



# MINERVA HYDRAULICS™

**Bey★nd**

ENERGY SERVICES & TECHNOLOGY CORP.

# Our Reason for Being

**M**ODEL your challenges  
**P**REDICT your parameters  
**D**ESIGN your solutions

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Software for optimizing oil and gas drilling operations

## Introducing Minerva Hydraulics™

Beyond offers hydraulic simulation software for your MPD Engineering planning and execution support tasks. Minerva Hydraulics™ provides a Software as a Service (SaaS) solution that offers simulation capabilities for all hydraulic drilling tasks, including:

- ECD and ESD modeling
- Downhole pressure modeling
- Temperature profile modeling
- Hole cleaning evaluation
- Automated tripping parameter design (swab and surge)
- Automated mud rollover design

**Contact our sales team for a FREE trial license**



# Software as a Service

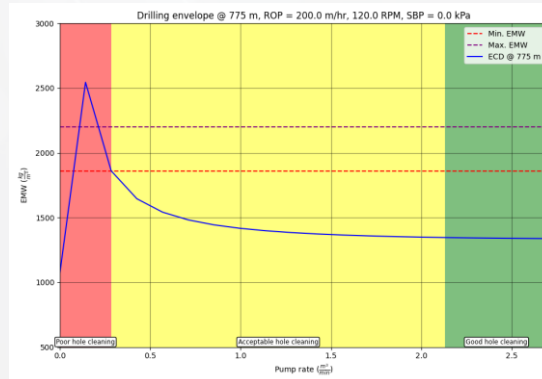
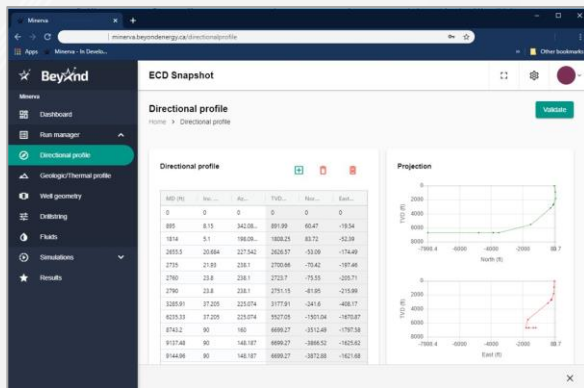
- Cloud based deployment hosted in Microsoft Azure
- No installation required, use from any computer
- Simulations run in the cloud, and results are served to your individual Minerva Hydraulics™ account
- Your files are also stored in the cloud and can be downloaded and shared offline.

## Drilling Hydraulics

- Engine based on API RP13D and internal research
- Steady state hydraulics with transient options such as *mud temperature effects on ESD during connections*
- Variety of tools and complex scenarios such as *deep-water wells and drill strings with multiple flow ports at different depths.*
- All workflows and modules support MPD by design

## Design and planning

- Automated trip design. Do swab/surge pressure analyses with many fluids.
- Automated fluid rollover. Design rollover schedules for kill operations or complicated pumping schedules
- Parametric analysis. Compute envelopes of any combination of hydraulic variables to optimize your drilling parameters



# We do Managed Pressure Drilling.



V1.0