

Chapter 6

Request for Comments

- 6.1.1 Proposed Amendments to NI 51-101 Standards of Disclosure for Oil and Gas Activities, Form 51-101F1 Statement of Reserves Data and Other Oil and Gas Information, Form 51-101F2 Report on Reserves Data by Independent Qualified Reserves Evaluator or Auditor, Form 51-101F3 Report of Management and Directors on Oil and Gas Disclosure and Companion Policy 51-101CP Standards of Disclosure for Oil and Gas Activities

REQUEST FOR COMMENT

PROPOSED AMENDMENTS TO

**NATIONAL INSTRUMENT 51-101 STANDARDS OF DISCLOSURE FOR OIL AND GAS ACTIVITIES,
FORM 51-101F1 STATEMENT OF RESERVES DATA AND OTHER OIL AND GAS INFORMATION,
FORM 51-101F2 REPORT ON RESERVES DATA BY INDEPENDENT QUALIFIED RESERVES EVALUATOR OR AUDITOR,
FORM 51-101F3 REPORT OF MANAGEMENT AND DIRECTORS ON OIL AND GAS DISCLOSURE AND
COMPANION POLICY 51-101CP STANDARDS OF DISCLOSURE FOR OIL AND GAS ACTIVITIES**

Background

We, the Canadian Securities Administrators (CSA), are publishing for comment proposed amendments to National Instrument 51-101 *Standards of Disclosure for Oil and Gas Activities* (NI 51-101), its related forms (the Forms) and companion policy (51-101CP) (collectively, the Instrument).¹

NI 51-101 sets out the annual filing requirements for reporting issuers who are involved in oil and gas activities to report their estimates of reserves and resources. In addition, NI 51-101 sets out the general disclosure standards for reporting issuers who are reporting on their oil and gas activities. The disclosure standards apply to any disclosure made by a reporting issuer throughout the year.

Since the CSA implemented the Instrument in September 2003, we have monitored how it is working. We conducted a public consultation with representatives from various organizations representing petroleum producers, reserves evaluators and financial analysts. As a result of the consultation and CSA staff experience, we identified several areas in the Instrument which need to be amended.

We are publishing the proposed amendments to the Instrument with this Notice. You can find them on websites of CSA members, including the following:

- www.bcsc.bc.ca
- www.albertasecurities.com
- www.ssc.gov.sk.ca
- www.msc.gov.mb.ca
- www.osc.gov.on.ca
- www.lautorite.qc.ca

We are publishing

- amending instruments for
 - NI 51-101
 - the Forms
- new version of 51-101CP

¹ In Ontario, paragraphs 143(1) 22, 24 and 39 of the *Securities Act* provide the Ontario Securities Commission with authority to make the proposed amendments to NI 51-101.

Request for Comments

We are also publishing a black-lined version of NI 51-101 and the Forms that integrates the proposed changes from the amending instrument.

Substance and purpose of the amendments

The proposed amendments to the Instrument fall into the following four broad categories:

1. Amendments to clarify some provisions of the Instrument.
2. Amendments to remove or amend certain requirements for the annual filing requirements where such requirements were determined to be burdensome for reporting issuers and of limited utility for investors and security holders.
3. Amendments to certain provisions to provide new guidelines for disclosure of resources that cannot currently be classified as reserves.
4. Amendments to streamline requirements in the Instrument.

Summary of proposed amendments

We have summarized the significant proposed amendments in the Appendix. This is not a complete list of all the amendments.

We have added certain requirements for a reporting issuer which reports its resources which cannot currently be classified as reserves. These additional requirements are intended to improve disclosure of resources and to provide additional guidance to reporting issuers wishing to make meaningful and understandable disclosure of their oil and gas resources.

We have removed the requirement to report reserves and the related future net revenue using constant prices and cost. We have also removed the requirement to do a reconciliation of future net revenue. Finally, we have changed the requirement to do a reserves reconciliation using net reserves to doing the reserves reconciliation using gross reserves.

Alternatives considered

As discussed above, many of the amendments are intended to clarify the Instrument or to streamline requirements. One alternative to amending the Instrument was to issue a CSA Staff Notice to provide additional guidance on reserve and resource disclosure. However, to provide the appropriate degree of certainty, clarity and consistency among affected reporting issuers, we considered it preferable to amend, replace and add provisions to the Instrument itself. The CSA has issued CSA Staff Notice 51-321 to provide guidance to reporting issuers wishing to disclose their resources prior to these amendments coming into force.

Anticipated costs and benefits

We believe that the proposed amendments to the Instrument will reduce issuers' costs, as the amendments will address problems industry has had applying the Instrument. In addition, the amendments do not impose any additional mandatory requirements but only add requirements if a reporting issuer chooses to disclose certain items. We also believe that the amendments will make reporting issuers' disclosure about oil and gas reserves and resources more meaningful and understandable to investors and security holders.

Related amendments

We propose to repeal National Policy 22 *Use of Information and Opinion Re Mining and Oil Properties by Registrants and Others* as it is outdated and been largely replaced by guidance on use of information in Part 5 of Companion Policy 43-101 *Standards of Disclosure for Mineral Projects* and Companion Policy 51-101CP *Standards of Disclosure for Oil and Gas Activities*. (Note: National Policy 22 has already been repealed in the Province of Québec.)

Unpublished materials

In proposing amendments to the Instrument, we have not relied on any significant unpublished study, report, or other written materials, except the results of the public consultation we referred to above.

Request for comments

We welcome your comments on the proposed amendments to the Instrument. In addition to any general comments you may have, we also invite comments on the following specific topic:

Request for Comments

Section 3.2 of NI 51-101 requires that a reporting issuer appoint an independent qualified reserves evaluator or auditor and section 3.4 of NI 51-101 expressly requires that the board of directors (directly or through a reserves committee) review that appointment. The responsibility for making the appointment is not specified in the rule. Would there be a material enhancement to investor protection if the rule required the board to appoint the independent reserves evaluator or auditor in addition to the existing appointment review requirement?

Please submit your comments on the proposed amendments to the Instrument in writing on or before April 19, 2007. If you are not sending your comments by email, you should also forward a diskette containing the submissions (in Windows format, Word).

Address your submission to all of the CSA member commissions, as follows:

British Columbia Securities Commission
Alberta Securities Commission
Saskatchewan Financial Services Commission – Securities Division
Manitoba Securities Commission
Ontario Securities Commission
Autorité des marchés financiers
New Brunswick Securities Commission
Registrar of Securities, Prince Edward Island
Nova Scotia Securities Commission
Newfoundland and Labrador Securities Commission
Registrar of Securities, Northwest Territories
Registrar of Securities, Yukon Territory
Registrar of Securities, Nunavut

Deliver your comments only to the addresses that follow. Your comments will be forwarded to the other CSA member jurisdictions.

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4th Floor, 300-5th Avenue SW
Calgary, Alberta
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Fax: (403) 297-4220
e-mail: blaine.young@seccom.ab.ca

Anne-Marie Beaudoin
Directrice du secrétariat de l'Autorité
Autorité des marchés financiers
800, square Victoria, 22 e étage
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Montréal (Québec) H4Z 1G3
Fax: (514) 864-6381
e-mail: consultation-en-cours@lautorite.qc.ca

We cannot keep submissions confidential because securities legislation in certain provinces requires publication of a summary of the written comments received during the comment period.

Questions

Please refer your questions to any of:

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Request for Comments

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The text of the proposed amendments follows or can be found elsewhere on a CSA member website.

January 19, 2007

APPENDIX

SUMMARY OF PROPOSED AMENDMENTS

NI 51-101

We propose to amend NI 51-101 as follows:

Part 1 Definitions

- by adding a definition of *analogous information* as the term is used in the to be amended section 5.10 of *NI 51-101*
- by adding a definition of *anticipated results* that includes any information indicating the potential value or quantities of *resources* to ensure that when such information is disclosed it is disclosed in accordance with section 5.9
- by deleting the definition of *constant prices and costs* as it will no longer be used in *NI 51-101*
- by changing the definition of *independent* to make it more consistent with other *securities legislation*
- by changing the definition of *reserves data* to only include estimates of *reserves* and *future net revenue* using *forecast prices and costs* and not constant prices and costs

Part 2 Annual Filing Requirements

- in section 2.2 by clarifying that the notice to announce filing must be filed with the *securities regulatory authority* as well as disseminated

Part 4 Measurement

- in section 4.2 by deleting certain requirements that did not specifically relate to measurement

Part 5 Requirements Applicable to all Disclosure

- in section 5.2 by including all items deleted from section 4.2 in section 5.2; in addition, by adding a requirement to provide cautionary language when making disclosure of possible reserves
- in section 5.3 by adding the requirement that *reserves* and *resources* must be classified in the most specific category of *reserves* or *resources* that is applicable
- in section 5.9 by changing and clarifying the requirements for *reporting issuers* who choose to make disclosure of *resources* that cannot be currently classified as *reserves*
- by deleting the old section 5.10 and by adding a new section 5.10 that allows *reporting issuers* to disclose comparative *analogous information* for an area outside of the area in which the *reporting issuer* has an interest or intends to acquire an interest even if the information does not meet all of the other requirements of *NI 51-101*

