Drilling Software | Sophisticated Yet Simple

SurgeMOD®

Surge Pressure Prediction Model

Overview

Moving a pipe in a well is accompanied by mud displacement in the hole. This leads to pressure variations. Accurate predictions of surge and swab pressures are particularly important in wells where the pressure must be maintained within narrow boundaries to ensure trouble-free drilling and completion operations.

SurgeMOD is a complete surge and swab hydraulics model for drilling and completion. It analyzes the complex downhole hydraulics for running casing or making a trip for various pipe ending conditions and circulation sub tools.

SurgeMOD not only predicts the surge and swab pressures for a given running speed, but also calculates optimal trip speeds at different depths and the maximum allowable circulation rate after the casing or liner is set. The result is a higher percentage of successful casing/liner runs and tripping operations, particularly in ERD, slim holes, and deep offshore wells.

Benefits

Risk Mitigation

- With better pressure management and the ability to predict potential issues before they arise, SurgeMOD helps mitigate risks associated with wellbore stability, lost circulation, and other pressure-related complications.

Enhanced Success Rates

- Optimizing drilling parameters and providing actionable insights is particularly beneficial in challenging environments like extended-reach drilling (ERD), slim holes, and deep offshore wells.

Increased Well Productivity

- By preventing formation damage and other wellbore issues, SurgeMOD can help improve well productivity and long-term performance.

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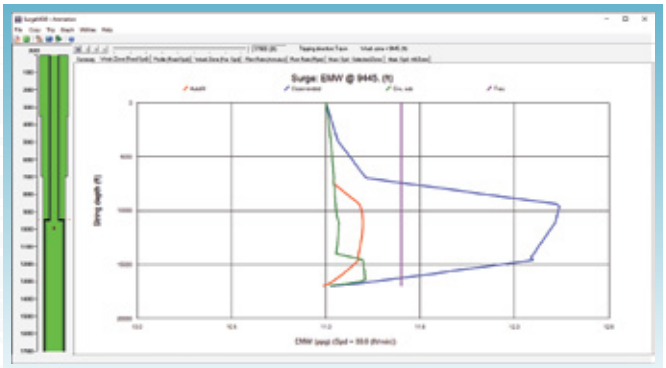
Features

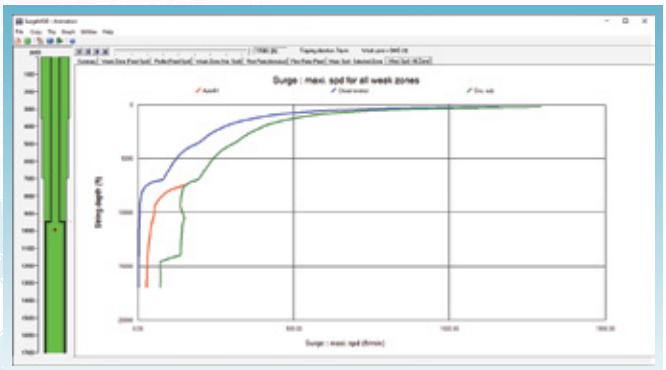
- Pipe end: closed/open/auto-fill/bit/circulation sub
- Fixed tripping speed analysis
- Sensitivity analysis on tripping speed
- Maximum tripping speed
- Multiple weak zones
- Pump while tripping
- Pressure drop cross float shoe
- Bingham plastic and power-law models
- Allowable flow rate analysis after the casing is set
- Tripping visualization
- Microsoft Word® report
- US oil field, SI, and customized units
- Multi-language: English, Spanish and Chinese

System Requirements

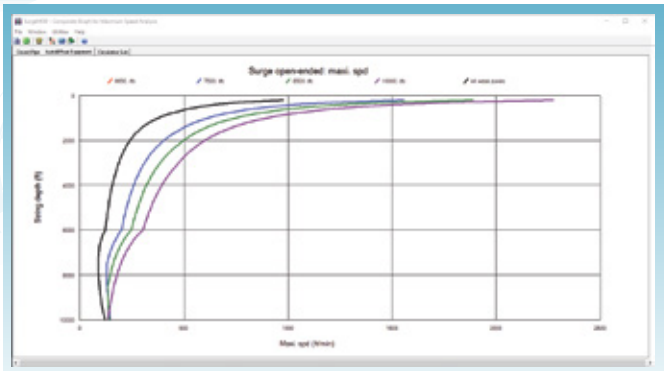
- Microsoft Windows® 10 or above
- Microsoft Office® 2016 or above
- Dual-core processor, 1.4 GHz or higher (Not compatible with ARM processor)
- 4 GB RAM (8 GB Recommended)
- 200 MB of free disk space for installation
- 1,280 x 768 display resolution



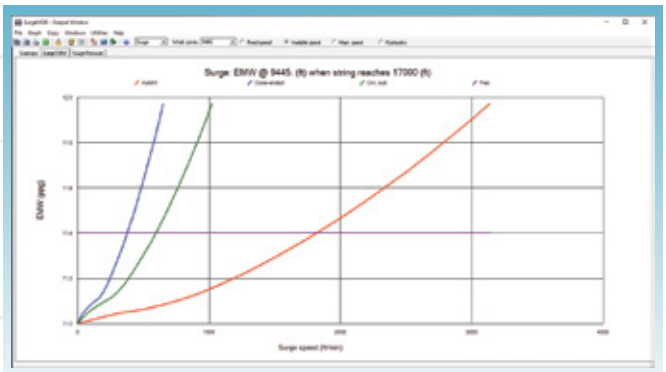
Surge EMW Profile



Maxi. Trip-in Speed vs. String Depth for All Weak Zones



Surge Open-Ended: Maxi. SPD vs. String Depth



Surge EMW vs. Speed

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