

Assuring Investor Confidence Through Qualified Reserves Evaluators Applying Globally Accepted Principles Of Evaluations and Reporting*

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Abstract

Our petroleum industry has come a long way since SPE created “Proved Reserves Definitions for Property Evaluation” in 1965. Banks and insurance companies were at that time the primary sources of external capital for the US industry through various forms of lending and financial support and likely initiated this effort. Those definitions were modified over time and became the underlying basis for those issued by the US SEC in 1978. Virtually every business transaction in the upstream side requires a high level of confidence in the estimates of proved oil and gas reserves and/or resources and the resulting cash flow profiles along with the estimated range of uncertainty in non-proved reserves and resources. This presentation focuses on the absolute necessity for having (1) qualified reserves evaluators with recognized ethical integrity - both engineers and geoscientists, (2) global understanding and acceptance of the most current industry-recognized estimation and evaluation principles and terminology, and (3) continuing training opportunities for reserves and resources evaluators worldwide. Both users and preparers of these standards clearly recognize the need for virtually continuous updating as a result of evolving technology creating new opportunities in both conventional and unconventional reservoirs. Many producers are being urged to become more open to sharing their experiences with industry and seem to be recognizing the benefits in doing so. Such input from both large and small producers - public or private - is essential to expanding the training role being largely supported by academia and energy consultants. This presentation addresses all three of these topics and the ongoing efforts of dozens of dedicated member volunteers representing AAPG, SPE, SPEE, WPC, SEG, SPWLA, and EAGE to maintain the high standards embodied in these guiding documents.

**“ASSURING INVESTOR CONFIDENCE THROUGH
QUALIFIED RESERVES EVALUATORS APPLYING
GLOBALLY ACCEPTED PRINCIPLES OF
EVALUATIONS AND REPORTING”**

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FIRST, WHO ARE THE INVESTORS?

One or more of the following:

- **If private entity: individual investors, funds, banks, etc.**
- **If public entity: The general investing public “protected by” government regulators – SEC, AEC, LSE, etc.**
- **Many, maybe most of us in this room.....as individuals and maybe as tax payers**



WHO ESTABLISHES THE TECHNICAL STANDARDS ?

Professional Organizations

- SPE 1964 to date, plus...
- WPC 1996 to date, plus...
- AAPG 2001 to date, plus...
- SPEE 2007 to date, plus...
- SEG 2007 to date, plus...
- EAGE, SPWLA joined 2018

International Regulatory Agencies

- May adopt or modify definitions created within the industry.



WHO ARE THESE ORGANIZATIONS ESTABLISHING THE GLOBALLY ACCEPTED EVALUATION PRINCIPLES?

In most of the world, evaluators and users of reserves information rely upon evaluation principles adopted by the most respected professional organizations.

The most current jointly produced document is the PRMS-2018, the Petroleum Resources Management System released in mid-2018

<u>Organization</u>	<u>Approximate membership</u>	
SPE	164,000	154 countries
AAPG	40,000	129 countries
SPEE	600	US, Canada, Europe
WPC	65	Countries
EAGE	19,000	100+ countries
SPWLA	2,500	26 countries
SEG	20,000	128 countries

- Each organization imposes strict standards upon membership qualifications.



WHO ARE THE QUALIFIED EVALUATORS?

One or more of the following:

- **Petroleum Engineer, (P.E. preferred within US, Competent Person outside US)**
- **Petroleum Geologists (AAPG Certified preferred)**
- **Others holding science-related accredited university degrees and trained in petroleum evaluation best practices**
- **All of whom have at least 5 years of quality experience related to reservoir evaluation; at least 10 years experience for auditors.**
- **Optimum is team consisting of qualified practitioners working closely together, all of whom are familiar with governing reserves and resources definitions and reporting guidelines, AND immune to “managerial (or client) guidance”.**
- **More detailed descriptions contained in following slides**



HOW ARE THESE PRINCIPLES GLOBALLY APPLIED?

