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Nancy M. Morris, Secretary  
Securities and Exchange Commission  
100 F Street, NE  
Washington, DC 20549-0609

File No. S7-29-07

Concept Release on Possible Revisions to the Disclosure Requirements Relating to Oil and Gas Reserves

Dear Ms. Morris;

I am writing on behalf of myself as a private citizen, and the opinions expressed herein are solely my own and do not represent those of my current employer, of any of my past employers.

For 27 years I have been a reservoir engineer in the employ of several companies who have been subject to reporting under Section 2.10, Rule 4-10 of Regulation S-X and all its associated material. I have also managed reserves in Canadian companies reporting reserves to National Policy 2-B standards and was involved in the early work to develop 2-B's replacement, National Instrument NI 51-101. For 10 of my 27 years I have been the individual responsible for submitting reserves in 4 different companies, and in all of those companies authored or co-authored the corporate reserves manual. I have been through two SEC audits of disclosed information and responded to several Letters of Inquiry. I have personally trained over 1,200 individuals within four companies on the application and interpretation of the Rule 4-10. I have worked on reservoirs and assessed reserves in the majority of the hydrocarbon basins throughout the world, with extensive experience in Canada, the U.S. Lower 48, Latin America, the North Sea, and offshore Africa. I feel this makes me uniquely qualified to offer comment on the Concept Release.

First, I would like to commend the SEC and its small oil and gas staff for developing, maintaining and interpreting a rule set that has stood the test of time with only one update since its inception in 1934. That it has taken some 70 years to identify need for change is testament to the quality of work done in those years. I would particularly like to recognize the contributions of Mr. Winfrey and Mr. Murphy, and especially so for the helpful "SEC Division of Corporation Finance: Frequently requested accounting and financial reporting interpretations and guidance, March 31, 2001", a document that provided significant clarity to Rule 4-10.

That the aforementioned document has been so influential in improving reserves understanding should be a significant message to the SEC. In fact, I will go so far as to suggest that the aforementioned interpretation and guidance document demonstrated the current rule set is quite robust – that indeed its major problem is more a lack of common understanding, rather than suffering fatal flaws in content. This lack of a common interpretation results from the difficulty in obtaining training on what the rules say and how they will be read in an audit, more than from problems with the rules themselves.

That having been said, the various rules, as you have noted in your concept release, do have some minor technical issues. The most significant are:

- Strong discouragement of the use of 3-D seismic, a technology that has indeed changed dramatically over time;

- The use of year end pricing, a system that worked until commodity markets became seasonal, very liquid and volatile;
- Relatively recent inclusion of coal bed methane to reserves, with limited clarity on technical methodologies for assessments;
- Reliance on logs for lowest know hydrocarbon determination, when proven pressure analysis methodologies are available;
- Continuing to exclude non-hydrocarbon revenue, when such revenues can factor significantly into corporate decision making;
- Relaxation of a “fluids to surface test” for only deep water Gulf of Mexico, as if that oil and gas province is somehow different than others such as deep water Brazil, North Sea or even remote locations in Canada and the on-shore United States; and
- A confusing and misleading segregation between integrated mineable bitumen projects that produce a synthetic crude that isn’t reserves, versus in-situ projects that create a raw bitumen product that isn’t usable without upgrading but is reserves.

There are also opportunities for improvement of the current rule set not related to conflicts or technological problems, such as:

- The potential for expansion of probabilistic applications;
- The potential for disclosure of some categories of non-Proved resources.

Accordingly, I am not of the view that a step change in approach or regulation is needed. I believe the current framework is robust, but in need of some update and in desperate need of clarification through active training and education. I shouldn’t find that the rule set is interpreted differently between different issuers, and between different professionals within issuers, yet that is exactly my experience. In each of the companies I have worked for, we have had to develop extensive in-house training tied directly to the various SEC documents that have been released, and bring reservoir engineers, geoscientists, management and even accounting staff to a common understanding of the rules. My practice in teaching this material tells me that number of years of experience, professional affiliation or university degree are no indicator of understanding.

