A Game Changer In Multilateral Design That Alters The Deployment Of TAML-5

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Abstract

Objectives/Scope: In multi-lateral wells that are completed with conventional TAML-5, the access to a lateral mandates a lengthy workover. The paper focuses on the development of completion equipment to run a TAML-5 system that fulfills well integrity criteria by isolating the junction while providing independent access to both laterals. This functionality avoids the need to pull the completion if access to the lateral is necessary for stimulation, zonal isolation, or data gathering.

Methods, Procedures, Process: A challenging project required a TAML-5 system. It was critical to have accessibility to both laterals during the life of the well to minimize expensive workovers. To meet all of these requirements, TAML-5 junction and completion design must be modified. Moreover, utilization of dual-string tubing in this type of completion presented a challenge in terms of operations time and pressure control equipment configuration. Based on this, an advanced TAML-5 design was developed to give the capability to access the lateral, while optimizing on deployment time and efficiency by finding an alternative to the dual-string design.

Results, Observations, Conclusions: The newly introduced system allows for production enhancement by providing means of inflow control valves to selectivity produce the laterals. In addition, the system gives the option of isolating the motherbore or the lateral by deploying a pressure isolation sleeve or a whipstock, both may be installed with wireline or coiled tubing. This allows for rigless intervention activities in any desired lateral in the well. The improved system completely eliminates the need for dual-string which caused numerous operational difficulties in handling and deployment. The paper reviews the field deployment of this system, where all design improvement objectives were met. The Deployment discussion includes experienced challenges with lateral accessibility due to string stiffness, and related modifications to running procedures and tool designs. In terms of efficiency, the enhanced system resulted in reducing TAML-5 deployment time by 25%. The study covers the expected positive impact on future workover intervention operations.

Novel/Additive Information: The significantly improved TAML-5 completion system presents a substantial enhancement to functionality. It overcomes the limitations of older designs by allowing rigless accessibility to both laterals and eliminating the need for dual-strings while providing the desired junction integrity. The use of this technique reduces the cost of well construction and intervention, prolong well life by reducing workover needs, and increase operational efficiency.