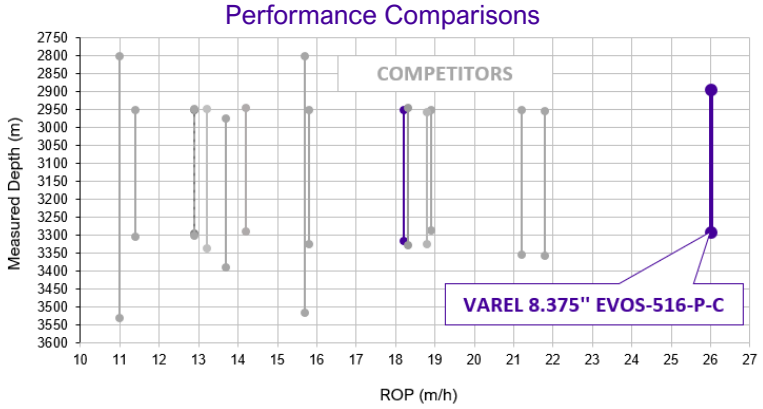
Matrix Body PDC design

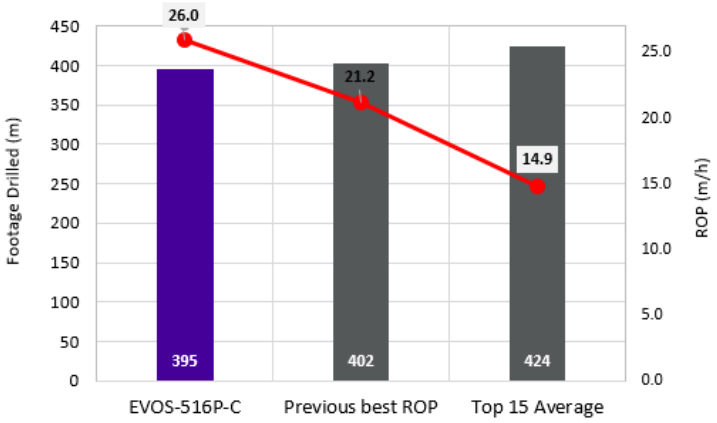
### VAREL SOLUTION
VAREL proposed a specific PDC bit that has been modified and re-designed leveraging the EVOS™ bit technology, especially for drilling applications where control and durability is essential.

**Solution:** 5-bladed, 16mm cutting structure matrix body bit with Cobra Venom ™ Shaped Cutter and Hydra™ webbed blade design.

**Purpose:**
**Varel Hydra™ Hydraulics** - optimization program combines CFD analysis with curved nozzles, webbed blade and other application specific bit design features which provides better bit cleaning and cooling that leads to extended bit life and longer runs.
**COBRA cutters -** A combination of the Fang shape blended with Artimis ridge. This layout is useful in directional runs to increase both speed and durability.

Performance Comparisons




### CUSTOMER VALUE
The 8.375” VION-516P-C achieved outstanding new ROP run record in Oman.

- The bit breaks previous field record, achieving excellent interval drilled of **395m** with best ROP in the field of **26m/h.**
- Achieved **22.6%** increase in ROP as compared previous best ROP in the same field.

VAREL ENERGY SOLUTIONS