Part 6 Material Change Disclosure

- in section 6.2 by clarifying the requirements when making disclosure of material changes with respect to *reserves data* or other information specified in *Form 51-101F1*

Part 8 Exemption

- by adding section 8.2 to provide an automatic exemption from the requirements of *NI 51-101* to exchangeable security issuers if they meet all of the requirements of a similar exemption in *NI 51-102*

Form 51-101F1 Statement of Reserves Data and Other Oil and Gas Information

We propose to amend the *Form 51-101F1* as follows:

- by eliminating the requirement of providing *reserves data* estimated using *constant prices and costs*
- by adding a requirement in the calculation of *future net revenue* to provide the information on a unit value basis
- by changing the requirement of providing a *reserves* reconciliation using *net reserves* to a reconciliation using gross reserves
- by eliminating the requirement to provide a *future net revenue* reconciliation

Form 51-101F2 Report on Reserves Data by Independent Qualified Reserves Evaluator or Auditor

We propose to amend *Form 51-101F2* as follows:

- by changing the statement to reflect the fact that *reporting issuers* are no longer required to report their *reserves data* estimating using *constant prices and costs*
- by adding required language stating that variations between the estimates of *reserves data* and the actual results should be consistent with the fact that *reserves* are categorized according to the probability of their recovery

Form 51-101F3 Report of Management and Directors on Oil and Gas Disclosure

We propose to amend *Form 51-101F3* as follows:

- by changing the statement to reflect the fact that *reporting issuers* are no longer required to report their *reserves data* estimated using *constant prices and costs*
- by adding required language stating that variations between the estimates of *reserves data* and the actual results should be consistent with the fact that *reserves* are categorized according to the probability of their recovery

51-101CP

The proposed amendments to 51-101CP reflect the changes to *NI 51-101* described above and provide further guidance on how to interpret and apply *NI 51-101*. In addition, 51-101CP was reorganized. Finally, we have removed the guidance on potential exemptions from the requirements of *NI 51-101* as we believe these exemptions are not appropriate for many *reporting issuers*.

AMENDMENTS TO

NATIONAL INSTRUMENT 51-101 STANDARDS OF DISCLOSURE FOR OIL AND GAS ACTIVITIES

1. **National Instrument 51-101 Standards of Disclosure for Oil and Gas Activities is amended by this Instrument.**
2. **Part 1 is amended by,**
 - a. **in paragraph 1.1(a), striking out “National Instrument 51-102 Continuous Disclosure Obligations” and substituting “NI 51-102”,**
 - b. **after paragraph 1.1(a), adding the following paragraphs:**
 - (a.1) *"analogous information"* means information about an area outside the area in which the *reporting issuer* has an interest or intends to acquire an interest, which is referenced by the *reporting issuer* for the purpose, in the opinion of a reasonable person, of drawing a comparison or conclusion to an area in which the *reporting issuer* has an interest or intends to acquire an interest and may include:
 - (i) historic information concerning *reserves*;
 - (ii) estimates of the volume or value of *reserves*;
 - (iii) historic information concerning *resources*;
 - (iv) estimates of the volume or value of *resources*;
 - (v) historic *production* amounts;
 - (vi) *production* estimates; or
 - (vii) information concerning a *field*, well, basin or reservoir;
 - (a.2) *"anticipated results"* means information that may, in the opinion of a reasonable person, indicate the potential value or quantities of *resources* in respect of the *reporting issuer's resources* or a portion of its *resources* which may include:
 - (i) an estimate of volume;
 - (ii) an estimate of value;
 - (iii) areal extent;
 - (iv) anticipated pay thickness;
 - (v) flow rates; or
 - (vi) hydrocarbon content;
 - c. **repealing paragraph 1.1(d) and substituting the following:**
 - (d) *"CICA Accounting Guideline 16"* means Accounting Guideline AcG-16 "Oil and gas accounting - full cost" included in the *CICA Handbook*, as amended from time to time;
 - d. **repealing paragraph 1.1(g);**
 - e. **in paragraph 1.1(o), striking out “qualified reserves evaluator or auditor, has the meaning set out in the COGE Handbook” and substituting “person or company, means a relationship between the reporting issuer and that person or company in which there is no circumstance that could, in the opinion of a reasonable person aware of all relevant facts, interfere with that person’s or company’s exercise of judgment regarding the preparation of information which is used by the reporting issuer”,**

- f. after paragraph 1.1(r), adding the following paragraph:**

 - (r.1) "NI 51-102" means National Instrument 51-102 *Continuous Disclosure Obligations*;
- g. in paragraph 1.1(v),**

 - i. in clause (C) striking out the "or",**
 - ii. in clause (D) striking out the period and substituting a semi-colon,**
 - iii. and after clause (D) adding the following clauses:**

 - (E) shale oil; or
 - (F) shale gas;,
- h. in subparagraph 1.1(x)(i), adding " , resources" after "reserves data", wherever it occurs;**
- i. in subparagraph 1.1(y)(i), adding " , resources" after "reserves data", wherever it occurs;**
- j. after paragraph 1.1(z), adding the following:**

 - (z.1) "reserves" means proved, probable or possible reserves;,
- k. repealing paragraph 1.1(aa) and substituting the following:**

 - (aa) "reserves data" means an estimate of *proved reserves* and *probable reserves* and related *future net revenue*, estimated using *forecast prices and costs*; and, **and**
- l. in subsection 1.2(2), striking out "shall" and substituting "will".**
- 3. Part 2 is amended by, in section 2.2, striking out "News Release" at the beginning of the section and substituting "Notice", and striking out "a news release" after "disseminate" and substituting "and file with the securities regulatory authority a notice",**
- 4. Part 4 is amended by,**

 - a. in paragraph 4.1(a), striking out "5" and substituting "16",**
 - b. repealing section 4.2 and substituting the following:**

 - 4.2 **Consistency in Dates** - The date or period with respect to which the effects of an event or transaction are recorded in a *reporting issuer's* annual financial statements must be the same as the date or period with respect to which they are first reflected in the *reporting issuer's* annual *reserves data* disclosure under Part 2.
- 5. Part 5 is amended by,**

 - a. repealing section 5.2 and substituting the following:**

 - 5.2 **Disclosure of Reserves and Other Information** - If a *reporting issuer* makes disclosure of *reserves* or other information of a type that is specified in *Form 51-101F1*, the reporting issuer must ensure that the disclosure satisfies the following requirements:

 - (a) estimates of *reserves* or *future net revenue* must

 - (i) disclose the *effective date* of the estimate;
 - (ii) have been prepared or audited by a *qualified reserves evaluator* or *auditor*;
 - (iii) have been prepared or audited in accordance with the *COGE Handbook*;

(iv) have been estimated assuming that development of each *property* in respect of which the estimate is made will occur, without regard to the likely availability to the *reporting issuer* of funding required for that development; and

(v) in the case of estimates of *possible reserves* or related *future net revenue* disclosed in writing, also include cautionary language proximate to the estimate to the following effect:

“Possible reserves are those additional reserves that are less certain to be recovered than probable reserves. There is only a 10% probability that the quantities actually recovered will equal or exceed the sum of proved plus probable plus possible reserves.”;

(b) for the purpose of determining whether *reserves* should be attributed to a particular undrilled *property*, reasonably estimated future abandonment and reclamation costs related to the *property* must have been taken into account;

(c) in disclosing aggregate *future net revenue* it must comply with the requirements for the determination of *future net revenue* specified in *Form 51-101F1*; and

(d) the disclosure must be consistent with the corresponding information, if any, contained in the statement most recently filed by the *reporting issuer* with the *securities regulatory authority* under item 1 of section 2.1, except to the extent that such statement has been supplemented or superseded by a report of a material change³ filed by the *reporting issuer* with the *securities regulatory authority*.

b. in Section 5.3, striking out “be consistent with” and substituting “apply” and adding “and must relate to the most specific category of reserves or resources in which the reserves or resources can be classified” after “set out in the COGE Handbook”,

c. in section 5.4, adding “the quantities and” after “marketable quantities, reflecting”,

d. in section 5.6, adding “Market” after “Not Fair”,

e. in paragraph 5.7(2)(c), striking out “news release” and substituting “notice”,

f. repealing section 5.9 and substituting the following:

5.9 Disclosure of Resources

(1) If a *reporting issuer* discloses *anticipated results* from *resources* which are not currently classified as *reserves*, the *reporting issuer* must also disclose in writing, in the same document or in a *supporting filing*:

(a) the *reporting issuer’s* interest in the *resources*;

(b) the location of the *resources*;

(c) the *product types* reasonably expected;

(d) the risks and the level of uncertainty associated with recovery of the *resources*; and

(e) in the case of *unproved property*, if its value is disclosed,

(i) the basis of the calculation of its value; and

(ii) whether the value was prepared by an *independent* party.

