Case Study

New PDC Solution Sets in U.A.E

APPLICATION
Offshore – 16” long deviated section
Presence of interbedded, chert and heavy mineral formations

TECHNOLOGY
VOYAGER 616PDG1HXU-T (PDM)
VOYAGER 616PG2HX-T (RSS)
TRIFORCE™ Cutter Technology

LOCATION
United Arab Emirates (U.A.E)
Offshore

CUSTOMER CHALLENGE

The Customer focused on drilling the complete 16” section in one PDC bit run. The parameters called for high ROP despite the potential presence of chert and heavy minerals throughout the end of the section.
The previous well used a TCI bit design achieving 46.6 ft/hr ROP average across the field.
Historical trials with PDC technology from alternative suppliers resulted in lower ROP, damaged bits and uncompleted drilled sections.

VAREL SOLUTION

VAREL proposed a specific PDC design leveraging the VOYAGER platform with TRIFORCE™ technology. Design optimization using our PDC Designer and DIG-IT 3D™ software for optimal simulation and shaped cutter positioning.

Setting: TRIFORCE (2nd row) set in a leading redundancy with the main PDC of the trailing blade.
Purpose: Have the TRIFORCE Scratching-Gouging-crushing (weakening the rock) followed by standard cutters shearing the rock around the groove.

CUSTOMER VALUE

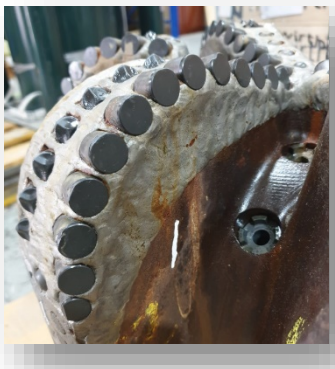
1st Job (Motor-Assts):

- Achieved **72%** increase in ROP as compared to previous PDC record performance.
- Achieved **38%** increase in ROP as compared to field / application average ROP (including all bit types).

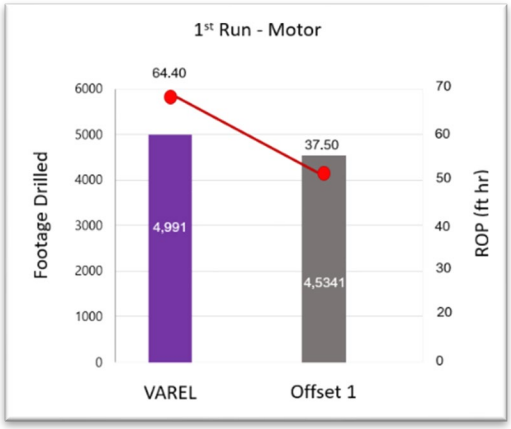
2nd Job (RSS):

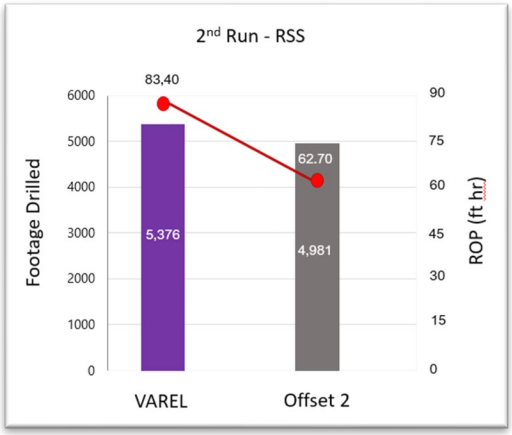
- Achieved **78%** increase in ROP as compared to field/application average ROP (including all bit types).
- ROP Field record run with **83.4 ft/h** (including all bit and drive types).
- Achieved **33%** increase in ROP as compared to previous PDC record performance.

Effective Dull Results



Performance Comparisons





VAREL ENERGY SOLUTIONS