Consistent, industry wide training on the interpretation of Rule 4-10 is not, nor has it ever been, widely available, and nor is it likely to be for liability reasons unless the SEC themselves does it. Liability prevents independent petroleum consulting firms from offering such education, though some goes on “under the table”, and general results of SEC Letters of Inquiry are made as public as possible and shared through private discussions and industry association. I believe that the onus lies on the SEC to instruct issuers and market participants on their interpretations and expectations. Such a matter was not contemplated in your Concept Release “General Request for Comment”, and I believe it sorely lacking. Unless the SEC takes it on to insure that issuers and others know the expectations, any “improved” rule set will suffer the same problems. The Shell experience demonstrated the impact that a lack of common understanding and application can have. The recent commencement of posting SEC questions and resulting issuer responses is not an efficient way to communicate salient points of interpretation; the volume of information is high, issuer specific and not readily accessible.

Finally, before I specifically address the Commission’s questions regarding their rule set, there is the matter of the number of reserves rule sets available. It seems as if everyone who ever touches reserves has the desire to write their own rules. Some of the rules I am aware of include those written by the SEC, the Society of Petroleum Engineer (that has been merged with older rules authored by the World Petroleum Congress, and more recently, the American Association of Petroleum Geologists and the Society of Petroleum Evaluation Engineers), the World Bank, the United Nations, the United States Internal Revenue Service, and virtually every state, local and national government that has hydrocarbon potential. While there are lots of similarities between all of these, there isn’t consistency – the common usage of the categories of Proved, Probable and Possible despite universally different definitions being the most egregious.

Rule makers write rules that suit their goals. The SPE’s definitions are based on a technical framework, the SPEE’s are primarily economic, many state and local governments are for promotional or royalty/revenue maximization purposes, the IRS’s maximize tax, the SEC’s are about consistency and creating a level playing

field for investors – and the list goes on. Reserves and resources are inherently uncertain, and so there are lots of choices that need to be made.

As a personal investor, I expect the SEC to stick with rules that insure consistency and comparability, and are representative of the opportunity my investment may have. As such, reserves rules need to be technically based, but in such a way as to be understandable by an investor without an engineering degree. They need to be applicable across all jurisdictions, so Canadian, United Kingdom and other internationally based SEC reporters can use them, and U.S. based issuers can handle foreign-based assets in their reporting. They need to be flexible, because foreign jurisdictions are forever coming up with new and more complicated ways to extract their fair share. They need to be easily updated, when new technologies arise that create new sources of hydrocarbons.

With that as a preamble, as requested, here are my specific comments on the questions you have raised.

1. *Should we replace our rules-based current oil and gas reserves disclosure requirements, which identify in specific terms which disclosures are required and which are prohibited, with a principles-based rule? If yes, what primary disclosure principles should the Commission consider?*

Rules can only be written in the context of principles, so I do not see a clear distinction between these two options. However, if the perception is that the current rules based structure has resulted in a perceived lack of consistency and clarity, a principle based one will not likely improve the situation. As noted above, the current rules bases structure has successfully managed the majority of problems for 70 years with only one update.

Note that rules based structures don't have to be complicated. All the SEC's rules and interpretation documents combined total 18 pages. The SEC should be recognized for the elegant simplicity of their rule set. By contrast, the Canadian rule set, National Instrument NI 51-101, has 50+ pages of rules, and a 450+ page "instruction manual" (the "Canadian Oil & Gas Evaluation Handbook") that must be followed. Such a tome is neither practical nor useful.

- 1.1. *If the Commission were to adopt a principles-based reserves disclosure framework, how could it affect disclosure quality, consistency and comparability?*

A switch to any principles bases system would create several years of uncertainty no matter how clear the principles. Investors, issuers and other market participants would be faced with a steep learning curve. Canada saw this with the change from National Policy 2B to National Instrument 51-101, and that was merely a switch from one rule based structure to another.

