The corporate solution for evaluating, managing, and reporting reserves
• Used by over 2700 clients
  ◦ Banks, operators & major 3rd party reserve auditors
• Modeling economics in over 35 countries worldwide
• Providing proven and trusted reserve and economic calculations for almost 30 years
• Backed by a knowledgeable support, consulting & sales staff
Modeling economics in over 35 countries worldwide
PHDWin Version 3

Designed to move PHDWin from a project bases system to a corporate system.
PHDWin Version 3

Designed to support improved:

• Scalability
• Data discipline & compliance
• Customization & flexibility
• Shared business intelligence
• Improved mythology
Scalability

MS-SQL Server

• Industry standard
• Stable and reliable performance
• Support for client/server deployment
• Better multi-user performance
• PHDWin custom data layer
• Express or full versions
Scalability

MS-SQL Server

• Database size is scalable
  ◦ 100,000 case test DBs
  ◦ Combine assets

• Open data structure

• New inputs
  ◦ daily data, scheduled projections, Flow Regime ID

• Utilize enterprise hardware or run locally
Scalability

MS SQL Server Logins provide:

• Database security
• Customizable interface
Scalability

MS SQL Server Logins provide:

- User chat
- Private/Public items
  - Sorts
  - Filters
Scalability

New **PHDWin** Economics Engine

- Parallel processing / Multi-threaded economics
  - Improved hardware directly correlates with performance
  - Improved speed of calculations & reporting
- Improved Cash Formula scripting language
- Uninterrupted workflow while reporting
- Run multiple instances
- Run multiple reports at once
Data Discipline

Corporate Controls

- Impose and maintain corporate standards
- Ensure comparable, quality results
- Enforce consistency
- Reduce QC time
- Reduce data entry errors
Data Discipline

User Defined but lock down

• product definitions
• phase configurations

for all cases.
Data Discipline

Create nested libraries for
- fields, reservoirs and zones
- PRMS categorization
  - Reserves
    - Proved
    - Probable
    - Possible
  - Contingent
  - Prospective
Data Discipline

Highly granular Investment categories can be linked
• to user defined depreciation methods for A-tax calculations, book accounting or cost recovery.
• to less granular Investment Reporting Categories

On a corporate bases to force standardization.
Customization

Highly customizable interface

- Data “Forms” are user definable
- Multiple data “Forms” can be grouped to create “Views” to define your workspace
Customization

Tailor “Views” to show data relevant to your job.
Customization

Improved Graphing

• Create unlimited graphs on each case
• Show multiple graphs at a time
• Create and apply Graph templates with corporate control
• Plot Monthly, Daily and Test Data
• Plot any product volumes or economics
  ◦ Revenue, expenses, royalties, etc.
  ◦ Gross or net
  ◦ Monthly or cumulative
Customization

• More graphing options
  ◦ New projection methods
    • Scheduled
    • SEDM
  ◦ New plotting methods
    • Cartesian, semi-log and log log
      – Absolute time
      – ΔTime from first production (days)
      – ΔTime^2 from first production (days^2)
      – Δ time^{1/2} from first production (Days^{1/2})
      – Δ time Material Balance Time (MBT)
Customization
Customization

Better Reporting

• Create custom report tables
• Display any interim calculation
• Report any product or stream
Improved Mythology

Improved ECL calculation

• economic limit calculation finds the date in which cumulative cash flow is Maximized
  ◦ Ideal for accounting for:
    • Shut in periods
    • Constrained wells
    • Price fluctuations
    • Recurring annual expenses
  ◦ Previously used in 2.9 for groups.
  ◦ Now used for all economic limits
Improved Mythology

• Control what is appropriate
  ◦ Change depreciation methods by purpose.
  ◦ Change investment depreciations by fiscal model.
Improved Mythology

Nested GELs

• Group Economic Limit (GEL) can now be nested.
# Shared Corporate Knowledge

Scenarios Report with unique:
- Report start dates
- Max economic years
- Discounting rates or methods

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<th>SCENARIO NAME</th>
<th>REPORT DATE</th>
<th>REPORTING PERIOD</th>
<th>START OF PERIOD</th>
<th>MAX ECO LIFE (YEARS)</th>
<th>DISCOUNT DATE</th>
<th>DISCOUNT FACTOR (%)</th>
<th>DISCOUNT METHOD</th>
<th>N</th>
<th>CASH ACCRUAL TIME</th>
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<td>01/01/2014</td>
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<td>n Times per Year</td>
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<td>Mid-Month</td>
</tr>
</tbody>
</table>
Shared Corporate Knowledge

Scenarios & Qualifiers

• Seamless data sharing between various needs
  ◦ Improves business intelligence
  ◦ Improves efficiency

• Similar to Aries but more structured
  ◦ Data qualified by qualifier or scenario

• Includes hierarchical qualifiers

• Nearly unlimited scenarios
Shared Corporate Knowledge

Scenarios & Qualifiers

• Added Price, Expense, Investment and other economic qualifiers
• Share or inherit from other users
• Users can work concurrently within same or different scenarios
• Arrange qualifiers in a hierarchy
• Ownership qualifier Replace 2.9 “Partners’
• Projection Qualifier replace 2.9 “Archives”
Shared Corporate Knowledge

Unqualified Data
- Monthly Production
- Daily Production
- General Information
- ID Codes
- Test Data

Qualifier Controlled Data
- Price
- Expenses
- Investments
- Ownership
- Projections
- Shrinkage
- Multipliers

Scenario Controlled Data
- Discounting Settings
- Incremental Tree Set Up
- Recompletion Tree Set Up
- Group Case Inclusion
- Fiscal Model settings
- Economic Options (i.e. Kill Dates or Cutoffs)
Shared Corporate Knowledge

Link Scenarios for consistent results:

- Sets of cases
- Incremental & recompletion trees
- Group case inclusion
- Discounting & report settings
Conclusion

• MS-SQL Server is faster and more reliable
• MS-SQL Server allows very large databases (100,000 cases)
• MS-SQL Server is a true multi-user environment
• SQL allows for entire corporate assets to be included in a single database
  ◦ Scenarios allow for multiple versions to be easily maintained
  ◦ Scenarios and Qualifiers allow for fast, seamless data sharing.
• New corporate level features allow greater data discipline
• Graphing of any stream will aid in QC and analysis.
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Thank You for Your Time