Drilling Software | Sophisticated Yet Simple

StuckPipePro®

Stuck Pipe Analysis Model

Overview

A stuck pipe can result from a wide variety of causes. Typically, these causes are related to mechanical and differential sticking. Mechanical sticking can be caused by key seating, under gauge holes, wellbore instability, poor hole cleaning, or other similar issues. Differential sticking typically occurs when high-contact forces caused by low reservoir pressures, high wellbore pressures, or both, are exerted over a sufficiently large area of the drill string.

Stuck pipe occurrences are widely seen as the most expensive drilling problems confronting the petroleum industry, and the cost of correcting them can amount to millions of dollars. As a result, running analyses of well data to predict the stuck chance of a drill string is becoming increasingly imperative.

Pegasus Vertex has developed StuckPipePro to calculate differential sticking force, drag, stuck chance along drill strings or casings for pick-up operations. It also determines free points and requires back-off forces. In addition, the stuck mechanical analysis and decision flow chart help users find the causes for sticking and take corresponding measures to free the pipe.

Benefits

Improved Efficiency

- By effectively managing the risk of stuck pipe, operators can enhance overall drilling performance and reduce downtime, leading to more efficient operations.
- Stuck mechanical analysis and decision flow chart provide a structured approach to identifying the cause of sticking and selecting appropriate countermeasures.

Risk Mitigation

- Predictive capabilities allow for proactive measures to be taken to prevent stuck pipe, reducing operational risks.
- Optimized drilling parameters by understanding the factors contributing to sticking, drilling parameters can be adjusted to minimize the risk of incidents.

Cost Reduction

- Calculating stuck chance, drag, and differential sticking force, StuckPipePro helps prevent stuck pipe incidents, which can be extremely costly.
- Aids in determining free points and required back-off forces, minimizing time and resources spent on freeing stuck pipe.

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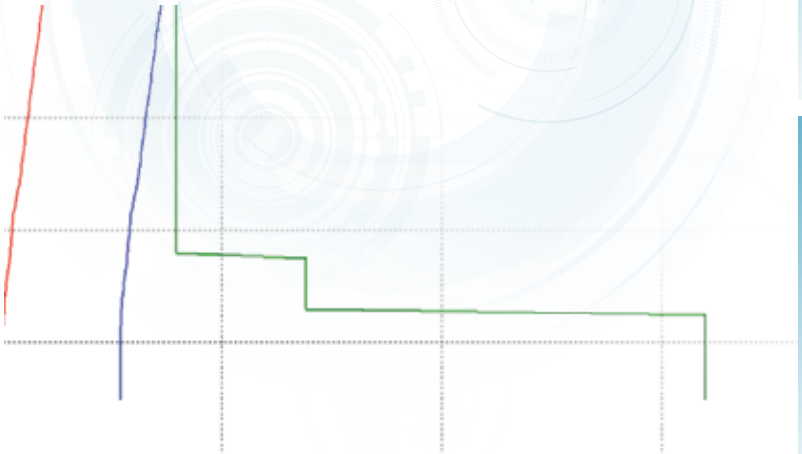
StuckPipePro®–Stuck Pipe Analysis Model

Features

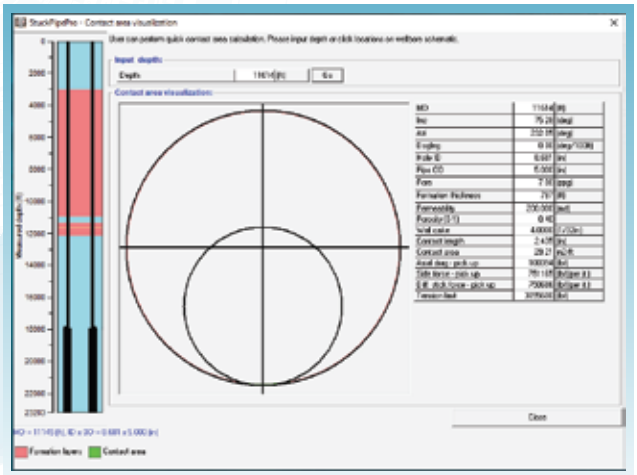
- 3D wellbore
- Multiple wellbore, pipe, and formation sections
- Axial drag and side force calculations
- Differential sticking
- Additional side force due to pipe stiffness
- Friction factors for different wellbore intervals
- Friction factors for each pipe
- Extensive tubular database included
- Microsoft Word® report
- US oil field, SI, and customized units
- 3D visualization of any user-defined parameter

System Requirements

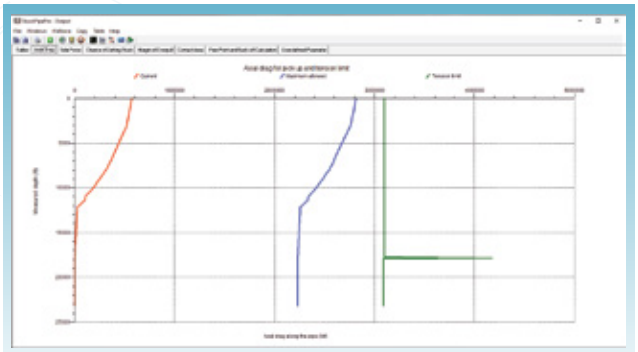
- Microsoft Windows® 10 or above
- Microsoft Office® 2016 or above
- Dual-core processor, 1.4 GHz or higher (Not compatible with ARM processor)
- 4 GB RAM (8 GB Recommended)
- 200 MB of free disk space for installation
- 1,280 x 768 display resolution



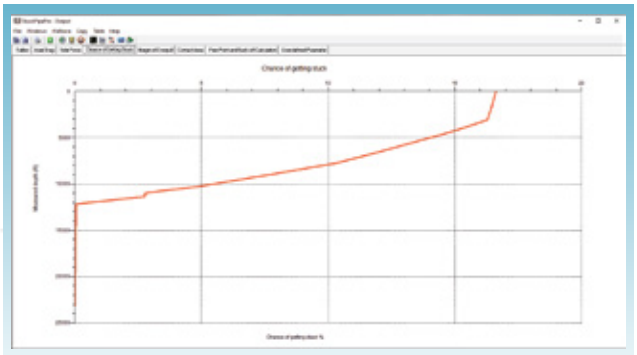
Free Point and Back Off Calculation



Contact Area Visualization



Axial Drag for Pick Up and Tension Limit



Chance of Getting Stuck

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