PressCheck Well-Centric Geomechanical Modeling Software

Predict abnormal pressure during drilling to mitigate kicks, lost circulation, and NPT

Applications
- Offshore drilling
- Exploration wells
- High angle and extended reach wells
- Complex geology
- Depleted reservoirs
- Underbalanced drilling
- Environmentally sensitive areas

Features and Benefits
- Complete geomechanical modeling workflow
  - Ensures accurate calculations of rock properties, overburden, formation pore and fracture pressure, and horizontal stress from well logs and drilling data
  - Minimizes risk and improves safety during drilling
  - Optimizes reservoir performance
- Connectivity to advanced geomechanical applications
  - Analyzes wellbore stability with WellCheck™ software
  - Migrates 1D well-centric models to 3D reservoir-centric models with 3D Static Geomechanics
  - Simulates full-field geomechanics with 3D Dynamic Geomechanics
  - Analyzes fault and fracture slip with 3D Fault Slip Analysis
- Strong foundation of GMI•ModelBuilder and JewelSuite
  - Offers proven technology of industry-leading geomechanical modeling software
  - Leverages latest technology of JewelSuite subsurface modeling software

The Baker Hughes PressCheck™ next-generation, well-centric geomechanical modeling software provides a proven workflow to calculate geomechanical models (rock mechanical properties, overburden, formation pore and fracture pressure, and horizontal stress) from well logs and drilling data. In particular, you can predict pore pressure using traditional log-based trend line methods calibrated with drilling data. You can also access advanced methods such as effective stress, buoyancy, centroid, and effects of injection or depletion.

New technology based on existing reservoir software
PressCheck software is based on the existing Baker Hughes JewelEarth™ development platform and GMI•ModelBuilder™ geomechanical modeling software. JewelSuite software provides a new technology for fully integrated geomodeling workflows, an advanced user interface, a 3D framework, and powerful collaboration and customization tools. JewelSuite combines technical domains (such as geology, reservoir engineering, drilling, completions, geomechanics, wellbore construction, production engineering, and asset management); spatial scales (basin/regional to wellbore components); dimensions (1D, 2D, 3D, and time); and third party technology (such as geospatial, seismic, hydraulic fracturing, and fluid flow and mechanical simulation).

Strategic value in well planning
PressCheck software enables you to reliably predict abnormal pressure during drilling to mitigate kicks, blowouts, lost circulation, and nonproductive time (NPT). You can optimize your well plans and define a safe drilling window to maximize performance, minimize risk, and improve safety. You can also apply the PressCheck geomechanical model to advanced geomechanical applications such as wellbore stability, full-field geomechanics simulation, and critically stressed fractures and faults. Because of that, you have better insight to optimize the performance of your wells and reservoirs.
With PressCheck software, you can use well logs and drilling data to create well-centric geomechanical models consisting of lithology, rock mechanical properties, overburden pressure, pore pressure, minimum and maximum horizontal stress, and fracture pressure. You can display drilling events, manage multiple wells and cases, depth-stretch logs and tops, manipulate logs graphically, analyze local correlations, and create customizable reports.

With the workflow guide, which is the equivalent of a recipe book for geomodeling, you can access relevant workflow processes. With the audit trail, you can view information about all actions that have been performed for a project to create auditable and reproducible modeling steps. You can then re-execute these operations from the audit trail and convert them to workflow automation scripts to increase efficiency by avoiding repetitive actions. Using the programmable, scientific property calculator, you can execute user-defined geomechanical algorithms. You now have access to a comprehensive and proven geomechanical modeling workflow.

Seamless connectivity with other applications
You can use PressCheck software independently to create a geomechanical model, or use that model as the foundation of an advanced integrated geomechanical workflow. For example, you can link PressCheck software with JewelSuite’s real-time/WITSML add-in to access drilling data from remote locations for real-time geomechanical modeling. You can also combine PressCheck software with JewelSuite’s other new geomechanics applications. You can use the applications together seamlessly, exchange data between them via shared files, or drag and drop data between them. This gives you access to a full suite of powerful yet easy-to-use well-centric and reservoir-centric geomechanics software.

Learn more: Contact us today
With PressCheck software, you can quickly and confidently create geomechanical models that are accurate and consistent using a sophisticated and flexible workflow. This workflow enables you to minimize uncertainty in your sparse data, maximize confidence in your modeling results, maximize your understanding of the complete picture, and address more challenging problems and greater opportunities.

To learn more about using PressCheck software to predict abnormal pressure during drilling to mitigate kicks, lost circulation, and NPT, contact your Baker Hughes representative today or visit bakerhughes.com.

Pore pressure prediction from gamma ray zonation model, and trend lines for composite density, and resistivity

3D visualization of well trajectory with logs and tops