

# Harmony Enterprise™

Reservoir Management & Production Software

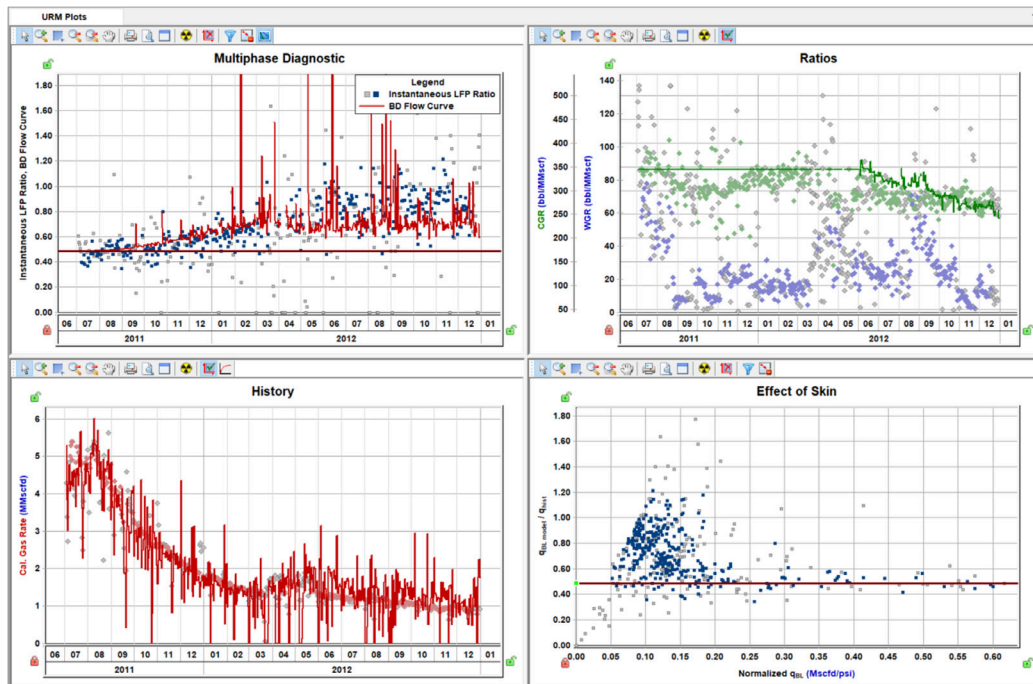
**Fueling Upstream Success: Overcoming Reservoir and Production Challenges for Optimal Value**



# Overview

Harmony Enterprise by S&P Global Commodity Insights assists Upstream E&P companies in solving complex reservoir and production challenges. This multi-user engineering platform integrates well performance analysis, reserve evaluation, and production optimization, empowering engineers to evaluate reservoir and production potential, while maximizing recovery and profitability.

Numerical Unconventional Reservoir Model



# Benefits

- Gain efficiencies in your daily operations with a single platform that combines decline, RTA, and nodal analysis workflows to aid in improved decision-making.
- Collaborate with a shared database and with regularly scheduled updates, ensure your data is always current.
- Optimize production using an IPR curve generated from a multiphase numerical model rather than an empirical correlation.
- Produce fast yet rigorous numerical models that let you get results in a fraction of the time compared to dedicated simulators.
- Improve reserve estimation by understanding uncertainty with probabilistic methods that help you assess production potential and risk.

# Top Workflows

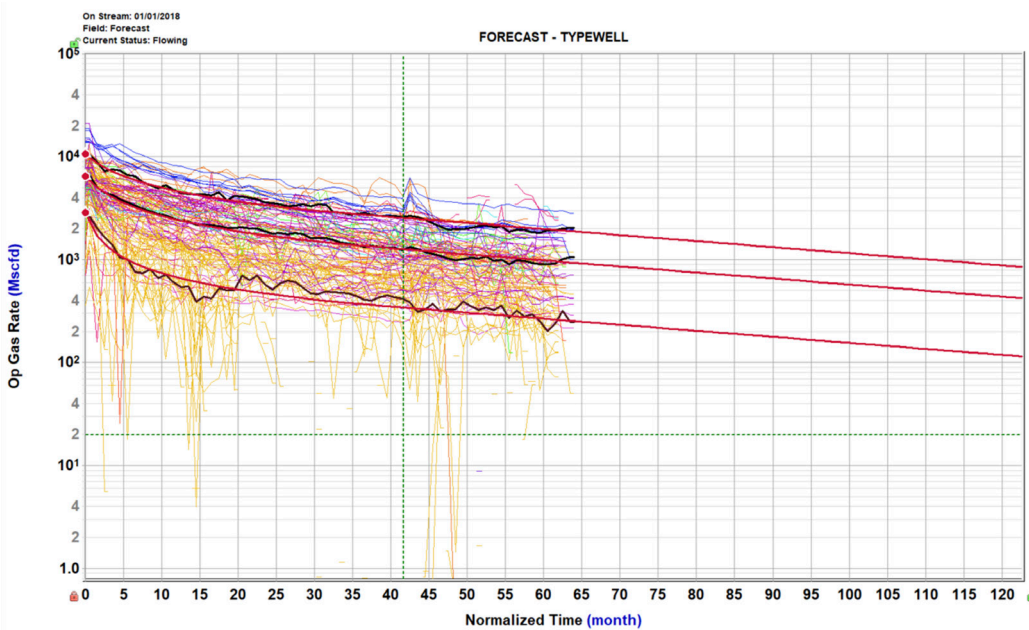
- **Generate Reserve Estimates**
  - Forecast the production of existing and planned wells using a combination of analysis methods such as declines, volumetrics and material balance.
- **Reservoir Characterization**
  - Better understand the reservoir to ensure optimal management and production.
- **Reservoir deliverability optimization**
  - Determine the ideal completion strategy for your wells.

