Improving Deep Gas Drilling Performance through Lump Sum Turnkey Strategy

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Abstract

Drilling deep gas wells in a giant field in the Middle East presents many challenges including lost circulation, wellbore instability, well control risk and a tight well delivery schedule. The paper will present a Lump-Sum Turn-Key (LSTK) well delivery project with its scope, commencing from the mobilization of several new drilling rigs to the establishment of field performance records, and will unveil the elements which have turned the project's risks into opportunities.

The integrated service provider has been at the forefront of the drilling business. Its ability to deliver best-in class wells in the long run was recognized through multiple awards of projects that are entirely managed under LSTK compensation schemes. Driving performance through integration and technology was the key to success. While technology has always been at the center of the service provider's strategy, and has proved to be decisive in multiple applications, integration was even more critical when different services were to be brought together to achieve common goals.

The paper will cover the three pillars which have made the LSTK service provider' model successful and profitable, namely a focus on safety, operations integrity and application of new technologies. Safety is the performance enabler which drives the entire process. It is the cornerstone of the team's vision and many of the initiatives were introduced with the objective of enhancing it. Increasing operation efficiency is primarily pursued through the elimination of non-productive time by ensuring that the work is consistently done with the highest level of service quality. Tackling invisible lost time is another key aspect which has resulted in significant time savings and which will be illustrated through various case studies. Finally, digital technologies and automation solutions have taken drilling engineering and operations to the next level of performance optimization.

The continuous improvement initiatives and implementation of crucial advanced technologies have resulted in best-ever achievements and in delivering wells ahead of schedule while maintaining the highest level of quality. The paper will conclude with some insights on how this winning strategy can be successfully implemented across all geographies with any IOCs or NOCs.