

Reserves Reporting Standards: “*Standards Pertaining to the Estimation and Auditing of Oil and Gas Reserves Information*” 1977, 2001 and 2007

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Abstract

More than 30 years ago, SPE recognized the need to establish “Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information” (the Standards). This document was released in 1977 and paralleled the issuance of the 1978 SEC reserves reporting requirements. The Standards provided recommendations toward (1) certain defined terms, (2) minimum qualifications for estimators and auditors, and (3) the absolute necessity for estimators and auditors to maintain a high level of independence, objectivity and observance of confidentiality.

Concurrent with the March 2007 release of PRMS, an updated and revised version of The Standards was approved by the SPE Board. This version retained all of the principles established in the 1977 version but was enlarged to embrace language and terminology appropriate to PRMS. Additionally, three areas of the Standards were expanded to:

1. More clearly explain the terms “auditors” and “auditing” as used by the petroleum industry and as contrasted with the financial professions,
2. Recognize more stringent requirements to be considered in describing the qualifications of reserves estimators and auditors, and
3. Acknowledge the increasing need to integrate the talents of engineers and geoscientists in the preparation of reliable reserves information.



American Association of Petroleum Geologists

An International Geological Organization



Reserves Reporting Standards

***“Standards Pertaining to the Estimation
and Auditing of Oil and Gas
Reserves Information”***

1977, 2001 and 2007

**Presented by Ron Harrell, Ryder Scott Co.
(retired)**

1977 SPE Committee formed to establish Estimating/Auditing practices

- Individual

- Ned Babson
- Arlen Edgar (Chair)
- Bob Gilmore
- Dwayne Godsey
- Bill Granberry
- James D. Henry
- Joe Richardson
- Bert Wheeler

- Company Affiliation

Babson & Shepherd
Independent
D&M
Godsey & Earlougher
AMOCO
ARCO
EXXON
CONOCO

2001 And 2007 Updates

- 2001 - Modest updating to incorporate probabilistic methodology terms within 1977 SPE/WPC Definitions.
- 2007 – Significant revision to (1) provide alignment with PRMS, (2) recognize the need for more stringent requirements of estimators and auditors, (3) include additional defined terms, and (4) acknowledge the importance of integrating geoscience and engineering in preparing reliable reserves information.

GUIDING PRINCIPLES

<u>Article</u>	<u>Topic</u>
I.	Basis and Purpose of Developing Standards
II.	Definitions of Terms
III.	Professional Qualifications
IV.	Objectivity, Independence & Confidentiality
V.	Estimation Standards
VI.	Auditing Standards

RESERVES INFORMATION

Reserves Information May Include, Among Other Things,:

- **Estimated reserves quantities**
- **Estimated rates of production**
- **Future net revenues**
- **Present value of such future net revenue**
- **All estimates being made in accordance with generally accepted engineering and evaluation practices**

DEFINED TERMS

- Entity
- Reserves Estimator
- Entity Reserves Report (80% +)
- Property Reserves Report
- Reserves Auditor
- Reserves Audit (Quantities, values, P₁, P₂, P₃ ?)
- Auditing Tolerances (P₁ ≤ 10%, P₂, P₃, ? %)
- Financial Audit
- Process Review

BASIC QUALIFICATIONS

1. Estimator: At least 3 years practical E&P experience including at least 1 year in reserves estimation, plus
 A BS degree in engineering, geology or physical science
 from a “recognized college”, or
 A license or certification from a recognized authority.
2. Auditor: At least 10 years practical E&P experience including at least 5 years of being in charge of reserves evaluation.
3. Selections to be made on case-by-case basis and in consideration of respect of their peers.

EXPERIENCE QUALIFICATIONS 1/2

1. Clear understanding of geologic maps and models
2. Judicious selection and reliance on analogs
3. Appropriate reliance upon seismic information
4. Fundamentals & limitations of reservoir simulation
5. Basic knowledge of deterministic & probabilistic methodologies

EXPERIENCE QUALIFICATIONS 2/2

6. Use of performance techniques to confirm/refine geological interpretations
7. Recognize consequences of reliance on software without understanding of internal calculations
8. Knowledge of various forms of entitlement and fiscal systems employed in region of responsibility
9. Ongoing training in relevant reserves and reporting requirements
10. Recognition of need for ongoing ethics training

OBJECTIVITY STANDARDS FOR INTERNAL AUDITORS

- Accountability to Management
Senior level Management, and/or
Board of Directors,
Separate and apart from operating and
decision-making process of entity
- Freedom to report irregularities
Complete and unrestricted access to Senior
Executive(s) and/or Board Member(s), and
Exclusion from reserves-based compensation

PREPARING FOR AN AUDIT

- Project Objectives
- Establishing audit tolerances
- Cooperation toward meeting tolerances
- Defined time lines – start, progress report, final report
- Generally unrestricted access to records
- Identification of and access to key personnel including technical staff and, in some cases, accounting and legal

CONCLUSION

- Please refer to official “Standards” document posted at:

www.spe.org

- Your questions and comments are now invited.