2. *Should the Commission consider allowing companies to disclose reserves other than proved reserves in filings with the SEC?*

Yes, additional disclosure should be strongly encouraged; however, they should not be mandated. Issuers normally base decisions on more than just Proved reserves. The restrictive nature of that small subcategory of reserves and resources called "Proved" means that will always continue. Investors are therefore not served well by the current disclosure system which requires qualifiers on other categories of reserves that strongly implies they are meaningless and lack credibility. Investors need to know why issuers spend money for, and on what, so performance can be compared, and transparency can be achieved.

However, issuers should not be *mandated* to supply additional disclosures beyond Proved. Disclosure of Proved has served investors for 70 years, and continues to do so.

- 2.1. *If we were to allow companies to include reserves other than proved reserves, what reserves disclosure should we consider?*

It must be realized that additional disclosures beyond Proved are fraught with definitional issues. If the SEC is questioning the consistency of what constitutes Proved reserves, there should be a realization that

there is far less consistency in the realm of unproved resources. Even the most obvious of frameworks – the PRMS of the SPE/WPC/SPEE/AAPG – features unclear and conflicting definitions for category of Probable, and the farther one is removed from Proved, the less the clarity.

In short, if additional disclosures are allowed, there must be a definitional framework for them. Allowing issuers to make up their own categories for reporting non-Proved resources does not lead to a level playing field for investors.

2.2. *Should we specify categories of reserves? If so, how should we define those categories?*

Any non-Proved resource category must be as tightly defined as Proved in order to be useful to investors and executable by issuers. While the SPE PRMS framework could be a starting point (see answer to Question 3 below), so could any of a number of other definitional sets. However, I am not aware of an “off the shelf” set written with the interests of investors in mind; one would have to be written.

Given the vagaries of the various categories of reserves and resources, I believe too many will cause confusion for investors. I would recommend offering issuers the option to carry just two additional categories of resources:

- Probable, to represent the uncertainty associated with Proved reserves, and
- A category representing technically proven but currently non-commercial opportunities. I am aware from public disclosures that many companies attempt to describe discovered resources not meeting the Proved definition because of lack of corporate commitment or lacking commercial terms. The SPE PRMS contains categories like this, as does Canada’s NI-51-101.

Each of the above two additional categories of resources represents projects that issuers are working on eventually becoming Proved. Investors are assisted by knowing this because these projects represent the future value of the company, and frequently take years of time and millions of dollars of investments to bring to fruition.

The Probable category is helpful because investors are clearly told that Proved reserves are “much more likely to go up than down.” Investors therefore can’t see what companies are actually basing investment and capital decisions on for actual producing projects. Such a category could be allowed to be assessed probabilistically, enabling a description of the full range of uncertainty in these non-Proved resource categories. It is worth noting that in acquisitions and merger activity, discounted value is placed by issuers on Probable reserves due to the defined conservative nature of the Proved categories. Investors cannot see how this valuation is achieved without disclosure beyond Proved.

Two excellent current examples of the technically proven but non-commercial category are the resources in the Mackenzie Delta region in Canada, which require 16 B\$ of investments including a pipeline to advance, or the similar and more expensive Alaskan North Slope gas resources supporting that pipeline project. The resource owners and pipeline proponents for each of those projects have spent hundreds of millions of dollars advancing these projects, but under the current system, investors can’t see a common framework as to why this is being done from a hydrocarbon resource perspective.

Note that I very specifically distinguish in my recommended language the word “Reserves” (used for Proved) and “Resources” (used for categories not meeting the Proved criterion). Carrying this distinction may help investors understand the nature of new categories and allow an historical tie to the traditional category of Proved.

3. *Should the Commission adopt all or part of the Society of Petroleum Engineers – Petroleum Resources Management System? If so, what portions should we consider adopting?*

As noted above, the PRMS is one of many resource classification systems, and like all other systems, it was written with a goal in mind – and that goal was not to create a level playing field for investors.

Accordingly, I do not support the adoption of the SPE system, as it does not meet a principle goal of an investor- based disclosure system for several reasons.

