

Reserves Reporting A Comparison of the Three Main Standards

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- **International – Petroleum Resource Management System**
- **Canada – NI51-101 and COGEH**
- **USA – Securities Exchange Commission (SEC) Oil and Gas Rules**
- **Standards were developed at different times and for different purposes and so aren't always consistent.**

(Contingent and Prospective Resources are not included in this presentation)



- **PRMS - General application (project/portfolio management)**
 - A system that provides the basis for classification and categorization of all petroleum reserves and resources. Focused primarily on estimated recoverable sales quantities.
- **NI51-101 & COGEH - General application and securities reporting**
 - Created to establish standards for the evaluation oil and gas reserves and resources, and to ensure consistency in the application of evaluation procedures and in reserves reporting.
- **SEC - Securities reporting**
 - ...provide investors with a more meaningful and comprehensive understanding of oil and gas reserves, which should help investors evaluate the relative value of oil and gas companies.



Reserves Reporting History

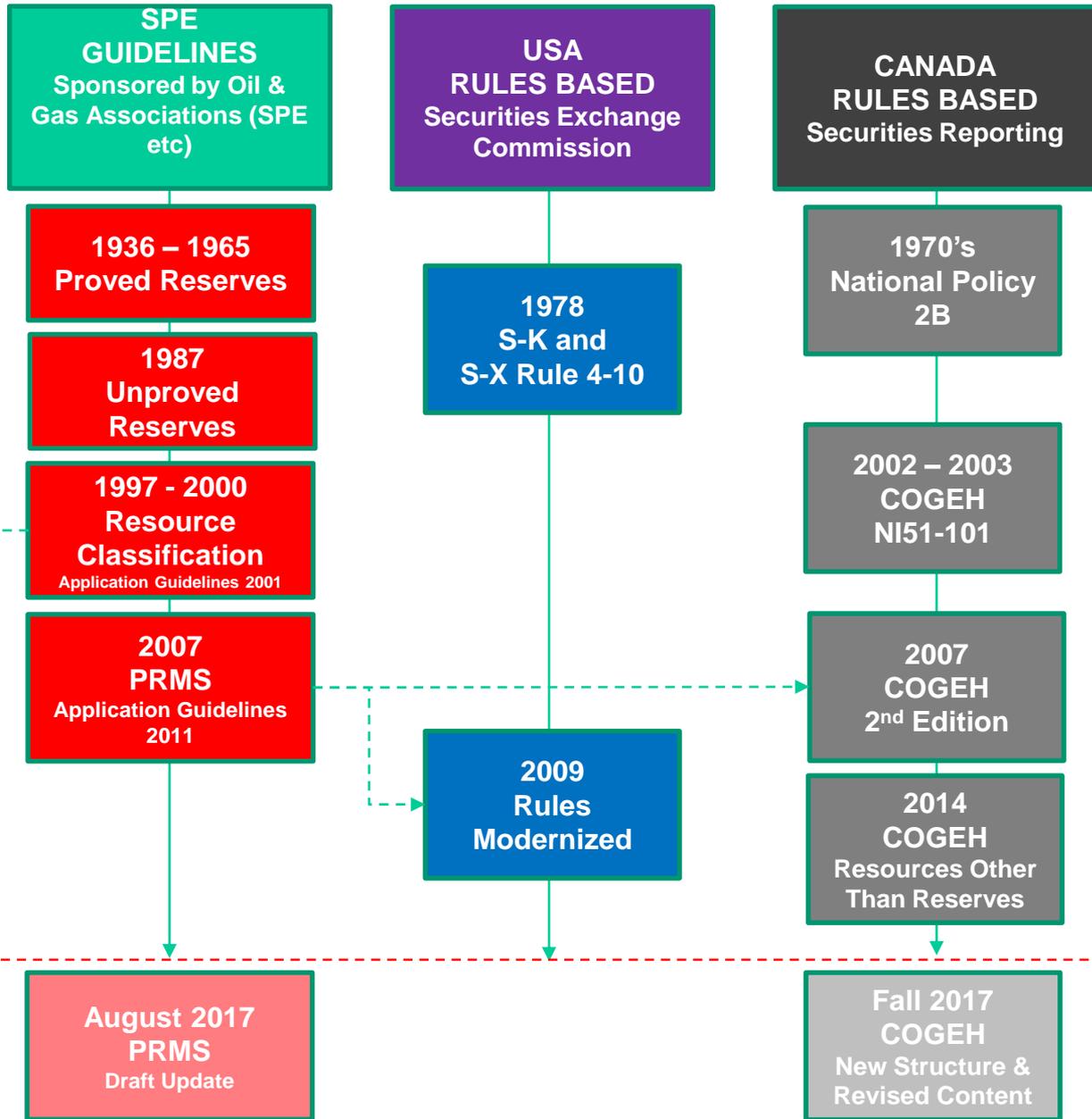


FIGURE 2.2 RESOURCE CLASSIFICATION SYSTEM

TOTAL PETROLEUM INITIALLY-IN-PLACE	DISCOVERED PETROLEUM INITIALLY-IN-PLACE	COMMERCIAL	PRODUCTION		
		SUB-COMMERCIAL	RESERVES		
DISCOVERED PETROLEUM INITIALLY-IN-PLACE	SUB-COMMERCIAL	COMMERCIAL	PROVED	PROVED plus PROBABLE	PROVED plus PROBABLE plus POSSIBLE
			CONTINGENT RESOURCES	LOW ESTIMATE	BEST ESTIMATE
UNDISCOVERED PETROLEUM INITIALLY-IN-PLACE	SUB-COMMERCIAL	COMMERCIAL	UNRECOVERABLE		
			PROSPECTIVE RESOURCES	LOW ESTIMATE	BEST ESTIMATE
UNDISCOVERED PETROLEUM INITIALLY-IN-PLACE	SUB-COMMERCIAL	COMMERCIAL	UNRECOVERABLE		
			PROSPECTIVE RESOURCES	LOW ESTIMATE	BEST ESTIMATE

← RANGE OF UNCERTAINTY →

- Prepared by the Oil and Gas Reserves Committee (OGRC) of the SPE.
- Reviewed & Jointly Sponsored by WPC, AAPG, **SPEE** and SEG.
- Issued in 2007 with application guidelines issued in 2011.
- Draft update recently issued for comment.
- Provides a common reference for the international petroleum industry and allows flexibility for users and agencies to tailor application to their particular needs.
- An acceptable regulatory reporting standard in Australia, Europe (including the UK), Hong Kong and Singapore.



- National Instrument 51-101 covers standards of disclosure for oil and gas activities (last update July 2015).
- Canadian Securities Administrators (CSA) represents the various province and territory security regulators.
- Alberta Securities Commission (“ASC”) governs Alberta’s securities market and advises other provinces through the CSA on oil and gas issues.
- NI51-101 Requires Annual Filings by a Qualified Reserves Evaluator or Auditor.
- Canadian Oil and Gas Evaluation Handbook (“COGEH”) sets out in 3 volumes the standards for evaluating oil and gas reserves and resources and have been adopted within NI51-101.
- COGEH was prepared and is maintained by the SPEE Calgary Chapter.
- An update is due later this year.
- CSA Staff Notices and ASC Annual Reports provide additional guidance and information. Comment letters are not made public.