(2) If disclosure referred to in subsection (1) includes an estimate of a quantity of *resources* in which the *reporting issuer* has an interest or intends to acquire an interest, or an estimated value attributable to an estimated quantity, the estimate must

³ Material change has the same meaning ascribed to the term under *securities legislation* of the applicable *jurisdiction*.

- (a) have been prepared or audited by a *qualified reserves evaluator or auditor*;
- (b) relate to the most specific category of *resources* in which the *resources* can be classified, as set out in the *COGE Handbook*, and must identify what portion of the estimate is attributable to each category; and
- (c) be accompanied by the following information:
 - (i) a definition of the *resources* category used for the estimate;
 - (ii) the effective date of the estimate;
 - (iii) the significant positive and negative factors relevant to the estimate;
 - (iv) the estimated percentage probability that the issuer will
 - (A) discover hydrocarbons in sufficient quantity for them to be tested to the surface, in the case of *undiscovered resources* or a subcategory of *undiscovered resources*; or
 - (B) commercially extract the volume disclosed, in the case of *discovered resources* or a subcategory of *discovered resources* other than reserves;
 - (v) in respect of *contingent resources*, the specific contingencies which prevent the classification of the *resources* as *reserves*; and
 - (vi) cautionary language proximate to the estimate to the effect that:
 - (A) in the case of *discovered resources* or a subcategory of *discovered resources* other than *reserves*:

“There is no certainty that it will be economically viable or technically feasible to produce any portion of the resources.”; or
 - (B) in the case of *undiscovered resources* or a subcategory of *undiscovered resources*:

“There is no certainty that any portion of the resources will be discovered. If discovered, there is no certainty that it will be economically viable or technically feasible to produce any portion of the resources.”
- (3) Paragraphs 5.9(1)(d) and (e) and subparagraphs 5.9(2)(c)(iii),(iv) and (v) do not apply if:
 - (a) the *reporting issuer* includes in the written disclosure a reference to the title and date of a previously filed document that complies with those requirements; and
 - (b) the *resources* in the written disclosure, taking into account the specific *properties* and interests reflected in the *resources* estimate or other *anticipated result*, are *materially* the same *resources* addressed in the previously filed document.

g. repealing section 5.10 and substituting the following:

5.10 Analogous Information

- (1) Sections 5.2, 5.3 and 5.9 do not apply to the disclosure of *analogous information* provided that the *reporting issuer* discloses the following:
 - (a) the source and date of the *analogous information*;
 - (b) whether the source of the *analogous information* was *independent*;
 - (c) if the *reporting issuer* is unable to confirm that the *analogous information* was prepared by a *qualified reserves evaluator or auditor* or in accordance with the *COGE Handbook*,

cautionary language to that effect proximate to the disclosure of the *analogous information*; and

(d) the relevance of the *analogous information* to the *reporting issuer's oil and gas activities*.

(2) If a *reporting issuer* discloses information that is an *anticipated result*, an estimate of a quantity of *reserves* or *resources*, or an estimate of value attributable to an estimated quantity of *reserves* or *resources* for an area in which it has an interest or intends to acquire an interest that is based on an extrapolation from *analogous information* sections 5.2, 5.3 and 5.9 will apply to the disclosure of the information., **and**

h. in section 5.13,

i. adding "must" after "Written disclosure of a netback",

ii. repealing paragraph (a),and

iii. renumbering paragraphs (b) and (c) as paragraphs (a) and (b), respectively.

6. Part 6 is amended by, in subsection 6.1(2),

i. striking out "shall" and substituting "must discuss the reporting issuer's reasonable expectation of how the material change has affected its reserves data or other information.", and

ii. repealing paragraphs (a) and (b).

7. Part 8 is amended by adding the following after section 8.1:

8.2 Exemption for Certain Exchangeable Security Issuers

(1) An exchangeable security issuer, as defined in subsection 13.3(1) of *NI 51-102*, is exempt from this *Instrument* provided that all of the requirements of subsection 13.3(2) of *NI 51-102* are satisfied;

(2) For the purposes of subsection (1), the reference to "continuous disclosure documents" in clause 13.3(2)(d)(ii)(A) of *NI 51-102* includes documents filed in accordance with this *Instrument*.

8. With the exception of subsection 1.2(2), all provisions containing the word "shall" are amended by striking out "shall" and substituting "must".

9. This amendment comes into force •.

AMENDMENTS TO

FORM 51-101F1 STATEMENT OF RESERVES DATA AND OTHER OIL AND GAS INFORMATION,
FORM 51-101F2 REPORT ON RESERVES DATA BY INDEPENDENT QUALIFIED RESERVES EVALUATOR OR AUDITOR,
AND
FORM 51-101F3 REPORT OF MANAGEMENT AND DIRECTORS ON OIL AND GAS DISCLOSURE

1. **Form 51-101F2 Statement of Reserves Data and Other Oil and Gas Information, Form 51-101F2 Report on Reserves Data by Independent Qualified Reserves Evaluator or Auditor, and Form 51-101F3 Report of Management and Directors on Oil and Gas Disclosure are amended by this Instrument.**
2. **Form 51-101F1 Statement of Reserves Data and Other Oil and Gas Information is amended by,**
 - (a) **repealing Item 2.1 and substituting the following:**

Item 2.1 Reserves Data (Forecast Prices and Costs)

1. Breakdown of Reserves (Forecast Case) – Disclose, by country and in the aggregate, *reserves, gross and net*, estimated using *forecast prices and costs*, for each *product type*, in the following categories:
 - (a) *proved developed producing reserves*;
 - (b) *proved developed non-producing reserves*;
 - (c) *proved undeveloped reserves*;
 - (d) *proved reserves (in total)*;
 - (e) *probable reserves (in total)*;
 - (f) *proved plus probable reserves (in total)*; and
 - (g) if the *reporting issuer* discloses an estimate of *possible reserves* in the statement:
 - (i) *possible reserves (in total)*; and
 - (ii) *proved plus probable plus possible reserves (in total)*.
2. Net Present Value of Future Net Revenue (Forecast Case) – Disclose, by country and in the aggregate, the net present value of *future net revenue* attributable to the *reserves* categories referred to in section 1 of this Item, estimated using *forecast prices and costs*, before and after deducting *future income tax expenses*, calculated without discount and using discount rates of 5 percent, 10 percent, 15 percent and 20 percent. Also disclose the same information on a unit value basis (e.g., \$/Mcf or \$/bbl using net reserves) using a discount rate of 10 percent and calculated before deducting *future income tax expenses*. This unit value disclosure requirement may be satisfied by including the unit value disclosure for each category of proved reserves and for probable reserves in the disclosure referred to in paragraph 3(c) of item 2.1.
3. Additional Information Concerning Future Net Revenue (Forecast Case)
 - (a) This section 3 applies to *future net revenue* attributable to each of the following *reserves* categories estimated using *forecast prices and costs*:
 - (i) *proved reserves (in total)*;
 - (ii) *proved plus probable reserves (in total)*; and
 - (iii) if paragraph 1(g) of this Item applies, *proved plus probable plus possible reserves (in total)*.
 - (b) Disclose, by country and in the aggregate, the following elements of *future net revenue* estimated using *forecast prices and costs* and calculated without discount:

- (i) revenue;
 - (ii) royalties;
 - (iii) *operating costs*;
 - (iv) *development costs*;
 - (v) abandonment and reclamation costs;
 - (vi) *future net revenue* before deducting *future income tax expenses*;
 - (vii) *future income tax expenses*; and
 - (viii) *future net revenue* after deducting *future income tax expenses*.
- (c) Disclose, by *production group* and on a unit value basis for each production group (e.g., \$/Mcf or \$/bbl using net reserves), the net present value of *future net revenue* (before deducting *future income tax expenses*) estimated using *forecast prices and costs* and calculated using a discount rate of 10 percent.

(b) repealing Item 2.2 and substituting the following:

Item 2.2 Supplemental Disclosure of Reserves Data (Constant Prices and Costs)

The *reporting issuer* may, supplement its disclosure of *reserves data* under item 2.1 by also disclosing the components of item 2.1 in respect of its *proved reserves* or its *proved and probable reserves*, using *constant prices and costs* as at the last day of the *reporting issuer's* most recent financial year.,

(c) repealing instruction (3) to Part 2, and substituting the following:

(3) **Constant prices and costs** are prices and costs used in an estimate that are:

- (a) the **reporting issuer's** prices and costs as at the **effective date** of the estimation, held constant throughout the estimated lives of the **properties** to which the estimate applies; or
- (b) if, and only to the extent that, there are fixed or presently determinable future prices or costs to which the **reporting issuer** is legally bound by a contractual or other obligation to supply a physical product, including those for an extension period of a contract that is likely to be extended, those prices or costs rather than the prices and costs referred to in paragraph (a).