Firstly, the PRMS is an integrated system covering more potential resources that could ever find utility to investors of companies, including categories such as Probable, Possible, Planning, Additional Contingent, Commercial & Sub-commercial, Ultimately Recoverable, Discovered & Undiscovered, Prospective, Unrecoverable – and the list goes on. The full PRMS framework has utility to bodies like the USGS in assessing basin potential in unexplored areas, but no issuer needs to report to that kind of level, and no investor needs to see those reports. It seems to make little sense to adopt an entire integrated framework just to select one or two small parts of it.

Second, the SPE system supports assessments of Proved reserves both probabilistically and deterministically, and heavily weights towards a probabilistic definition for non-Proved resources such as Probable and Possible. To adopt the SPE definitions for, say, just the Probable and Possible definitions means that they would not connect in any way with a rule-based, deterministic Proved system, and as noted below, I do not support switching to a probabilistically based system for Proved reserves.

Third, the SPE's framework is technically the most advanced, and is virtually evergreen in its pace of change and update, but the SEC does not require the most technically advanced system, nor should it be updated that often. Frequent updates to definitions will lead to inconsistencies in reporting between issuers. The SEC primary mandate is one of consistency. If a rule set that has not changed since 1978 features a perceived lack of consistent application, one that is updated nearly annually will not improve the problem.

The above being said, I note with interest that the actual SPE PRMS definition for Proved reserves differs little from the current Rule 4-10 definition. The main difference in the definition is the inclusion of all geoscience data (see Question 4 below). Greater differences exist when looking at the SPE interpretation guidelines, including the use of probabilistic assessments. This implies that only minor modifications of the current or PRMS definitions are needed to achieve a more robust definition.

*3.1. Are there other classification frameworks the Commission should consider?*

Any of the systems noted in my preamble could be modified to the needs of the SEC. Despite the comments above, the PRMS is likely the best place to start, given the degree of technical assessment that has gone into it.

*3.2. If the Commission were to adopt a different classification framework, how should the Commission respond if that framework is later changed?*

The Commission needs to be on a cycle of updates no more frequent than once every 10 years, and no slower than once every 15 years. Despite 27 years in the industry, I have never seen a technology change with a timeframe faster than 10 years. Leading edge science will always exist. Investors who want leading edge companies can and do live fine with disclosures within a slow moving framework no matter the industry; the pharmaceutical industry is an example. Keeping reserves assessors on a common ground without including technology change has been difficult enough.

*4. Should we consider revising the current definition of proved reserves, proved developed reserves and proved undeveloped reserves? If so, how?*

There's nothing inherently wrong with the existing definitions and categories. The expectations for meeting the definitions must, however, be better communicated by the SEC.

There are some specific adjustments that should be made, however. The current definition excludes geophysical information by omission (and possibly commission), and this is an area of technology that has indeed changed and become a key element for issuer decision making. The wording of SEC Regulation S-X, Section 210.4-10, Paragraph 2 should be changed from the current and limiting

“geological” to include the word “geophysical” or the more broad “geoscience” as suggested in the PRMS. Other language in the “SEC Division of Corporation Finance: Frequently requested accounting and financial reporting interpretations and guidance, March 31, 2001” regarding exclusion or restriction on the use of geophysical data would then require revision.

See questions 6, 9 and 10 for discussion on other matters in the Proved definition.

*4.1. Is there a way to revise the definition or the elements of the definition, to accommodate future technological innovations?*

As noted elsewhere, the SEC should be on a 10-15 year cycle of rule adjustments, and accordingly, developing a framework to manage technological innovations is likely unnecessary. As illustration, two recent examples of incorporating technical innovation are coal bed methane and bitumen/heavy oil reserves.

In the case of coal bed methane, a simple adjustment to the interpretation of the existing rule set was all that it took to move them to reserves from “not reserves.” This is the level of robustness that any new language needs. Additional clarification would have been useful if advice on technical methodologies for assessments would have been included, but otherwise this shows that little accommodation is actually needed in a robust system.

By contrast, look at the exclusion and misleading segregation between integrated mineable bitumen projects that produce a synthetic crude that isn’t reserves, versus in-situ projects that create a raw bitumen product that isn’t usable without upgrading but is reserves. In this case, the actual definition of “oil and gas activities” needs revisiting in order to affect a change.