- SEC revised the regulations covering oil and gas disclosures at the end of 2009 in a 160 page document titled “Modernization of Oil and Gas Reporting”.
- Oil and Gas Reserves Definitions are covered by Regulation S-X, Rule 210.4-10 (12 pages).
- Regulation S-K Section 154 Items 1201 – 1208 cover oil and gas disclosure requirements (17 pages).
- Compliance and Disclosure Interpretations (“C&DIs”) supplement the oil and gas rules (last update May 16, 2013).
- Annual 10-K Filings by Oil & Gas Corporations must comply with these regulations. The SEC provides publically available Comment Letters on individual company compliance.



So How Do The Standards Compare?

- **COGEH* & PRMS**

- Evaluations are estimated using forecasted prices and inflated costs determined by the evaluator.
- Under COGEH there is an option to also disclose an additional case using constant prices and costs.

- **SEC**

- Prices and costs exclude escalations based upon future conditions (unless prices are contractually defined).
- The price is based on the first day of the month average during the 12-months prior to the end date of the report.
- Calculated using the arithmetic average of the commodity price from the first day of each month within that 12 month period.

* *COGEH refers to NI51-101 and COGEH*



- **COGEH**

- There must be a demonstrated intent to proceed with development with different criteria applied to the 1P, 2P and 3P cases.

- **PRMS**

- To be included as reserves, a project must be sufficiently defined to establish its commercial viability.
- There must be a reasonable expectation that all required internal and external approvals will be forthcoming (**justified for development**).

- **SEC**

- Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted.
- Proof of a **final investment decision (FID)** approval is required to satisfy the adoption of a development plan and this applies to all reserves categories.



- What does this mean?
- Illustrated with respect to the PRMS maturity sub-classes

	SPE-PRMS	COGEH	SEC
Reserves	On Production	On Production	Developed Reserves
	Approved for Development	Approved for Development (1P)	Undeveloped Reserves
	Justified for Development	Justified for Development (2P & 3P)	Resources <i>Cannot be Disclosed as part of SEC Filing</i>
Contingent Resources	Development Pending	Development Pending	
	Development Unclassified or On Hold	Development Unclassified	
		Development On Hold	
	Development Not Viable	Development Not Viable	
Unrecoverable			
Prospective Resources	Prospect	Prospect	
	Lead	Lead	
	Play	Play	

FID



- **COGEH**

- For projects requiring minor capital expenditures, two years is a recommended guideline (i.e. developed non-producing)
- For larger capital expenditures, three years is a recommended guideline for assigning proved reserves and five years for assigning probable reserves.

- **PRMS**

- Five years is the recommended timeframe.

- **SEC**

- Proved undrilled locations must be scheduled to be drilled within five years and de-booked if not drilled.
- Unclear if 5 year rule applies to probable and possible?



All standards do allow exceptions under certain circumstances including among other things market-related reasons, or to meet contractual or strategic objectives (under COGEH and SEC rules, these circumstances must be clearly documented).