For the purpose of paragraph (a), the **reporting issuer's** prices will be posted price for oil and the spot price for gas, after historical adjustments for transportation, gravity and other factors.,

(d) in Item 3.1,

- i. in the heading, adding "Supplemental" after "Constant Prices Used in",**
- ii. at the beginning of the paragraph, striking out "For" and substituting "If supplemental disclosure under section 2.2 is made, then disclose, for",**
- iii. striking out "disclose" after "each product type", and**
- iv. at the end of the paragraph, striking out "2.1" and substituting "2.2".**

(e) at the end of paragraph 3.2(1)(a), striking out "2.2" and substituting "2.1",

(f) in instruction (2) to Part 3, striking out "defined terms" and substituting "term", and adding "the defined term" after "constant prices and costs" and",

(g) in the heading to Part 4 striking out "RECONCILIATIONS OF CHANGES IN RESERVES AND FUTURE NET REVENUE" and substituting "RECONCILIATION OF CHANGES IN RESERVES",

- (h) *in paragraph 4.1(1)(a) striking out “net” and substituting “gross”,*
- (i) *in paragraph 4.1(1)(b) striking out “net” and substituting “gross”,*
- (j) *in paragraphs 4.1(1)(c), striking out “net” and substituting “gross”,*
- (k) *in paragraph 4.1(2)(b),*

 - v. *at the end of subparagraph (iii), striking out “and”,*
 - vi. *at the end of subparagraph (iv), striking out “and other products from non-conventional oil and gas activities”,*
 - vii. *adding the following subparagraphs after subparagraph (iv):*

 - (v) *bitumen;*
 - (vi) *coal bed methane;*
 - (vii) *hydrates;*
 - (viii) *shale oil; and*
 - (ix) *shale gas;.*
- (l) *in paragraph 4.1(2)(c),*

 - vii. *in subparagraph (i), adding “and improved recovery”,*
 - ix. *repealing paragraph (ii); and*
 - x. *renumbering subparagraphs (iii),(iv), (v), (vi), (vii), and (viii) as (ii), (iii), (iv), (v), (vi), and (vii), respectively,*
- (m) *in instruction (1) to Item 4.1, striking out “either constant prices and costs or” ,*
- (n) *repealing Item 4.2,*
- (o) *repealing the instructions to Part 4,*
- (p) *in paragraph 5.1(1)(a), striking out “five” and substituting “three”, and at the end of the paragraph, striking out “or” and substituting “and”,*
- (q) *in paragraph 5.1(2)(a), striking out “five” and substituting “three”, and at the end of the paragraph, striking out “or” and substituting “and”,*
- (r) *in paragraph 5.3(1)(a)*

 - xi. *repealing subparagraph (i), and*
 - xii. *renumbering subparagraphs (ii) and (iii) as subparagraphs (i) and (ii), respectively,*
- (s) *in subparagraph 5.3(1)(b)(i), striking out “and using a discount rate of 10 percent”,*
- (t) *in paragraph 6.3(2)(a), striking out “3860” and substituting “3861”,*
- (u) *in the instruction to Item 6.4, striking out of “and clause 3(b)(v) of Item 2.2”,*
- (v) *in subsection 6.8(1),striking out “future net revenue” after and substituting “gross proved reserves and gross probable reserves”, and striking out “Items 2.1 and 2.2” and substituting “Item 2.1.”,*

- (w) **at the end of the instruction to Item 6.9, adding** “Resulting netbacks may be disclosed on the basis of units of equivalency between oil and gas (e.g. BOE) but if so that must be made clear and disclosure must comply with section 5.14 of NI 51-101.”.
3. **Form 51-101F2 Report on Reserves Data by Independent Qualified Reserves Evaluator or Auditor is amended by, in the prescribed form of the “Report on Reserves Data” under section 2,**
- (a) **in paragraph 1, striking out** “consist of the following:” **and substituting** “are estimates of proved reserves and probable reserves and related future net revenue as at [last day of the reporting issuer’s most recently completed financial year], estimated using forecast prices and costs.”,
- (b) **repealing subparagraphs 1(a) and (b), and**
- (c) **at the end of paragraph 7, adding the following:**
- “However, any variations should be consistent with the fact that reserves are categorized according to the probability of their recovery.”.
- 4 **Form 51-101F3 Report of Management and Directors on Oil and Gas Disclosure is amended by, in the prescribed form of “Report of Management and Directors on Oil and Gas Disclosure” under section 2,**
- (a) **in the paragraph beginning** “Management of [name of reporting issuer]” **striking out** “consist of the following:” **and substituting** “are estimates of proved reserves and probable reserves and related future net revenue as at [last day of the reporting issuer’s most recently completed financial year], estimated using forecast prices and costs.”
- (b) **after the paragraph beginning** “Management of [name of reporting issuer]” **repealing subparagraphs(a) and (b),**
- (c) **after the paragraph beginning** “The [Reserves Committee of the] board of directors of the Company has”, **in subparagraph (b), striking out** “because of the” **and substituting** “in the event of a”,
- (d) **after the paragraph beginning** “The [Reserves Committee of the] board of directors has reviewed”, **in subparagraph (a), striking out** “the” **after** “securities regulatory authorities of” **and substituting** “Form 51-101F1 containing”,
- (e) **after the paragraph beginning** “The [Reserves Committee of the] board of directors has reviewed”, **in subparagraph (b), adding** “Form 51-101F2 which is” **after** “the filing of”, **and**
- (f) **at the end of the paragraph beginning** “Because the reserves data are based on judgements” **adding** “However, any variations should be consistent with the fact that reserves are categorized according to the probability of their recovery.”.
5. **This amendment comes into force •.**

**NATIONAL INSTRUMENT 51-101
STANDARDS OF DISCLOSURE FOR OIL AND GAS ACTIVITIES**

TABLE OF CONTENTS

Part 1 APPLICATION AND TERMINOLOGY

- 1.1 Definitions
- 1.2 *COGE Handbook* Definitions
- 1.3 Applies to *Reporting Issuers* Only
- 1.4 *Materiality Standard*

Part 2 ANNUAL FILING REQUIREMENTS

- 2.1 *Reserves Data* and Other Oil and Gas Information
 - 1. Statement of *Reserves Data* and Other Information
 - 2. Report of *Independent Qualified Reserves Evaluator or Auditor*
 - 3. Report of Management and Directors
- 2.2 ~~News Release~~ **Notice** to Announce Filing
- 2.3 Inclusion in *Annual Information Form*
- 2.4 *Reservation* in Report of *Qualified Reserves Evaluator or Auditor*

Part 3 RESPONSIBILITIES OF *REPORTING ISSUERS* AND DIRECTORS

- 3.1 Interpretation
- 3.2 *Reporting Issuer* to Appoint *Independent Qualified Reserves Evaluator or Auditor*
- 3.3 *Reporting Issuer* to Make Information Available to *Qualified Reserves Evaluator or Auditor*
- 3.4 Certain Responsibilities of Board of Directors
- 3.5 *Reserves Committee*
- 3.6 repealed September 19, 2005

Part 4 MEASUREMENT

- 4.1 Accounting Methods
- 4.2 ~~Requirements for Disclosed Reserves Data~~
- 4.2 Consistency in Dates**

Part 5 REQUIREMENTS APPLICABLE TO ALL DISCLOSURE

- 5.1 Application of Part 5
- 5.2 ~~Consistency with~~ **Disclosure of Reserves Data** and Other Information
- 5.3 *Reserves* and *Resources* Classification
- 5.4 *Oil and Gas Reserves* and Sales
- 5.5 *Natural Gas* By-Products
- 5.6 *Future Net Revenue* Not Fair **Market** Value
- 5.7 Consent of *Qualified Reserves Evaluator or Auditor*
- 5.8 Disclosure of Less Than All *Reserves*
- 5.9 Disclosure Concerning ~~Prospects of~~ **Resources**
- 5.10 ~~Estimates of Fair Value of an Unproved Property, Prospect or Resource~~
- 5.10 Analogous Information**
- 5.11 Net Asset Value and Net Asset Value per Share
- 5.12 *Reserve Replacement*
- 5.13 Netbacks
- 5.14 *BOEs* and *McfGEs*
- 5.15 *Finding and Development Costs*

Part 6 MATERIAL CHANGE DISCLOSURE

- 6.1 Material Change from Information Filed under Part 2

Part 7 OTHER INFORMATION

- 7.1 Information to be Furnished on Request

Part 8 EXEMPTIONS

- 8.1 Authority to Grant Exemption
- 8.2 Exemption for Certain Exchangeable Security Issuers**