*5. Should we specify the tests companies must undertake to estimate reserves? If so, what tests should we require?*

Some of the testing is already specified, and there is nothing wrong in principle with specifying testing requirements. I refer to current language such as “wireline recovery of small volumes (e.g. 100 cc) or production of a few hundred barrels per day in remote locations is not necessarily conclusive” for attribution of Proved reserves.

What should not happen is a specific rule for a particular area, as was done by the SEC for the relaxation of the “fluids to surface test” for only deep water Gulf of Mexico, as if that oil and gas province is somehow different than others. Doing so does not create a level playing field for investors. If a test or group of tests has technical validity, its use should be universal.

Similarly, the assessment of lowest know hydrocarbon from logs only ignores an obvious technically robust methodology for interpolation of a hydrocarbon-water contact from pressure data collected from wells penetrating the zone.

As noted above, there are technical authorities inside learned societies such as the SPE, the SPEE or the AAPG who could offer addition insight as to reasonable tests to require.

*5.1. Should we specify the data companies must produce to support reserves conclusions? If so, what data should we require?*

The data currently specified is generally sufficient to provide adequate backup to Proved reserves determination where conventional reserves are based on volumetrics (area, thickness, porosity, water saturation, hydrocarbon formation volume factor and recovery factor) or performance analysis. There is more reference in the supporting interpretation guidance documents for performance analysis regarding decline analysis than there is for material balance methodologies, but this likely needs little augmentation.

As noted, the need likely exists for additional clarification on determination methodologies for coal bed methane. For instance, wells may not produce hydrocarbon to surface initially, thus failing a critical current test for Proved; their “unconventional” nature leads to the need for more specificity in the rules.

5.2. *Should we specify the process a company must follow to assess that data in estimating its reserves?*

No, no more than is done currently. There is adequate information in the current rule set to do so generally as to volumetric determination of conventional reserves. Reserves assessment is by its nature very technical, and as such, a move to specifying processes will result in a 450+ page rule book as happened in Canada. The Canadian learning is that a bigger rulebook doesn’t necessarily lead to a better answer.

If additional information is needed, it is only in the areas where governments have created complex formulas and relationships regarding resource ownership, such as Production Sharing Contracts and the like. They are typically unique and one-off problems, but they are indeed difficult to fit into the current rule set.

6. *Should we reconsider the concept of reasonable certainty?*

Reasonable certainty is an adequate term, and since 2001, I have seen it move from a gray and blurry concept to one of acceptable clarity courtesy of various interpretation memorandums produced by the SEC. Clarity was further improved with the attendance of the SEC to the SPEE meetings from 1999 through 2003. In addition, note that the PRMS of the SPE uses the exact same phrasing. There isn’t anything inherently wrong with the concept of reasonable certainty, but the communication of it by the SEC has been weak and too infrequent.

6.1. *If we were to replace it, what should we replace it with? How could that affect disclosure quality?*

If “reasonable certainty” were to be replaced, the only logical option would be to switch to a fully probabilistic system. Again I note that if 70 years of the current system hasn’t resulted in consistency, a probabilistic one will not improve the situation. Adoption of a fully probabilistic system would cause years of disclosure inconsistency.

My personal observation is that probabilistic assessments are done consistently inside many issuers, but they are not done consistently between issuers, suggesting that a probabilistic based system would not achieve a level playing field for investors in the near or moderate term.

6.2. *Should we consider requiring companies to make certain assumptions?*

The current system embodies adequacy of description when assumptions are necessary. Small areas lacking are:

- The treatment of abandonment costs in anything other than the Standardized Measure determinations;
- Evidence of corporate commitment, though I can’t practically imagine a rule that would be adequate for all companies of all sizes;
- Clarity as to the current Rule 4-10, Paragraph 17 definition of “Production Costs”, in areas such as application of overhead charges, inclusion of depreciation and third party processing revenues. SEC representatives attending the SPEE forums between 1999 and 2003 assisted greatly in issuer understanding of these topics, but this understanding remains undocumented;
- Treatment of various complex forms of resource ownerships. This is an inherent challenge; for instance, in some countries such as Ecuador or Venezuela, it may be “reasonably certain” to assume a contract extension under one government, but that could change with an election. Issuers and investors would both be well served by assistance in interpretation on the application of reasonable certainty in these circumstances.

