Best in Breed
Integrated Reserves Management

An Inside Look at Val Nav™
The Industry’s Most Powerful Economics, Forecasting and Reserves Solution

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Integrated reserves management

Objective:

- Determine realistic range of values for assets and the corporation
- Create reports for regulatory filings and executive stewardship
- Provide data for planning and portfolio management
Integrated reserves management

Functionality:

Administration: Data storage, input/output, check & edit, archive, security

Evaluation: Forecast developed and undeveloped wells
Before and after tax economics (domestic & international)

Reserves Mgmt: Reconcile and balance changes in reserves and value

Analysis: Sensitivity analysis (multipliers, price scenarios, activity levels)
Custom and canned reporting of reserves, value and filing data

Other: Integrate with other Best in Breed, Fit for Purpose software
Survey Question 22

22. How long does it take you to forecast and run -with economics- approximately 1,000 NEW PDP wells?

- 1 day
- 1 week
- 2 weeks
- 1 month

There is a disconnect between choices and reality.
Evaluations must be done in minutes and hours!

How would you use those extra hours and weeks and months?
A 12 minute, 1000 well economic evaluation

01. Load Production Data (2 MIN)
02. Best-fit forecasts (3 MIN)
03. Import a price deck (0.5 MIN)
04. Import opex, ownership (4 MIN)
05. Run PDP economics & store full well-level results (2.5 MIN)
Increased productivity where it matters

Assisted Forecasting
- Used for acquisitions, competitor analysis, non-operated analog wells
- 90% of the forecasts will be the same as your engineer’s

Fast Forecast Revisions
- Used for data updates, editing 10% of assisted forecasts
- Seconds per well: click based with outlier rejection

The Gold Standard for Type Wells
- Construction methods to avoid errors, quickly find the right analog wells
- Analog Forecasting™ for new wells and Aggregation for percentiles

Reserves Management
- Save man-weeks with automated year end reserves reconciliation
Assisted forecasting

World class because it works!
- All auto forecasts are not equal
- FAST - 90% of wells need no change
- Arps, SEPD, PLLR, Duong

More than just a best fit
- Detects and rejects outliers
- Fits all trends / operating conditions
- Tests for hundreds of exceptions
- Complex algorithm to pick the best
- Customize default fit parameters
- See for yourself

Use: rollup to check the quality
slide show to flag wells for edit

20 well total
Adjust forecasts in mere seconds

- **Ctrl** refit from point **click** same Arps
- **Alt** fit in box & align **B** best of Arps
- **Alt** best fit from point **click** best of Arps
- **Ctrl** draw GOR fit **D** Arps harmonic or exponential
- Hot keys for fine tuning
State of the art type wells

Quickly find the right analog wells
- Maps
  Geographic connection
  Bubbles & colors for comparisons
- Probit plots
  Find outliers
  Test inclusion / exclusion of wells

Methods that avoid common errors
- Average history and prediction
- Eliminate survivor bias
- Don’t use the time slice method
State of the art type wells

New technology
- Statistical model of drilling outcomes
- Aggregation to increase reserves
- Average with weighting factors
- Scale for well length
Automated Reserve Reconciliation

The Problem
• Year end reconciliation is the most time consuming reserves management function
• Manual reconciliation is error prone

Val Nav Offers the Solution
• Save man-weeks of work through automated change record reconciliation
• Automation will also prevent errors
• Industry’s fastest economic engine
• Never do this by hand again!

Note
• Reserve management is defined by change record generation.
• Integration of forecasts, economics and reserves makes automation possible
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What’s Your Reality?