# Module Features

## Forecast

Empirical methods to analyze production, forecast and manage reserves

- **Production Data Analysis**
  - Decline analysis – Arps methods, including limiting decline and multi-segment methods. Intelligent auto forecasting, and probabilistic declines
  - Ratio analysis and associated forecasting
  - Static material balance
  - Volumetrics
- **Reserve Evaluation**
  - Assign reserves classifications to wells or group forecasts
  - Consolidate forecasts based on classification and hierarchy
- **Typewell Analysis**
  - Normalize well production for oil, gas, water and BOE
  - Generate average, P10, P50, P90 production profiles
  - Normalize rates on attributes such as horizontal length, number of stages, or net pay
  - Append forecasts created on individual wells

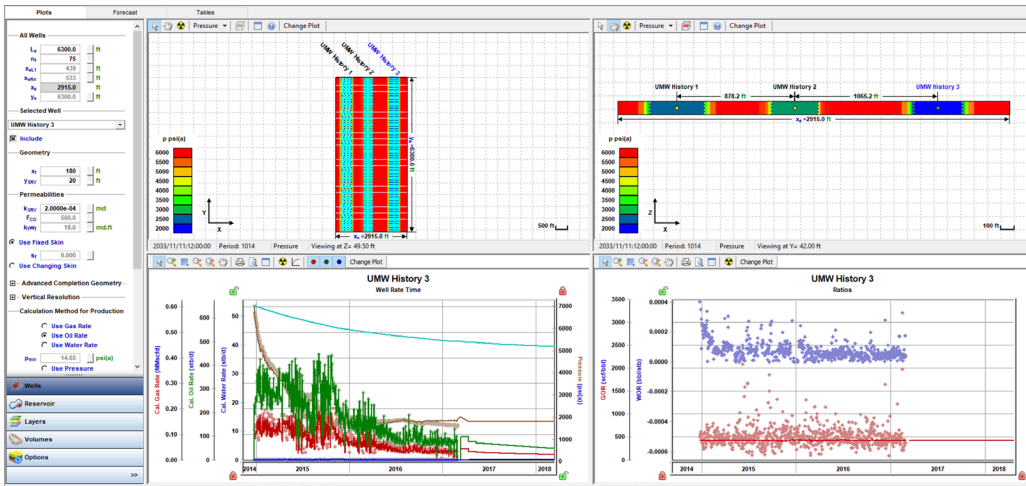


Typewell analysis with wells colored by attribute.

## Reservoir

Incorporate your flowing pressure data to better understand your well using Rate Transient Analysis methods.

- **Estimation/Characterization**
  - Typecurves
  - Specialized plots such as sqrt time plots
  - Analytical and Numerical models with history matching
- **Diagnostics**
  - Identify aquifer pressure support, well interference, and productivity loss
- **Modeling/Forecasting**
  - Multiphase Extended Numerical Model
  - Multi-well numerical model
  - Re-fracture modelling
  - Pressure dependent permeability and rock compressibility



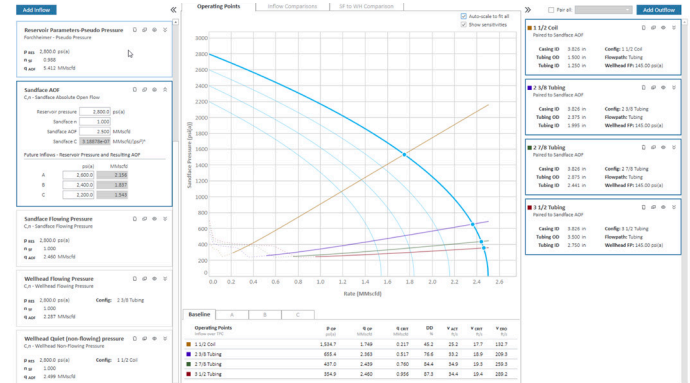
## Optimize

Identify the right strategy for well production optimization using nodal analysis methods.

- Deliverability
  - Generate past, current and future IPR curves
  - Create TPC curves for different scenarios
  - Identify liquid loading and erosion
- Advanced Forecasting
  - Create multiple wellhead forecast scenarios
  - View the IPR for any forecast scenario at any point in time



Advanced Forecasting



IPR/TPC Worksheets

Learn more at [spglobal.com/harmony-enterprise](http://spglobal.com/harmony-enterprise)

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