7. *Should we reconsider the concept of certainty with regard to proved undeveloped reserves?*

The limitation of Proved Undeveloped reserves to immediately adjacent undrilled units is a fair and reasonable methodology. There is no reason that Proved Undeveloped reserves should have any less or more certainty than any other category of Proved reserves. It is also reasonable to continue to limit Proved Developed reserves for those other than offsetting units to a higher level of certainty; technical certainty decays with distance due to lack of information.

The only real issue is that the concept of “offsetting productive units” can get blurry in some jurisdictions where no drilling spacing units have been defined. In this sense, guidance from the SEC would be welcome.

7.1. *Should we allow companies to indefinitely classify undeveloped reserves as proved?*

No. The current tests for corporate commitment are valid. However, clarity in the context of a specific year limitation would assist issuers, and a limitation that proved undeveloped must have commercial development initiated with a 2 or 3 year window would be reasonable. There are those who might argue that fixed timelines are arbitrary and not indicative of management approach. I would disagree; I have never worked in a company where capital was not a limiting resource, and perfectly fine projects can languish for years. Promising investors to produce these reserves and then constantly deferring them is misleading. In that context, I appreciated the current SEC guidance that “an inordinately long delay in the schedule of development may introduce doubt sufficient to preclude the attribution of proved reserves”.

8. *Should we reconsider the concept of economic producibility? If we were to replace it, what should we replace it with? How could that affect disclosure quality?*

The concept of economic producibility is a fair test of eventual commerciality, and should be retained.

However, the current test of economic producibility – that of having hydrocarbons to surface from the reservoir – is too restrictive. As noted above, this test has been relaxed in the deep water Gulf of Mexico, and reservoirs do not understand political boundaries. There are numerous ways to achieve reasonable certainty that hydrocarbons will come to the surface in commercial quantities without actually causing them to do so. The SEC differentiates between “certainty” and “reasonable certainty” in their guidance, and bringing hydrocarbons to surface is the former, not the latter.

9. *Should we reconsider the concept of existing operating conditions? If we were to replace it, what should we replace it with? How could that affect disclosure quality?*

The concept of applying current operating conditions constantly into the future is fair as it is currently written because it allows for these conditions to change where it is reasonably certain they will do so. Accordingly, it effectively (and correctly) prohibits application of new and emerging technologies as not reasonably certain. As noted in the answer to Question 3, leading edge science will always exist. Investors who want leading edge companies can and do live fine with disclosures within a slow moving framework no matter the industry.

10. *Should we reconsider requiring companies to use a sale price in estimating reserves? If so, how should we establish the price framework?*

Reserves are meaningless without a price and an effective date. Retaining a pricing test is essential.

Whatever price is used, the current assumption that it be held constant for all time should be retained. Endless years of “hockey stick” shaped price forecasts have taught us that predicting future oil prices even several months out can have a huge margin of error.



10.1. *Should we require or allow companies to use an average price instead of a fixed price or a futures price instead of a spot price?*

As is noted in other submissions, a December 31 price is a poor representation of the prices used by issuers to make investment decisions that investors need to know about. As those submissions are resplendent with data illustrating the problem, I will not expand on that here. In short, I support switching to an average annual price for all hydrocarbon products.

That price should run from October 1 to September 30 (for calendar year reporting issuers), to manage pricing seasonality and allow issuers sufficient time to fully assess reserves at their year end. The current system requires a massive amount of work to be done in a window between January 1 and January 30 in order to make SEC reporting deadlines and is therefore impractical in larger issuers, and can even become challenging in smaller issuers. Quality of reserves evaluations would increase with a final price being available at the end of the previous quarterly reporting period.