Part 9 INSTRUMENT IN FORCE

- 9.1 Coming Into Force
- 9.2 Transition

NATIONAL INSTRUMENT 51-101
STANDARDS OF DISCLOSURE FOR OIL AND GAS ACTIVITIES

PART 1 APPLICATION AND TERMINOLOGY¹

1.1 Definitions² - In this Instrument:

- (a) "annual information form" has the same meaning as "AIF" in ~~National Instrument 51-102 *Continuous Disclosure Obligations*; NI 51-102~~ as amended December 30, 2005
- (a.1) "analogous information" means information about an area outside the area in which the reporting issuer has an interest or intends to acquire an interest, which is referenced by the reporting issuer for the purpose, in the opinion of a reasonable person, of drawing a comparison or conclusion to an area in which the reporting issuer has an interest or intends to acquire an interest and may include:
- (i) historic information concerning reserves;
 - (ii) estimates of the volume or value of reserves;
 - (iii) historic information concerning resources;
 - (iv) estimates of the volume or value of resources;
 - (v) historic production amounts;
 - (vi) production estimates; or
 - (vii) information concerning a field, well, basin or reservoir;
- (a.2) "anticipated results" means information that may, in the opinion of a reasonable person, indicate the potential value or quantities of resources in respect of the reporting issuer's resources or a portion of its resources, which may include:
- (i) an estimate of volume;
 - (ii) an estimate of value;
 - (iii) areal extent;
 - (iv) anticipated pay thickness;
 - (v) flow rates; or
 - (vi) hydrocarbon content;
- (b) "BOEs" means barrels of oil equivalent;
- (c) "CICA" means The Canadian Institute of Chartered Accountants;
- (d) "~~CICA Accounting Guideline 516~~" means Accounting Guideline AcG-5 "~~Full cost~~ **16 "Oil and gas** accounting in the oil and gas industry- **full cost**" included in the *CICA Handbook*, as amended from time to time;
- (e) "*CICA Handbook*" means the Handbook of the CICA, as amended from time to time;

¹ For the convenience of readers, Appendix 1 to Companion Policy 51-101CP sets out the meanings of terms, including those defined in this Part, that are printed in italics in this *Instrument, Form 51-101F1, Form 51-101F2, Form 51-101F3* or the Companion Policy.

² A national definition instrument has been adopted as *NI 14-101*. It contains definitions of certain terms used in more than one national or multilateral instrument. *NI 14-101* provides that a term used in a national or multilateral instrument and defined in the statute relating to securities of the applicable *jurisdiction*, the definition of which is not restricted to a specific portion of the statute, will have the meaning given to it in that statute unless the context otherwise requires. *NI 14-101* also provides that a provision or a reference within a provision of a national or multilateral instrument that specifically refers by name to a jurisdiction other than the local jurisdiction shall not have any effect in the local jurisdiction, unless otherwise stated in that national or multilateral instrument.

- (f) "COGE Handbook" means the "Canadian Oil and Gas Evaluation Handbook" prepared jointly by The Society of Petroleum Evaluation Engineers (Calgary Chapter) and the Canadian Institute of Mining, Metallurgy & Petroleum (Petroleum Society), as amended from time to time;
- (g) ~~"constant prices and costs" means the prices and costs used in an estimate that are:~~
repealed;
(i) ~~the reporting issuer's prices and costs as at the effective date of the estimation, held constant throughout the estimated lives of the properties to which the estimate applies;~~
(ii) ~~if, and only to the extent that, there are fixed or presently determinable future prices or costs to which the reporting issuer is legally bound by a contractual or other obligation to supply a physical product, including those for an extension period of a contract that is likely to be extended, those prices or costs rather than the prices and costs referred to in subparagraph (i);~~
- (h) "effective date", in respect of information, means the date as at which, or for the period ended on which, the information is provided;
- (i) "FAS 19" means United States Financial Accounting Standards Board Statement of Financial Accounting Standards No. 19 "Financial Accounting and Reporting by Oil and Gas Producing Companies", as amended from time to time;
- (j) "forecast prices and costs" means future prices and costs that are:
(i) generally accepted as being a reasonable outlook of the future;
(ii) if, and only to the extent that, there are fixed or presently determinable future prices or costs to which the reporting issuer is legally bound by a contractual or other obligation to supply a physical product, including those for an extension period of a contract that is likely to be extended, those prices or costs rather than the prices and costs referred to in subparagraph (i);
- (k) "foreign geographic area" means a geographic area outside North America within one country or including all or portions of a number of countries;
- (l) "Form 51-101F1" means Form 51-101F1 *Statement of Reserves Data and Other Oil and Gas Information*;
- (m) "Form 51-101F2" means Form 51-101F2 *Report on Reserves Data by Independent Qualified Reserves Evaluator or Auditor*;
- (n) "Form 51-101F3" means Form 51-101F3 *Report of Management and Directors on Oil and Gas Disclosure*;
- (o) "independent", in respect of the relationship between a reporting issuer and a ~~qualified reserves evaluator or auditor, has the meaning set out in the COGE Handbook~~person or company, means a relationship between the reporting issuer and that person or company in which there is no circumstance that could, in the opinion of a reasonable person aware of all relevant facts, interfere with that person's or company's exercise of judgment regarding the preparation of information which is used by the reporting issuer.
- (p) "McfGEs" means thousand cubic feet of gas equivalent;
- (q) "NI 14-101" means National Instrument 14-101 *Definitions*;
- (r) ~~repealed December 30, 2005;~~
(r.1) "NI 51-102" means National Instrument 51-102 Continuous Disclosure Obligations;
- (s) "oil and gas activities"
(i) include:
(A) the search for *crude oil* or *natural gas* in their natural states and original locations;
(B) the acquisition of property rights or *properties* for the purpose of further exploring for or removing *oil* or *gas* from *reservoirs* on those *properties*;

- (C) the construction, drilling and *production* activities necessary to retrieve *oil* and *gas* from their natural *reservoirs*, and the acquisition, construction, installation and maintenance of *field* gathering and storage systems including lifting the *oil* and *gas* to the surface and gathering, treating, *field* processing and *field* storage; and
- (D) the extraction of hydrocarbons from oil sands, shale, coal or other non-conventional sources and activities similar to those referred to in clauses (A), (B) and (C) undertaken with a view to such extraction; but
- (ii) do not include:
 - (A) transporting, refining or marketing *oil* or *gas*;
 - (B) activities relating to the extraction of natural resources other than *oil* and *gas* and their by-products; or
 - (C) the extraction of geothermal steam or of hydrocarbons as a by-product of the extraction of geothermal steam or associated geothermal resources;
- (t) "*preparation date*", in respect of written disclosure, means the most recent date to which information relating to the period ending on the *effective date* was considered in the preparation of the disclosure;
- (u) "*production group*" means one of the following together, in each case, with associated by-products:
 - (i) light and medium *crude oil* (combined);
 - (ii) *heavy oil*;
 - (iii) *associated gas* and *non-associated gas* (combined); and
 - (iv) *bitumen*, *synthetic oil* or other products from non-conventional *oil and gas activities*.
- (v) "*product type*" means one of the following:
 - (i) in respect of conventional *oil and gas activities*:
 - (A) light and medium *crude oil* (combined);
 - (B) *heavy oil*;
 - (C) *natural gas* excluding *natural gas liquids*; or
 - (D) *natural gas liquids*; and
 - (ii) in respect of non-conventional *oil and gas activities*:
 - (A) *synthetic oil*;
 - (B) *bitumen*;
 - (C) coal bed methane; or
 - (D) hydrates;:
 - (E) shale oil; or**
 - (F) shale gas;**
- (w) "*professional organization*" means a self-regulatory organization of engineers, geologists, other geoscientists or other professionals whose professional practice includes *reserves evaluations* or *reserves audits*, that:
 - (i) admits members primarily on the basis of their educational qualifications;

- (ii) requires its members to comply with the professional standards of competence and ethics prescribed by the organization that are relevant to the estimation, *evaluation*, *review* or *audit* of *reserves data*;
- (iii) has disciplinary powers, including the power to suspend or expel a member; and
- (iv) is either:
 - (A) given authority or recognition by statute in a Canadian jurisdiction; or
 - (B) accepted for this purpose by the *securities regulatory authority* or the *regulator*;
- (x) "*qualified reserves auditor*" means an individual who:
 - (i) in respect of particular *reserves data*, *resources* or related information, possesses professional qualifications and experience appropriate for the estimation, *evaluation*, *review* and *audit* of the *reserves data*, *resources* and related information; and
 - (ii) is a member in good standing of a *professional organization*;
- (y) "*qualified reserves evaluator*" means an individual who:
 - (i) in respect of particular *reserves data*, *resources* or related information, possesses professional qualifications and experience appropriate for the estimation, *evaluation* and *review* of the *reserves data*, *resources* and related information; and
 - (ii) is a member in good standing of a *professional organization*;
- (z) "*qualified reserves evaluator or auditor*" means a *qualified reserves auditor* or a *qualified reserves evaluator*;
- ~~(aa) "*reserves data*" means the following estimates, as at the last day of the *reporting issuer's* most recent financial year:
 - ~~(i) *proved reserves* and related *future net revenue* estimated:
 - ~~(A) using *constant prices and costs* as at the last day of that financial year; and~~
 - ~~(B) using *forecast prices and costs*; and~~~~~~
- (z.1) "*reserves*" means *proved, probable or possible reserves*;**
- (aa) (ii) "*reserves data*" means an estimate of *proved reserves and probable reserves* and related *future net revenue*, estimated using *forecast prices and costs*; and**
- (bb) "*supporting filing*" means a document filed by a *reporting issuer* with a *securities regulatory authority*.

