The Wellbore Stability module in JewelSuite™ GeoMechanics allows you to quickly and precisely analyze wellbore stability in order to evaluate the drilling risk for proposed well plans. You can calculate wellbore failure along the well trajectory for a proposed mud program and evaluate your casing design to prevent wellbore failure. This module enables you to reliably forecast wellbore instability before, during and after drilling to mitigate wellbore collapse, tight hole, stuck pipe, excessive hole cleaning and fishing, kicks, lost circulation, formation damage and sidetracks.

**Optimized well planning**

For wellbore stability calculations you can define input data as logs or constant values. Logs may be imported or derived from the 1D Model module in JewelSuite GeoMechanics. You can choose to work with a standard geomechanical model or an advanced mode model which includes inclined stress, temperature effects and/or bedding plane.

The workflow includes a Check Mud Weight (CMW) feature that makes it easy to calculate wellbore failure along the well trajectory for a proposed mud program or to assess mud weight use in offset wells. The Predict Mud Weight (PMW) feature in the workflow allows the optimal mud weight window program and casing designs to be derived from tolerated wellbore breakout, considering all information from 1D Model module and static kick tolerance, if needed.

Drilling direction plots enable you analyze the breakout width and the collapse pressure, fracture initiation and link up pressure for arbitrary well trajectories in one depth. Additional cross plots enable you to investigate the influence of certain input parameters on the predictions.

For quantitative risk analysis, you can incorporate the uncertainty of the input data and gain an understanding of their influence on the predictions. You can compare your predictions with observed breakout from caliper or image data and to drilling events.

Based on our lock concept, users can control any (re)calculations of results after input changes. You

**Applications**

- Offshore drilling
- Exploration wells
- Development drilling
- Horizontal wells in unconventional fields
- High angle and extended wells
- Depleted reservoirs

**Features and benefits**

- Complete wellbore stability analysis workflow
  - Identifies wellbore stability problems prior to and after drilling
  - Ensures optimum well paths
  - Identifies safe mud weight windows to prevent drilling problems
  - Minimizes risk and improves safety during drilling
  - Optimizes reservoir performance
- Connectivity to other JewelSuite GeoMechanics modules for an advanced geomechanical workflow
  - Build 1D geomechanical models with the 1D Model module
  - Access and incorporate real-time WITSML data into your analysis
  - Migrate 1D well-centric models to 3D reservoir-centric models with 3D Model module
  - Analyze faults, fractures and caprock with Fault and Fracture Stability module
can work on multiple cases which enables you to define and manage different scenarios for one particularly wellbore or different wellbores.

**Improved efficiency and ease of use**
The Wellbore Stability module accelerates your workflow and reduces errors. The workflow strip leads you step-by-step through processes and enables even the most novice users to quickly learn the application. The built-in audit trail captures all actions performed for a project and provides auditable and reproducible modeling steps.

**Seamless connectivity with other applications**
You can use the Wellbore Stability module within JewelSuite GeoMechanics as a standalone application or in combination with other modules such as 1D Model, 3D Model and Fault and Fracture Stability for an advanced, integrated geomechanical workflow.

JewelSuite GeoMechanics is built on the JewelEarth™ development platform so you can easily exchanging data between other JewelSuite applications through shared files, or by dragging and dropping data.

Learn more: contact us today
To learn more about JewelSuite GeoMechanics contact your Baker Hughes representative today or visit www.BakerHughes.com/reservoir-software.