The December 31<sup>st</sup> problem is not a minor issue. At year end 2004, Canada was in the unique position of steadily producing some 250,000 bbls/d without any reserves to back it. The reason was that a one time and rather unique aberration of high pricing differentials, coupled with high fuel gas pricing, drove many heavy oil reserves into the realm of negative cash flows. Production was never shut in, but billions of barrels of reserves were written off, only to get re-booked within months. I'm not certain how investors were assisted by literally millions of barrels being produced with no reserves to back them.

10.2. *Should we allow companies to determine the price framework? How would allowing companies to use different prices affect disclosure quality and consistency?*

In order to maintain a level playing field for issuers and investors alike, the pricing framework must be standardized. The Canadian NI 51-101 experience, where a choice of pricing can be made so long as it is disclosed, led initially to confusion and within a short timeframe a near standardization on a grouping of one of several 3<sup>rd</sup> party price forecasts. Allowing issuers to select their own price framework does not create a level playing field for investors.

10.3. *Regardless of the pricing method that is used, should we allow or require companies to present a sensitivity analysis that would quantify the effect of price changes on the level of proved reserves?*

This kind of disclosure should be encouraged but not required, as should sensitivities on other matters. Investors are well served by seeing how price, operating cost or other sensitivities affect reserves. However, this type of extra disclosure can create substantial non-value adding work for issuers, as many reserves are insensitive to these kinds of fluctuations.

11. *Should we consider eliminating any of the current exclusions from proved reserves?*

12. *Should we consider eliminating any of the current exclusions from oil and gas activities?*

13. *Should we consider eliminating the current restrictions on including oil and gas reserves from sources that require further processing, e.g., tar sands? If we were to eliminate the current restrictions, how should we consider a disclosure framework for those reserves?*

13.1. *What physical form of those reserves should we consider in evaluating such a framework?*

Questions 11, 12 and 13 are interrelated, so I will attempt to answer them together.

Currently, the following two activities are not considered oil and gas activities pursuant to Rule 4-10, Paragraph 1 (ii):

- (A) The transporting, refining and marketing of oil and gas, and
- (D) The extraction of hydrocarbons from shale, tar sands, or coal.

The former is inconsistent. Natural gas is in fact a refined product; reserves are reported in sales volume, which come from separating a raw produced stream into its sub components of methane, ethane, propane, butane, NGLs and/or LPGs. There's no such thing as an NGL well, yet reserves are reported

separately for NGL, under the auspices of the “field processing” exception (Rule 4-10, Paragraph 1 (i)(C)). Oil reserves, on the other hand, are reported prior to separating it into subcomponents.

The latter is confusing. The extraction of natural gas from coal was clarified by the SEC to indeed be an oil and gas activity. The extraction of gas from shales, a growing activity in Canada and a significant one in the Barnett and elsewhere in the US, is treated as an oil and gas activity in apparent defiance of this rule. The extraction of bitumen from oil sands is clearly interpreted by the SEC as not being an oil and gas activity. One rule, three items, three radically different interpretations. Investors are not well served by this.

What appears to have evolved is that the extraction methodology matters in defining what is an oil and gas activity, and what is reserves. Hydrocarbons extracted in situ are reserves, but hydrocarbons that are not extracted in situ are not reserves, they are mineable resources, and disclosed accordingly under SEC Industry Guide 7 (disconcertingly, but outside the realm of the Concept Release, the frameworks for mineable resources and proved reserves have some fascinating differences, including the disclosure of probable information for mining resources). Investors are not well served by continuing this distinction.

Other submissions to this Concept Release question the need for this distinction, and I support those challenges. The end product of an oil sand production stream is a bitumen that, like natural gas, needs to be processed or blended prior to its being a refinable product. The refinery inlet can't tell the difference between these processed bitumen barrels and conventional barrels, but the two are not the same when it comes to Proved reserves under the current system.

Reserves and oil and gas activities should be defined in a way as to connect to the product delivered to the first custody transfer point, not the source in the ground they came from. This is how it works for conventional oil and natural gas, and this approach would correctly accommodate unconventional natural gas, oil sands, and virtually any other product I could envisage being produced.

