

# Interactive Petrophysics

## Mineral Solver module

Complete your full interpretation workflow in minutes instead of hours, using the intuitive deterministic and probabilistic workflows of Interactive Petrophysics™ log analysis software.

### BENEFITS

- Multiple models enable the whole reservoir to be accurately modeled at one time.
- Error displays from reconstructed curves enable immediate quality control of interpretations.
- Complex lithological areas can be interpreted with minimum error.

### QUICK POROSITY, MATRIX, AND FLUID INFORMATION

Interactive Petrophysics log analysis software is a fast and efficient PC-based application for reservoir property analysis and summation.

The Mineral Solver module enables probabilistic log interpretation of complex lithologies or dual-porosity reservoirs. Used to solve equations related to mineralogy, porosity, and fluid saturations in formations, the module is especially valuable when dealing with complex lithologies and varying fluid and porosity types. The identification of different clay types in a reservoir, such as kaolinite and illite, enables more educated decisions about the well's porosity and permeability structure.

### FEATURES

- Multiple models for accurately modeling reservoirs with mixed lithology or bad hole sections
- Models mixed by zone or using cutoff criteria
- Interactive graphics for setting parameters
- Automatic calibration of the model using core XRD data—use of core data for more precise interpretation

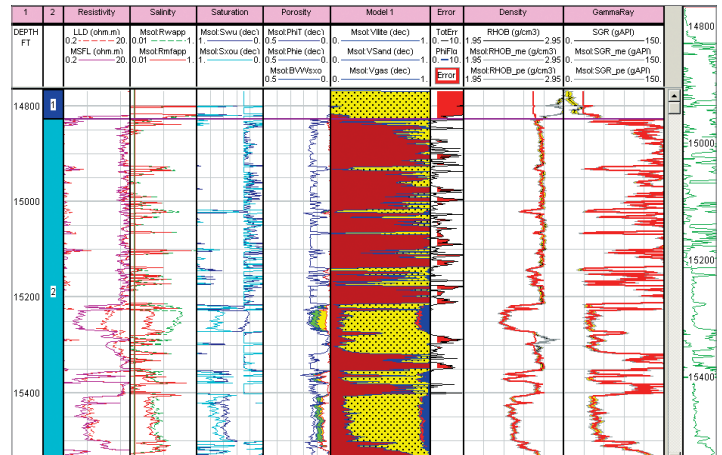
### HOW THE MINERAL SOLVER MODULE WORKS

Using singular value decomposition, the module solves a set of normalized linear equations for results.

A model describing the main minerals and fluids in the rock is created. Log curves and their associated equations are selected, together with the minerals and fluids thought to be present in the well. The program solves the system of equations to find the most probable result for each layer in the well.

When the model is run, it reconstructs the input log curves and compares them to the original input. The error between the original and the reconstructed curves is displayed. This indicates the accuracy of the fluid and mineral interpretation.

If there are large errors, you can adjust the model in accordance with the chosen matrix or input log curves to give the best possible reconstruction. Models can be combined to give the final



Mineral Solver module results.

result over the full well. With this result, the best model can be used over each zone or section of the well, giving you the most accurate results for your entire well in a single results set. Results are then passed on for use in modeling, completion, and drilling decisions.

Designed by petrophysicists, Interactive Petrophysics software fits the needs of both expert and casual users. The truly interactive nature of the software enables you to complete an interpretation in minutes instead of hours. The Mineral Solver module adds key interpretation capabilities to the Interactive Petrophysics suite, helping you to understand your complex reservoirs more accurately.

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