- **COGEH**

- Unlike PRMS and SEC does not take into account the company's ability to obtain finance for each project
- The reasoning being that a property will have value in the market place regardless of the company's current cash position (fair market value).

- **PRMS**

- While guidelines do not require that project financing be confirmed prior to classifying projects as Reserves, this may be another external requirement.

- **SEC**

- Under definition of reserves..... there must exist, or there must be a reasonable expectation that there will exist..... all permits and financing required to implement the project. FID required.

COGEH is fundamentally different in this respect.



- **COGEH**

- Different conditions are applied to the classification of proved, probable and possible reserves.
- It is not uncommon for 2P and 3P reserves to exist without 1P reserves.

- **PRMS**

- Commerciality and uncertainty should not be mixed between reserve cases.
- If 2P reserves are included, 1P and 3P should also be booked (provided the 1P is economic).

- **SEC**

- Different certainty criteria apply to proved, probable and reserves.
- SEC Q117.02 of C&DIs states “disclosure of unproved reserves without associated proved reserves should be done only in exceptional cases...”.



Biggest difference between COGEH and PRMS - I'm told the COGEH Update is likely to remove this issue.....

- **COGEH & PRMS**

- Apply a commerciality test before assigning reserves.
- NPV positive at corporate discount rate.

- **SEC**

- Reserves are based on “economic producibility” rather than “commerciality”.
- NPV positive at zero discount rate.
- “commerciality introduces a subjective aspect to the price used to establish existing economic conditions by factoring in the rate of return required by a particular company before it will commit resources to the project. This rate of return will vary among companies, reducing the comparability among disclosures.”



- **COGEH**

- All disclosed reserves must be marketable sales products.
- If fuel gas is removed before the sales point the fuel gas volumes are not reserves.

- **PRMS**

- Recommends fuel gas is treated as shrinkage and not included in reserve volumes. However the option exists to book the volumes where it replaces alternative uses of fuel and the regulatory authority allows.
- Where claimed as reserves volumes should be reported separately from sales volumes and their value must be included as an operating expense with the cash flow.

- **SEC**

- Reg. S-K Instruction 2 to Item 1204 states gas consumed in operations should be omitted from production data.
- Reg. S-X Rule 4-10 does not make it clear whether gas consumed in operations can be included as reserves.
- Company 10-K filings continue to include gas consumed in operations as reserves.

See SPE-170612-MS - Lease Fuel, Fuel Gas or Fuel Consumed in Operations- Is it Reserves? Morales, Lee

- **SEC does not split developed proved reserves into Producing (PDP) and Non-Producing (PDNP)**

- **Handling of Non-Hydrocarbons**
 - COGEH allows the booking of reserves of natural gas by products such as sulphur and the inclusion of the associated revenue.
 - PRMS does not allow reserves for non-hydrocarbons (sulphur, helium etc.) but the revenue can be included.
 - SEC does not allow non-hydrocarbon reserves or values to be included.

- **Lowest Known Hydrocarbons**
 - All systems have similar rules/guidance on the criteria for proved reserves limited by LKH.
 - In the past the SEC stated the LKH must be equivalent to the lowest tested hydrocarbons discounting the use of RFT/MDT pressures for example (an exception was made for the Gulf of Mexico).
 - Since 2009 the SEC allows you to use other information provided it can be considered “reliable technology” without saying what these are.

- **COGEH**

- Provides much more documentation and in that sense is clearer, however as the volumes have been added to over time there are some inconsistencies (update to address).
- Due to the split conditions unproved reserves can be easier to book than under PRMS and SEC.

- **PRMS**

- Is principles rather than rules based and as such is sometimes less clear.
- Is not written to provide public disclosure rules or as a text book on detailed evaluation technologies.

- **SEC**

- The 2009 update was largely based on the PRMS principles but then refined for regulatory reporting purposes.
- The rules are generally clear on when proved reserves can be assigned (accept perhaps with respect to reliable technology).
- However there is much less detail on the assignment of unproved reserves.

- **Will the Various Standards Merge?**

My personal thoughts.....

- It would make sense if the standards were based on PRMS with additional/different specific regulatory requirements.
- To some degree this is how the SEC rules are formulated.
- COGEH is converging towards PRMS however it looks unlikely they will ever be totally consistent.

.....and what about the PRMS Update.....

- A draft update was issued for public comment on 1 August 2017.
 - On behalf of the SPE Board and the OGRC, SPE encourages you to review the proposed system posted below, and submit comments representing your **organization’s consolidated** opinion by 14 November 2017.
- Main focus of update is on clarifying some points and ensuring consistency of terms.
- Update states that the terms “shall” or “must” indicate a mandatory provision for PRMS compliance whereas “should” indicates recommended practice.
- Clarification on how the commerciality test is applied i.e. to the P50 Best Estimate.
- “Development on Hold” and “Development Unclarified” now in separate maturity sub-classes.
- Prospective Resources range designated 1U, 2U and 3U.
- “Lease Fuel” now called “Consumed in Operations” can still be booked.
- Mineable Oil Sands can now be included.