Drillbench
Dynamic Well Control

Drillbench™ Dynamic Well Control is a unique and flexible tool for planning and support of well control operations. The application is based on dynamic, multiphase simulations and delivers reliable predictions of wellbore and surface conditions, during a well control incident. This results in better understanding of the well control risk associated with a planned drilling operation. Due to flexibility in scenario building, it is also possible to evaluate the impact of different circulation and mitigation options and to tune operational procedures to minimize operational risk, ensuring as efficient drilling operations as possible.

All standard well control circulation methods like drillers and wait-and-weight can be simulated. The model can also handle bullheading scenarios and other complex well control operations. The user can select between fully automated workflows, interactive mode, or a batch table that can build up flexible circulation scenarios to replicate a variety of use cases.

The Drillbench Dynamic Well Control engine is fully transient including dynamic temperature and can accurately replicate the wellbore conditions during a well control incident—including the transition from dissolved to free gas in the well.

Drillbench Dynamic Well Control is a powerful desktop application that provides the user with valuable insight and flexibility to compare different operational solutions and sensitivities. External data can easily be imported for reference or data can be extracted from Drillbench Dynamic Well Control and used in other applications.

Drillbench Dynamic Well Control can easily connect to the DrillPlan™ coherent well construction planning solution and extract case data to avoid manual input and risk of inconsistencies.

Drillbench Dynamic Well Control is also cloud enabled and available through the Delfi™ digital platform.
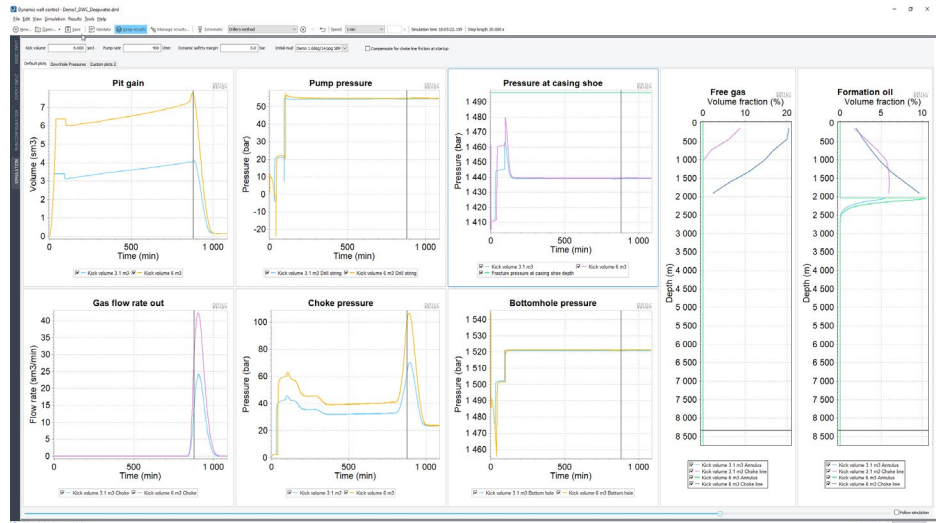
Evaluate kick tolerance and validate that a kick can be circulated out with drillers circulation. Two sensitivities are performed – 3.1 and 6 m3.

Applications:
→ Dynamic kick tolerance calculations.

→ Evaluation of different circulation methods.

→ Bullheading simulations.

→ Complex well control scenarios with loss-zones.

→ Evaluate surface equipment limitations.

→ Well diagnostics during kick incident.

→ Operational decision support (what-if simulations).

→ Advanced well control training.

→ Post-analysis and incident investigation.

Benefits:
→ Optimize well design through better understanding of pressure margins.

→ Improve operational efficiency by reducing non-productive time.

→ Evaluate alternative well designs with respect to well control risk.

→ Create risk awareness and understanding.

Features:
→ Powered by OLGA™ multiphase engine.

→ Dynamic multiphase engine.

→ Dynamic temperature calculations.

→ Fully compositional PVT model with accurate modelling of phase transitions.

→ Flexible reservoir characterization.

→ Multiple reservoir zones with production or loss.

→ Non-Newtonian flow (pressure and temperature dependent rheology).

→ Identification of minimum and maximum pressure loads during circulation.

→ Different reservoir compositions ranging from black oil to methane (custom and pre-defined).

→ Automated, interactive, and batch table run modes.

→ Connectivity to the DrillPlan solution enables users to load project data.

→ Cloud-enabled (lift and shift).

→ Customizable and configurable graphics display.

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