1.2 COGE Handbook Definitions

- (1) Terms used in this *Instrument* but not defined in this *Instrument*, *NI 14-101* or the securities statute in the *jurisdiction*, and defined or interpreted in the *COGE Handbook*, have the meaning or interpretation ascribed to those terms in the *COGE Handbook*.
- (2) In the event of a conflict or inconsistency between the definition of a term in this *Instrument*, *NI 14-101* or the securities statute in the *jurisdiction* and the meaning ascribed to the term in the *COGE Handbook*, the definition in this *Instrument*, *NI 14-101* or the securities statute in the *jurisdiction*, as the case may be, shall will apply.

1.3 Applies to Reporting Issuers Only - This *Instrument* applies only to *reporting issuers* engaged, directly or indirectly, in *oil and gas activities*.

1.4 Materiality Standard

- (1) This *Instrument* applies only in respect of information that is *material* in respect of a *reporting issuer*.

- (2) For the purpose of subsection (1), information is *material* in respect of a *reporting issuer* if it would be likely to influence a decision by a reasonable investor to buy, hold or sell a security of the *reporting issuer*.

PART 2 ANNUAL FILING REQUIREMENTS

2.1 Reserves Data and Other Oil and Gas Information - A *reporting issuer* ~~shall~~**must**, not later than the date on which it is required by *securities legislation* to file audited financial statements for its most recent financial year, file with the *securities regulatory authority* the following:

1. **Statement of Reserves Data and Other Information** - a statement of the *reserves data* and other information specified in *Form 51-101F1*, as at the last day of the *reporting issuer's* most recent financial year and for the financial year then ended;
2. **Report of Independent Qualified Reserves Evaluator or Auditor** - a report in accordance with *Form 51-101F2* that is:
 - (a) included in, or filed concurrently with, the document filed under item 1; and
 - (b) executed by one or more *qualified reserves evaluators or auditors* each of whom is *independent of the reporting issuer*, who ~~shall~~**must** in the aggregate have:
 - (i) *evaluated* or audited at least 75 percent of the *future net revenue* (calculated using a discount rate of 10 percent) attributable to *proved plus probable reserves*, as reported in the statement filed or to be filed under item 1; and
 - (ii) *reviewed* the balance of such *future net revenue*; and
3. **Report of Management and Directors** – a report in accordance with *Form 51-101F3* that
 - (a) refers to the information filed or to be filed under items 1 and 2;
 - (b) confirms the responsibility of management of the *reporting issuer* for the content and filing of the statement referred to in item 1 and for the filing of the report referred to in item 2;
 - (c) confirms the role of the board of directors in connection with the information referred to in paragraph (b);
 - (d) is contained in, or filed concurrently with, the statement filed under item 1; and
 - (e) is executed by two senior officers and two directors of the *reporting issuer*.

~~as amended September 10, 2005~~

2.2 News Release Notice to Announce Filing - A *reporting issuer* ~~shall~~**must**, concurrently with filing a statement and reports under section 2.1, disseminate ~~a news release~~**and file with the securities regulatory authority a notice** announcing that filing and indicating where a copy of the filed information can be found for viewing by electronic means.

2.3 Inclusion in Annual Information Form - The requirements of section 2.1 may be satisfied by including the information specified in section 2.1 in an *annual information form* filed within the time specified in section 2.1.

2.4 Reservation in Report of Qualified Reserves Evaluator or Auditor

- (1) If a *qualified reserves evaluator or auditor* cannot report on *reserves data* without *reservation*, the *reporting issuer* ~~shall~~**must** ensure that the report of the *qualified reserves evaluator or auditor* prepared for the purpose of item 2 of section 2.1 sets out the cause of the *reservation* and the effect, if known to the *qualified reserves evaluator or auditor*, on the *reserves data*.
- (2) A report containing a *reservation*, the cause of which can be removed by the *reporting issuer*, does not satisfy the requirements of item 2 of section 2.1.

PART 3 RESPONSIBILITIES OF REPORTING ISSUERS AND DIRECTORS

3.1 Interpretation - A reference to a board of directors in this Part means, for a *reporting issuer* that does not have a board of directors, those individuals whose authority and duties in respect of that *reporting issuer* are similar to those of a board of directors.

3.2 Reporting Issuer to Appoint Independent Qualified Reserves Evaluator or Auditor - A *reporting issuer* shall must appoint one or more *qualified reserves evaluators or auditors*, each of whom is *independent* of the *reporting issuer*, to report to the board of directors of the *reporting issuer* on its *reserves data*.

3.3 Reporting Issuer to Make Information Available to Qualified Reserves Evaluator or Auditor - A *reporting issuer* shall must make available to the *qualified reserves evaluators or auditors* that it appoints under section 3.2 all information reasonably necessary to enable the *qualified reserves evaluators or auditors* to provide a report that will satisfy the applicable requirements of this Instrument.

3.4 Certain Responsibilities of Board of Directors - The board of directors of a *reporting issuer* shall must

- (a) review, with reasonable frequency, the *reporting issuer's* procedures relating to the disclosure of information with respect to *oil and gas activities*, including its procedures for complying with the disclosure requirements and restrictions of this *Instrument*;
- (b) review each appointment under section 3.2 and, in the case of any proposed change in such appointment, determine the reasons for the proposal and whether there have been disputes between the appointed *qualified reserves evaluator or auditor* and management of the *reporting issuer*;
- (c) review, with reasonable frequency, the *reporting issuer's* procedures for providing information to the *qualified reserves evaluators or auditors* who report on *reserves data* for the purposes of this *Instrument*;
- (d) before approving the filing of *reserves data* and the report of the *qualified reserves evaluators or auditors* thereon referred to in section 2.1, meet with management and each *qualified reserves evaluator or auditor* appointed under section 3.2, to
 - (i) determine whether any restrictions affect the ability of the *qualified reserves evaluator or auditor* to report on *reserves data* without *reservation*; and
 - (ii) review the *reserves data* and the report of the *qualified reserves evaluator or auditor* thereon; and
- (e) review and approve
 - (i) the content and filing, under section 2.1, of the statement referred to in item 1 of section 2.1;
 - (ii) the filing, under section 2.1, of the report referred to in item 2 of section 2.1; and
 - (iii) the content and filing, under section 2.1, of the report referred to in item 3 of section 2.1.

3.5 Reserves Committee

- (1) The board of directors of a *reporting issuer* may, subject to subsection (2), delegate the responsibilities set out in section 3.4 to a committee of the board of directors, provided that a majority of the members of the committee
 - (a) are individuals who are not and have not been, during the preceding 12 months:
 - (i) an officer or employee of the *reporting issuer* or of an affiliate of the *reporting issuer*;
 - (ii) a person who beneficially owns 10 percent or more of the outstanding voting securities of the *reporting issuer*; or
 - (iii) a relative of a person referred to in subparagraph (a)(i) or (ii), residing in the same home as that person; and
 - (b) are free from any business or other relationship which could reasonably be seen to interfere with the exercise of their independent judgement.

- (2) Despite subsection (1), a board of directors of a *reporting issuer* shall **must** not delegate its responsibility under paragraph 3.4(e) to approve the content or the filing of information.
- (3) A board of directors that has delegated responsibility to a committee pursuant to subsection (1) shall **must** solicit the recommendation of that committee as to whether to approve the content and filing of information for the purpose of paragraph 3.4(e).

3.6 repealed-September 19, 2005

PART 4 MEASUREMENT

4.1 Accounting Methods - A *reporting issuer* engaged in *oil and gas activities* that discloses financial statements prepared in accordance with *Canadian GAAP* shall **must** use

- (a) the full cost method of accounting, applying *CICA Accounting Guideline 516*; or
- (b) the successful efforts method of accounting, applying *FAS 19*.