- Many, perhaps most, publicly and privately-owned petroleum producers rely upon these principals as the basis for their internal reporting to management – and make available to shareholders periodically.
- Most independent petroleum consulting firms and financial institutions understand, respect and rely on these principals.
- Large accounting firms and law practices often have internal expertise in the application of these principles.
- Most financial regulatory agencies understand and respect these principles and may incorporate much of the content into their reporting requirements – albeit modified to provide a level of uniformity in certain parameters. See next slide.....



PRMS 2018 ADOPTION STATUS (implied or expected based upon PRMS 2007 acceptance)

SECURITIES REGULATORS

- (SEC- with adjustments)
- Canada (CSA - in part)
- Hong Kong (HKEX)
- Australia (ASX)
- UK (LSE-AIM)
- Singapore
- Netherlands
- Brazil
- Italy
- France
- South Africa (ESMA)

GOVERNMENTAL REPORTING

- NPD – Norway
- BOEM – US Offshore
- ANP – Brazil
- CNH – Mexico
- ANH – Colombia + others
- UNFC – United Nations

OTHERS

Numerous major and independent oil and gas producers and the International Accounting Standards Board (IASB)



BACKGROUND OF THE “STANDARDS” FOR QUALIFIED EVALUATORS


- Since its adoption and release by SPE in 1979, the “Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information” defining the designation of Qualified Reserves Evaluators has only been updated twice (Primary author in 1979 – Bill Porter, securities lawyer)
- The document was updated in 2007 by SPE OGRC with support of PRMS sponsoring organizations.
- The most recent version (minimal changes) of this document will reflect input and/or approvals from the sponsoring organizations of PRMS 2018.
- There is no entity empowered to enforce these “standards” beyond companies who may require compliance through job descriptions of certain employees and/or certain regulatory authorities.
- The US SEC does not establish evaluator qualifications.

MAJOR TOPICS COVERED BY THESE “STANDARDS”


- **Article I—The Basis and Purpose of Developing Standards Pertaining to the Estimating and Auditing of Petroleum Reserves Information...**
- **Article II—Definitions of Selected Terms....**
- **Article III—Professional Qualifications of Reserves Estimators and Reserves Auditors .**
- **Article IV—Standards of Independence, Objectivity, and Confidentiality for Reserves Estimators and Reserves Auditors**
- **Article V—Standards for Estimating Reserves and Other Reserves Information**
- **Article VI—Standards for Auditing Reserves and Other Reserves Information**



CONSULTANT – CLIENT RELATIONSHIPS (not part of the Standards)

- Parties must clearly understand scope and purpose of the report(s) as defined in an Engagement Agreement .
 - Parties must agree on relevant definitions governing the report.
 - Parties may require provision of satisfactory references supporting each.
 - Agreed dates for project initiation, final data receipt, draft(s) and final report.
 - Parties must agree upon timely and complete access to necessary physical and economic data and with written assurances of quality and completeness.
 - Parties must agree on payment(s) for services rendered – Fixed Fee Contract, “Not-to-Exceed” contract or simply Time-and-Hourly charges; partial prepayment may be negotiated.
 - Provision of names and contact information of responsible individuals involved from both parties. Available on 24/7 basis as deadlines near.
 - If project involves an audit of estimates by others, acceptable tolerances in quantities and/or economic values must be agreed to in advance.
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FURTHER “OPINIONS” ABOUT REPORT PREPARATION

- **Complete work-notes should be created and retained to reflect project workflow and decisions made by competent evaluators.**
 - **A projection drawn on a production decline curve may not always suffice to document the adequacy and quality of the data and rationale of the evaluator. (May need written elaboration.)**
 - **That evaluator may not be available if and when litigation may occur somewhat later.**
 - **Records retention policies are to be established by each organization.**
 - **Draft reports are valuable to ensure completeness and correctness of all relevant and most current information including ownership and production status of all properties.**
 - **Important to have operator-provided development commitments (including funding) for all undeveloped reserves.**
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CONFIDENTIALITY

