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Abstract

Objectives/Scope: A new type of stuck pipe release system is presented with a method to operate. The system is compared to a commonly used technique for releasing stuck pipe, especially focusing on differentially type stuck incidents.

Methods, Procedures, Process: The new stuck pipe release system is based on a downhole tool system, capable of generating large lateral forces down the hole. The system can be integrated into a BHA and activated once drill string becomes stuck or run as a part of the remediate assembly. Different aspects of two types of assemblies are described outlining the benefits and drawbacks. The author will discuss in details the background and rationale to the new technology, including a review of differential sticking challenges and functionality of the new system.

Results, Observations, Conclusions: The system was compared to the most commonly used techniques for releasing differentially stuck pipe. Stuck pipe forces of over 1,000,000 lb. can be overcome with a new approach to generate downhole shocks near the place of stuck. By comparison of the BHA integrated tool to the fishing type system the decision can be made for the most efficient method to deal with a differentially stuck pipe. This new approach can be implemented to release the most challenging stuck pipe mechanisms in drilling to minimize cost and time required for remedial operations reducing NPT and cost associated with stuck pipe and sidetracks. A similar approach can be utilized to release differentially stuck tubing and completions.

Novel/Additive Information: The novelty of this stuck pipe release system is the new approach to generate large forces down the hole and the ability to integrate the system into a BHA or fishing type assembly.