# Unprecedented Reservoir Detail Incorporating All the Information

RockMod® performs multiple stack (AVO/AVA) geostatistical reservoir characterization to produce multiple highly detailed models through tightly integrating disparate data across all pertinent geoscience domains. The outcome is accurate reservoir models in depth for prediction of field reserves, fluid flow patterns, and future production. Another value it provides is a reliable basis for quantitative measure of uncertainty. **RockMod** is relevant where elastic parameters like P-Impedance, S-Impedance and Density are needed to distinguish facies of interest.
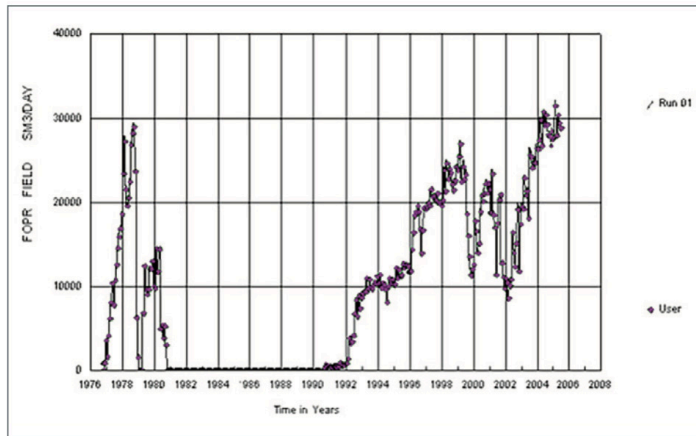
Excellent match in the prediction of monthly production rate from a simulator (black line) versus historic data (dots). No porosity modifiers were used in the simulation model.
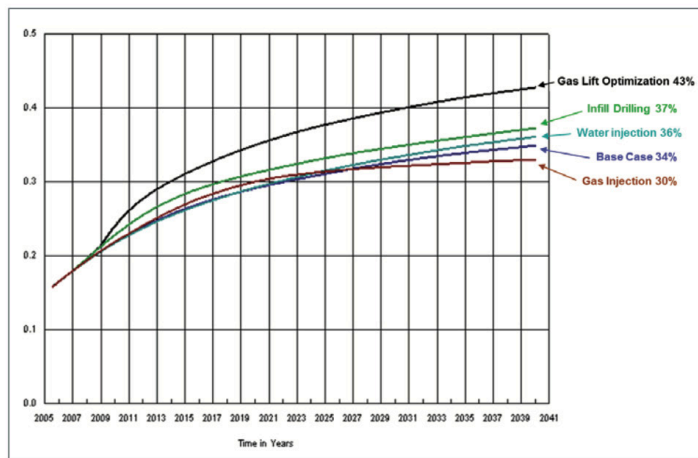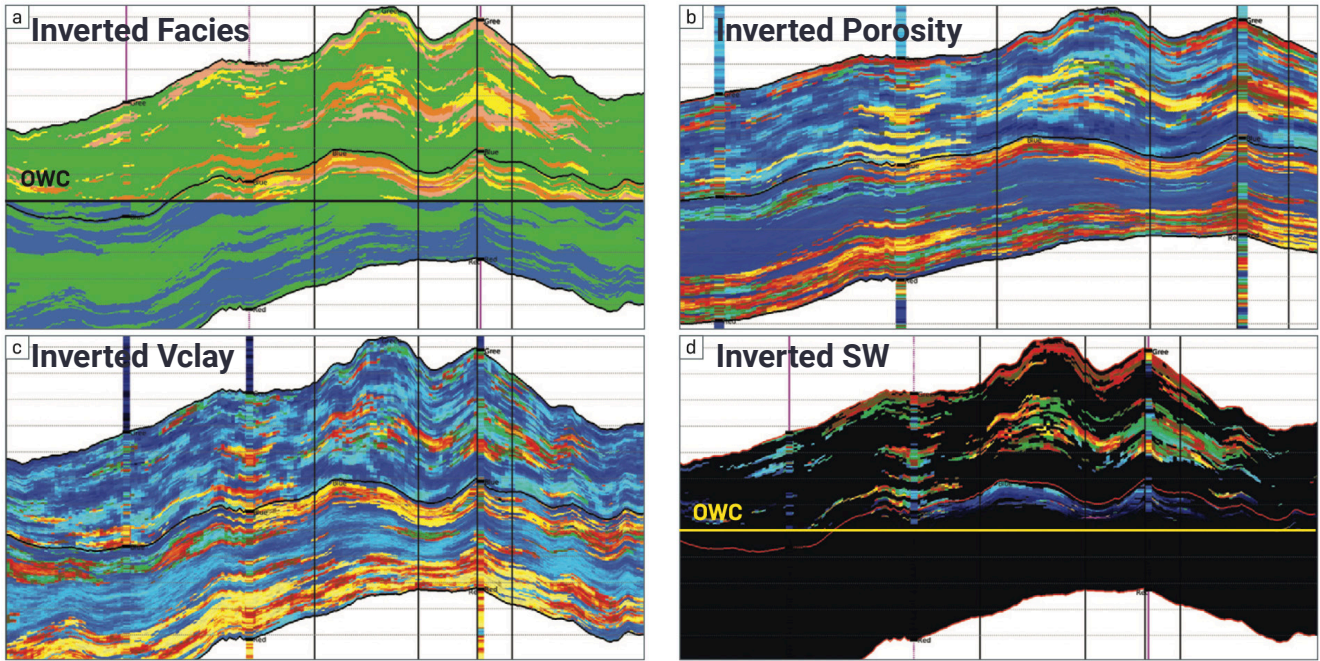

Projected ultimate recovery for various production scenarios through 2040.

Presented at the 2008 Petroleum International Exhibition and Conference held in Abu Dhabi, UAE, 3-8 November 2008. SPE paper 118178.

- Produces accurate reservoir models that are consistent with all data and knowledge available in the field, ready as input for follow-on flow simulation and production assessment (see figure on page 2)
- Generates highly detailed multiple realizations to better capture uncertainties associated with data, models, and thin beds

Key features and benefits

- Direct estimation of engineering and petrophysical properties with facies
- Input Rock Physics models honored
- Invert in depth with an input velocity model
- Multi-level facies association and ordering
- Constant, 1D, 2D and 3D facies proportions
- Intuitive 1D and 3D facies probabilities trend editor
- Flexible variogram modeling
- Backus upscaling of elastic properties for enhanced calibration with seismic
- Advanced geophysical options: 4D, PP-PS, and Anisotropic Inversion with laterally-varying wavelets and S/N
- Automated quality controls for single and multiple realizations
- Support for multi-core and multi-machine processing for maximum productivity
- Quick setup available to speed up job preparation
- RockRank tool with flexible cutoff criteria to select P10, P50 and P90 models
- Efficient and accurate transfer of results into corner point grids (CPGs) with RockScale to facilitate reservoir simulation

Simultaneous geostatistical realization of several reservoir properties. Note the behavior of each of the properties across the oil-water contact. Presented at the 2008 Petroleum International Exhibition and Conference held in Abu Dhabi, UAE, 3-8 November 2008. SPE paper 118178.