- Reserves Estimators and Reserves Auditors, and any firm of petroleum consultants in which such individuals are stockholders, proprietors and/or partners should retain in strictest confidence Reserves Information and other data and information furnished by, or pertaining to, an Entity, and such Reserves Information, data, and other information should not be disclosed to others without the written prior consent of such Entity.
- Employees of such Entities, both private and public companies, are likely subject to internal confidentiality agreements as well.
- This practice should be followed whether or not a confidentiality agreement has been executed

ARTICLE VI—STANDARDS FOR AUDITING RESERVES AND OTHER RESERVES INFORMATION

- **6.1 The Concept of Auditing Reserves and Other Reserves Information**
 - **6.2 Limitations on Responsibility of Reserves Auditors**
 - **6.3 Understanding Among an Entity, Its Independent Public Accountants, and the Reserves Auditors**
 - **6.4 Procedures for Auditing Reserves Information**
 - **6.5 Records and Documentation With Respect to Audit**
 - **6.6 Forms of Unqualified Audit Opinions**
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“AUDITS AND REVIEWS” - TERMS OFTEN MISUNDERSTOOD

- An Audit results in an opinion about (1) methodologies employed by evaluator, (2) adequacy and reliability of data, (3) thoroughness of the estimation process, (4) proper reserves categorization and (5) reasonableness of reserves information.
- “Reasonableness defined as +/- 10% for proved reserves; other categories as agreed and included in the Audit Report.”
- A “Process Review” is the result of an investigation by a person(s) qualified by experience and training equivalent to a Reserves Auditor to address the adequacy and effectiveness of an entity’s internal processes and controls relative to reserves estimation.
 - Often includes references to internal and/or external audit systems.
 - Does not address reserves quantities



Professional Ethics Qualifications

- Almost every decision by a reserves evaluator or auditor has an ethical component – even the selection of geological parameters, recovery efficiencies, decline rates, terminal declines, etc .
- Ongoing training in the relevant or pertinent reserves definitions
- Ethics training – all of which should be refreshed periodically through some form of internally or externally provided continuing education.
- Ethics training preferably by one or more persons familiar with reserves evaluation principles using *applicable examples* where possible. (This writer's preference, not required)

ADDITIONAL US GUIDANCE DERIVED FROM SARBANES-OXLEY ACT of 2002 (*Follows Enron failure*) “Public Company Accounting Reform and Investor Act”

- Requires corporate commitment to establish and maintain internal processes and controls to ensure reliable reporting to management, shareholders and US SEC.
- Primarily accounting matters but includes reserves reporting processes.
- Can, and has, resulted in criminal charges to evaluators.
- Evaluators and/or Auditors ideally report directly to company directors without influence of company management team.
- Applicable to all internal and/or external estimates and audits.
- High standards for independence, both internal/external evaluators
- Corporate management and internal evaluators to be excluded from any reserves- based compensation.

A SIMPLE CLOSING REMINDER

- A reserves report is simply a “snapshot in time” of an estimate of the quantity of the owner’s oil and gas reserves to be produced along with estimated future annual cash flows over the remaining life of the property as of the effective date shown in the report.
- The definitions relied upon should be clearly stated in the report.
- The report is based on information prior to and through the effective date and not one-day beyond.
- The report is based solely on data available to and relied upon by the evaluation team.
- The source – or sources – of the data should be disclosed along with a statement of adequacy and completeness. (Maybe identification of contributors?)
- The estimated values contained within the report are a direct function of the quality and quantity of data relied upon and the competence and character of the evaluator(s).
- Relevant information – positive or negative - acquired following the effective report date should be fully disclosed in the report to the user.



THANK YOU FOR LISTENING

**YOUR QUESTIONS AND/OR COMMENTS
ARE INVITED SHOULD TIME PERMIT**

