

Monograph 4, Monograph 3 ... and the SEC

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Some Questions ...

- What special reserves reporting regulations does the SEC have for unconventional resources, and resource plays in particular?
- Which regulations that apply to all resources are particularly important for unconventional?
- What recent technologies has the industry proposed or adapted especially for unconventional?
 - What is the SEC's position on these recent technologies?
 - How can we evaluate a technology for which the SEC has issued no formal guidance?



Special Regulations for Unconventionals?

- In resource plays,

None

Regulations Meant for All Resources

Especially Important for Unconventionals

- Only directly offsetting locations to Proved Developed Producers (PDP's) qualify as Proved Undeveloped Producers (PUD's) *except when* ...
- Resources booked as PUD's must be converted to PDP's within five years of initial booking *except when* ...
- 'Reliable Technology' can provide for exceptions to seemingly rigid rules *when* ...

What Traditional Technologies Are Generally Acceptable to SEC Staff for Unconventionals?

- Decline curve analysis with Arps hyperbolic model, minimal terminal decline rate
- Analogy
 - Type wells (with reservations)
- Volumetrics (with reservations)
- Reservoir simulation (with reservations)



What Recent Technologies Are of Interest?

- SPEE Monograph 3
 - Methodology for extending PUD locations beyond immediate offsets
 - SPEE Monograph 4
 - Alternative 'simple' decline models
 - Rate-transient analysis
 - Modified and enhanced reservoir characterization and simulation techniques
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What Will It Take for SEC to Accept Recent Technologies, Such as Monographs 3 and 4?



- Forecasts must meet criteria for proved reserves
 - Booked volumes 'reasonably certain'
 - Volumes 'much more likely than not'
 - As historical data added, EUR for fixed groups of wells remains constant or increases
- Technology used for forecasts must meet criteria for 'reliable technology'



What is 'Reliable Technology'?

From SEC Regulation S-X, 4-10(a) (25):

'Grouping of one or more technologies (including computational methods) that has been field tested and demonstrated to provide **reasonably certain results** with consistency and repeatability in formation being evaluated or **analogous formation**'

What Guidance Has SEC Provided for Reliable Technology?

From SEC "Compliance and Disclosure Interpretations (CD&I)," October 26, 2009:

- **Question:** Does the staff intend to publish a list of reliable technologies that the SEC will accept for the determination of proved reserves?
- **Answer:** No. An issuer has the burden of establishing and documenting the technology (or set of technologies) that provides reliable results, consistent with the criteria set forth in Rule 4-10(a)(25) of Regulation S-X. This information should be made available to the Commission's staff upon request in support of any reserves estimates that the staff may be reviewing.

How Are Technologies in SPEE Monographs Affected by Reliable Technology Requirements?

- Monograph 3: Some filers have, in interchanges with SEC staff, been able to demonstrate that they have field evidence that their application of technology meets criteria – but no ‘blanket’ approval
- Monograph 4: Similar outcomes with, e.g., analytical and numerical models – again, no blanket approval



What Is the 5-Year Rule?

- Rule [4-10(a) (31)]: Undrilled locations classified as having undeveloped reserves only if development plan has been adopted indicating they are to be **scheduled to be drilled within five years** unless specific circumstances justify longer time
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And Guidance on 5-Year Rule?

Short summary and interpretation of SEC
"Compliance and Disclosure Interpretations
(CD&I)," October 26, 2009

- Exceptions generally limited to
 - Development projects which cannot reasonably be completed in five years
 - Projects which, if terminated prematurely, would result in significant loss of capital
 - Projects extending beyond five years for reasons beyond operator's control
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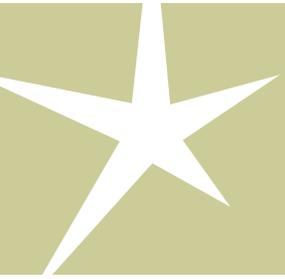
What Do Comment Letters Say?

- Development project must be completed within five years to qualify as PUD's
 - Large drilling programs in resource plays *are not* single development projects
 - Each well, or small groups of wells (perhaps pads) with associated facilities, are individual development projects, and each must be converted to PDP within five years to qualify as a PUD
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Summary

- No special reporting requirements for unconventional reserves in resource plays
 - Among requirements for all reserves, most important for unconventionals are
 - Reliable technology (opportunity to validate novel approaches)
 - SPEE Monographs 3, 4 relevant examples
 - 5-year rule (no exceptions for drilling programs)
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