~~**4.2 Requirements for Disclosed Reserves Data**~~

~~(1) A *reporting issuer* shall ensure that estimates of *reserves* or *future net revenue* contained in a document filed with the *securities regulatory authority* under this *Instrument* satisfy the following requirements:~~

~~(a) the estimates shall be~~

~~(i) prepared or audited by a *qualified reserves evaluator or auditor*;~~

~~(ii) prepared or *audited* in accordance with the *COGE Handbook*; and~~

~~(iii) estimated assuming that development of each *property* in respect of which the estimate is made will occur, without regard to the likely availability to the *reporting issuer* of funding required for that development;~~

~~(b) for the purpose of determining whether *reserves* should be attributed to a particular *undrilled property*, *reasonably estimated future abandonment and reclamation costs* related to the *property* shall be taken into account; and~~

~~(c) aggregate *future net revenue* shall be estimated deducting~~

~~(i) *reasonably estimated future well abandonment costs*; and~~

~~(ii) *future income tax expenses* (unless otherwise specified in this *Instrument*, *Form 51-101F1* or *Form 51-101F2*).~~

4.2 (2)-Consistency in Dates - The date or period with respect to which the effects of an event or transaction are recorded in a *reporting issuer's* annual financial statements shall **must** be the same as the date or period with respect to which they are first reflected in the *reporting issuer's* annual *reserves data* disclosure under Part 2.

PART 5 REQUIREMENTS APPLICABLE TO ALL DISCLOSURE

5.1 Application of Part 5 - This Part applies to disclosure made by or on behalf of a *reporting issuer*

- (a) to the public;
- (b) in any document filed with a *securities regulatory authority*; or
- (c) in other circumstances in which, at the time of making the disclosure, the *reporting issuer* knows, or ought reasonably to know, that the disclosure is or will become available to the public.

- 5.2 **Consistency with Disclosure of Reserves Data and Other Information** - If a reporting issuer makes disclosure of reserves or other information of a type that is required to be included in a statement filed with a securities regulatory authority under item 1 of section 2.1, the information shall be specified in Form 51-101F1, the reporting issuer must ensure that the disclosure satisfies the following requirements:
- (a) prepared in accordance with Part 4; and estimates of reserves or future net revenue must
 - (i) disclose the effective date of the estimate;
 - (ii) have been prepared or audited by a qualified reserves evaluator or auditor;
 - (iii) have been prepared or audited in accordance with the COGE Handbook;
 - (iv) have been estimated assuming that development of each property in respect of which the estimate is made will occur, without regard to the likely availability to the reporting issuer of funding required for that development; and
 - (v) in the case of estimates of possible reserves or related future net revenue disclosed in writing, also include cautionary language proximate to the estimate to the following effect:

“Possible reserves are those additional reserves that are less certain to be recovered than probable reserves. There is only a 10% probability that the quantities actually recovered will equal or exceed the sum of proved plus probable plus possible reserves.”
 - (b) for the purpose of determining whether reserves should be attributed to a particular undrilled property, reasonably estimated future abandonment and reclamation costs related to the property must have been taken into account;
 - (c) in disclosing aggregate future net revenue it must comply with the requirements for the determination of future net revenue specified in Form 51-101F1; and
 - (d) ~~(b)~~ the disclosure must be consistent with the corresponding information, if any, contained in the statement most recently filed by the reporting issuer with the securities regulatory authority under item 1 of section 2.1, except to the extent that such statement has been supplemented or superseded by a report of a material change³ filed by the reporting issuer with the securities regulatory authority.
- 5.3 **Reserves and Resources Classification** - Disclosure of reserves or resources shall be consistent with must apply the reserves and resources terminology and categories set out in the COGE Handbook and must relate to the most specific category of reserves or resources in which the reserves or resources can be classified.
- 5.4 **Oil and Gas Reserves and Sales** - Disclosure of reserves or of sales of oil, gas or associated by-products shall must be made only in respect of marketable quantities, reflecting the quantities and prices for the product in the condition (upgraded or not upgraded, processed or unprocessed) in which it is to be, or was, sold.
- 5.5 **Natural Gas By-Products** - Disclosure concerning natural gas by-products (including natural gas liquids and sulphur) shall must be made in respect only of volumes that have been or are to be recovered prior to the point at which marketable gas is measured.
- 5.6 **Future Net Revenue Not Fair Market Value** - Disclosure of an estimate of future net revenue, whether calculated without discount or using a discount rate, shall must include a statement to the effect that the estimated values disclosed do not represent fair market value.
- 5.7 **Consent of Qualified Reserves Evaluator or Auditor**
- (1) A reporting issuer shall must not disclose a report referred to in item 2 of section 2.1 that has been delivered to the board of directors of the reporting issuer by a qualified reserves evaluator or auditor pursuant to an appointment under section 3.2, or disclose information derived from the report or the identity of the qualified reserves evaluator or auditor, without the written consent of that qualified reserves evaluator or auditor.

³ "Material change" has the meaning ascribed to the term under securities legislation of the applicable jurisdiction.

- (2) Subsection (1) does not apply to
- (a) the filing of that report by a *reporting issuer* under section 2.1;
 - (b) the use of or reference to that report in another document filed by the *reporting issuer* under section 2.1; or
 - (c) the identification of the report or of the *qualified reserves evaluator or auditor* in a ~~news release~~ notice referred to in section 2.2.

5.8 Disclosure of Less Than All Reserves - If a *reporting issuer* that has more than one *property* makes written disclosure of any *reserves* attributable to a particular *property*

- (a) the disclosure ~~shall~~ must include a cautionary statement to the effect that
"The estimates of reserves and future net revenue for individual properties may not reflect the same confidence level as estimates of reserves and future net revenue for all properties, due to the effects of aggregation"; and
- (b) the document containing the disclosure of any *reserves* attributable to one *property* ~~shall~~ must also disclose total *reserves* of the same classification for all *properties* of the *reporting issuer* in the same country (or, if appropriate and not misleading, in the same *foreign geographic area*).

5.9 Disclosure Concerning ~~Prospects~~ — of Resources

- (1) If a *reporting issuer* discloses *anticipated results* from a ~~prospect~~ resources which are not currently classified as reserves, the *reporting issuer* ~~shall~~ must also disclose in writing, in the same document or in a *supporting filing*, in respect of the ~~prospect~~;
- (a) — the location and basin name;
 - (a) (b) the *reporting issuer's gross and net's* interest in the *property*, expressed in units of area (acres or hectares); resources;
 - (c) — in the case of undeveloped *property* in which the *reporting issuer* holds a leasehold interest, the expiry date of that interest;
 - (d) — the name, geologic age and lithology of the target zone;
 - (e) — the distance to the nearest analogous commercial production;
 - (b) the location of the resources;
 - (c) (f) the *product types* reasonably expected;
 - (d) (g) the range of pool or *field* sizes;
 - (h) — the depth of the target zone;
 - (i) — the estimated cost to drill and test a well to the target depth;
 - (j) — reasonably expected drilling commencement and completion dates;
 - (k) — the anticipated prices to be received for each *product type* reasonably expected;
 - (l) — reasonably expected marketing and transportation arrangements;
 - (m) — the identity and relevant experience of the operator;
 - (n) — risks and the probability of success; and level of uncertainty associated with recovery of the resources; and
 - (o) — the applicable information specified in section 5.10.

5.10 — Estimates of Fair Value of an Unproved Property, Prospect or Resource

- (e) in the case of *unproved property*, if its value is disclosed,

 - (i) the basis of the calculation of its value; and
 - (ii) whether the value was prepared by an *independent party*.
- (2) If disclosure referred to in subsection (1) includes an estimate of a quantity of *resources* in which the *reporting issuer* has an interest or intends to acquire an interest, or an estimated value attributable to an estimated quantity, the estimate must

 - (a) have been prepared or audited by a *qualified reserves evaluator or auditor*;
 - (b) relate to the most specific category of *resources* in which the *resources* can be classified, as set out in the *COGE Handbook*, and must identify what portion of the estimate is attributable to each category; and
 - (c) be accompanied by the following information:

 - (i) a definition of the *resources* category used for the estimate;
 - (ii) the effective date of the estimate;
 - (iii) (1) If a *reporting issuer* discloses in writing an estimate of the fair value of an *unproved property, prospect or resource*, or discloses expected results from a *prospect*, the disclosure shall include all the significant positive and negative factors relevant to the estimate or expectation;
- ~~(2) — If a *reporting issuer* discloses in writing an estimate of the fair value of an *unproved property, prospect or resource*~~

 - ~~(a) — in the case of an estimate of the fair value of an *unproved property*, except as provided in paragraph (b), the estimate shall be based on the first applicable item listed below, and that item shall be described as the basis of the estimate in the document containing the disclosure or in a *supporting filing*:~~

 - ~~1. — the acquisition cost to the *reporting issuer*, provided that there have been no material changes in the *unproved property*, the surrounding *properties*, or the general *oil and gas* economic climate since acquisition;~~
 - ~~2. — recent sales by others of interests in the same *unproved property*;~~
 - ~~3. — terms and conditions, expressed in monetary terms, of recent farm in agreements related to the *unproved property*;~~
 - ~~4. — terms and conditions, expressed in monetary terms, of recent work commitments related to the *unproved property*;~~
 - ~~5. — recent sales of similar *properties* in the same general area;~~
 - ~~(b) — in the case of an estimate of fair value to which none of the items listed in paragraph (a) applies~~