Further, in evaluating Proved reserves under the current rules, non-hydrocarbon revenue is excluded. Excluding non-hydrocarbon revenue, when such revenues can factor significantly into issuer decision making and producing field life, misstates both the value of an investors resource base and the effective amount of reserves available. This distinction should be removed.

Also misleading is the current restriction regarding injected hydrocarbons. Purchased hydrocarbons that are injected for the purpose of enhanced recovery schemes are currently not considered reserves, leading to theoretical and misleading molecular level accounting. The injected hydrocarbons can eventually be recovered – creating a scenario where future production will occur with no reserves, no viable forecast, and no way of communicating that purchased value to investors other than to show an inventory value on a balance sheet (presumably determined by multiplying reserves that don't exist by a value for them?). The simple solution to this is to allow purchased hydrocarbons injected into formations for the purposes of enhanced recovery to be considered purchased reserves. Given the continuing increased interest of gaining additional life from old pools, this issue should be corrected at this time.

*13.2. Is there a way to establish a disclosure framework that accommodates unforeseen resource discoveries and processing methods?*

As noted elsewhere, a well written framework, generally updated every 10-15 years, is all that would be needed, with coal bed methane being the most obvious case of how to handle change.

*14. What aspects of technology should we consider in evaluating a disclosure framework? Is there a way to establish a disclosure framework that accommodates technological advances?*

Again, as noted in Questions 3 and 13, the Commission needs to be on a cycle of updates no more frequent than once every 10 years, and no slower than once every 15 years. Despite 27 years in the industry, I have never seen a technology change with a timeframe faster than 10 years. Leading edge

science will always exist. Investors who want leading edge companies can and do live fine with disclosures within a slow moving framework no matter the industry; the pharmaceutical industry is an example.

15. *Should we consider requiring companies to engage an independent third party to evaluate their reserves estimates in the filings they make with us? If yes, what should that party's role be?*

No. Firstly, there isn't the capacity in the 3<sup>rd</sup> party evaluations sector to manage the workload. Secondly, there isn't the skill and knowledge base to do so. Both of these issues exist in Canada where such a requirement exists under NI 51-101. As noted elsewhere, consistency in interpreting SEC rules varies as the SEC has limited their communications and training on the matter. I have personal experience in seeing two independent third parties arrive at answers much greater than 10% apart. I have been audited by numerous accounting firms, and the knowledge base in that sector of Proved reserves and their ramifications on other disclosures is woefully lacking. Investors should not be misled into believing just because a third party has examined the reserves information that it is correct.

Issuers should have the right, but not the obligation, to engage credible third parties to assist in reserves evaluations.

- 15.1. *Should we specify who would qualify to perform this function? If so, who should be permitted to perform this function and what professional standards should they follow? Are there professional organizations that the Commission can look to set and enforce adherence to those standards?*

Assuming a step is taken to require 3<sup>rd</sup> party review, there are no global professional standards that could be followed. Many jurisdictions have such standards, but they are not necessarily common. I'm certain the SEC realizes that issuers governed by their rules work in virtually every country in the world; no one professional global standard exists.

16. *In addition to the areas for comment identified above, we are interested in any other issues that commenters may wish to address and the benefits and costs relating to investors, issuers and other market participants of the possibility of revising disclosure rules pertaining to petroleum reserves included in Commission filings.*

It is my understanding that there is work underway to move U.S. public companies to an improved version of the International Financial Reporting Standards. Having managed reserves at an IFRS company, it is obvious to me why that particular company chose to report reserves under SEC's rules as opposed to the IFRS rules. The IFRS reserves rule set and framework is significantly weaker than the current rules of the SEC. A step towards an IFRS model would be a significant step backwards in reserves disclosure and management. I hope that the emphasis will be on improving the IFRS rules to at least the standards of an improved SEC rule set.

As noted at the beginning, I offer this submission as a private citizen, and the opinions expressed herein are solely my own and do not represent those of my current employer, of any of my past employers. Having worked reserves for the majority of my career, I am pleased to see the SEC engaging in dialog on the issues, and wish you luck in updating the framework. Thank you for the opportunity to provide input.



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