 - ~~(i) — the estimate shall be prepared or accepted by a professional valuator (who is not a "related party" of the *reporting issuer* within the meaning of the term as used in the *CICA Handbook*) applying valuation standards established by the professional body of which the valuator is a member and from which the valuator derives professional standing;~~
 - ~~(ii) — the estimate shall consist of at least three values that reflect a range of reasonable likelihoods (the low value being conservative, the middle value being the median and the high value being optimistic) reflecting courses of action expected to be followed by the *reporting issuer*;~~

- (iii) the estimate, and the identities of the professional valuator and of the professional body referred to in subparagraph (i), shall be set out in the document containing the disclosure or in a *supporting filing*; and
 - (iv) the *reporting issuer* shall obtain from the professional valuator referred to in subparagraph (i) (i) estimated percentage probability that the issuer will
 - (A) discover hydrocarbons in sufficient quantity for them to be tested to the surface, in the case of undiscovered resources or a subcategory of undiscovered resources; or
 - (B) commercially extract the volume disclosed, in the case of discovered resources or a subcategory of discovered resources other than reserves;
 - (v) in respect of contingent resources, the specific contingencies which prevent the classification of the resources as reserves; and
 - (vi) cautionary language proximate to the estimate to the effect that:
 - (A) a report on the estimate that does not contain in the case of discovered resources or a subcategory of discovered resources other than reserves:
 - (i) a disclaimer that materially detracts from the usefulness of the estimate; or
 - (ii) a statement that the report may not be relied on; and
 - “There is no certainty that it will be economically viable or technically feasible to produce any portion of the resources.”; or
 - (B) the professional valuator's written consent to the disclosure of the report by the *reporting issuer* to the public in the case of undiscovered resources or a subcategory of undiscovered resources:
 - “There is no certainty that any portion of the resources will be discovered. If discovered, there is no certainty that it will be economically viable or technically feasible to produce any portion of the resources.”
- (3) Paragraphs 5.9(1)(d) and (e) and subparagraphs 5.9(2)(c)(iii), (iv) and (v) do not apply if
- (a) the reporting issuer includes in the written disclosure a reference to the title and date of a previously filed document that complies with those requirements; and
 - (b) the resources in the written disclosure, taking into account the specific properties and interests reflected in the resources estimate or other anticipated result, are materially the same resources addressed in the previously filed document.

5.10 Analogous Information

- (1) Sections 5.2, 5.3 and 5.9 do not apply to the disclosure of analogous information provided that the reporting issuer discloses the following:
 - (a) the source and date of the analogous information;
 - (b) whether the source of the analogous information was independent;
 - (c) if the reporting issuer is unable to confirm that the analogous information was prepared by a qualified reserves evaluator or auditor or in accordance with the COGE Handbook, cautionary language to that effect proximate to the disclosure of the analogous information; and
 - (d) the relevance of the analogous information to the reporting issuer's oil and gas activities.

~~(2) If a reporting issuer discloses information that is an anticipated result, an estimate of a quantity of reserves or resources, or an estimate of value attributable to an estimated quantity of reserves or resources for an area in which it has an interest or intends to acquire an interest that is based on an extrapolation from analogous information sections 5.2, 5.3 and 5.9 will apply to the disclosure of the information.~~

5.11 **Net Asset Value and Net Asset Value per Share** - Written disclosure of net asset value or net asset value per share ~~shall~~**must** include a description of the methods used to value assets and liabilities and the number of shares used in the calculation.

5.12 **Reserve Replacement** - Written disclosure concerning *reserve* replacement ~~shall~~**must** include an explanation of the method of calculation applied.

5.13 **Netbacks** - Written disclosure of a netback **must**

~~(a) shall include separate netbacks for each product type by country (or, if appropriate and not misleading, by foreign geographic area);~~

~~(a)~~ (b) shall reflect netbacks calculated by subtracting royalties and *operating costs* from revenues; and

~~(b)~~ (c) shall state the method of calculation.

5.14 **BOEs and McfGEs** - If written disclosure includes information expressed in *BOEs*, *McfGEs* or other units of equivalency between *oil* and *gas*

(a) the information ~~shall~~**must** be presented

(i) in the case of *BOEs*, using *BOEs* derived by converting *gas* to *oil* in the ratio of six thousand cubic feet of *gas* to one barrel of *oil* (6 Mcf:1 bbl);

(ii) in the case of *McfGEs*, using *McfGEs* derived by converting *oil* to *gas* in the ratio of one barrel of *oil* to six thousand cubic feet of *gas* (1 bbl:6 Mcf); and

(iii) with the conversion ratio stated;

(b) if the information is also presented using *BOEs* or *McfGEs* derived using a conversion ratio other than a ratio specified in paragraph (a), the disclosure ~~shall~~**must** state that other conversion ratio and explain why it has been chosen;

(c) if the information is presented using a unit of equivalency other than *BOEs* or *McfGEs*, the disclosure ~~shall~~**must** identify the unit, state the conversion ratio used and explain why it has been chosen; and

(d) the disclosure ~~shall~~**must** include a cautionary statement to the effect that:

"*BOEs* [or '*McfGEs*' or other applicable units of equivalency] may be misleading, particularly if used in isolation. A *BOE* conversion ratio of 6 *Mcf*: 1 bbl [or '*An McfGE* conversion ratio of 1 *bbl*: 6 *Mcf*'] is based on an energy equivalency conversion method primarily applicable at the burner tip and does not represent a value equivalency at the wellhead".

5.15 **Finding and Development Costs** - If written disclosure is made of finding and *development costs*;

(a) those costs ~~shall~~**must** be calculated using the following two methods, in each case after eliminating the effects of acquisitions and dispositions:

Method 1:
$$\frac{a+b+c}{x}$$

Method 2:
$$\frac{a+b+d}{y}$$

- where
- a = *exploration costs* incurred in the most recent financial year
 - b = *development costs* incurred in the most recent financial year
 - c = the change during the most recent financial year in estimated future *development costs* relating to *proved reserves*
 - d = the change during the most recent financial year in estimated future *development costs* relating to *proved reserves* and *probable reserves*
 - x = additions to *proved reserves* during the most recent financial year, expressed in *BOEs* or other unit of equivalency
 - y = additions to *proved reserves* and *probable reserves* during the most recent financial year, expressed in *BOEs* or other unit of equivalency

- (b) the disclosure ~~shall~~**must** include
- (i) the results of both methods of calculation under paragraph (a) and a description of those methods;
 - (ii) if the disclosure also includes a result derived using any other method of calculation, a description of that method and the reason for its use;
 - (iii) for each result, comparative information for the most recent financial year, the second most recent financial year and the averages for the three most recent financial years;
 - (iv) a cautionary statement to the effect that:

"The aggregate of the exploration and development costs incurred in the most recent financial year and the change during that year in estimated future development costs generally will not reflect total finding and development costs related to reserves additions for that year"; and
 - (v) the cautionary statement required under paragraph 5.14(d).

PART 6 MATERIAL CHANGE DISCLOSURE

6.1 Material Change⁴ from Information Filed under Part 2

- (1) This Part applies in respect of a material change that, had it occurred on or before the *effective date* of information included in the statement most recently filed by a *reporting issuer* under item 1 of section 2.1, would have resulted in a significant change in the information contained in the statement.
- (2) In addition to any other requirement of *securities legislation* governing disclosure of a material change, disclosure of a material change referred to in subsection (1) ~~shall~~**must discuss the reporting issuer's reasonable expectation of how the material change has affected its reserves data or other information.**
 - (a) ~~identify the statement filed under Part 2 that contains the original information referred to in subsection (1); and~~
 - (b) ~~discuss the reporting issuer's reasonable expectation of how the material change, had it occurred on or before the effective date referred to in subsection (1), would have affected the reserves data or other information contained in the document identified under paragraph (a).~~

PART 7 OTHER INFORMATION

- 7.1 **Information to be Furnished on Request** - A *reporting issuer* ~~shall~~**must**, on the request of the *regulator*, deliver additional information with respect to the content of a document filed under this *Instrument*.

PART 8 EXEMPTIONS

8.1 Authority to Grant Exemption

- (1) The *regulator* or the *securities regulatory authority* may grant an exemption from this *Instrument*, in whole or in part, subject to such conditions or restrictions as may be imposed in the exemption.
- (2) Despite subsection (1), in Ontario only the *regulator* may grant an exemption.

⁴ In this Part, "material change" has the meaning ascribed to the term under *securities legislation* of the applicable *jurisdiction*.

8.2 Exemption for Certain Exchangeable Security Issuers

- (1) An exchangeable security issuer, as defined in subsection 13.3(1) of NI 51-102, is exempt from this Instrument provided that all of the requirements of subsection 13.3(2) of NI 51-102 are satisfied;
- (2) For the purposes of subsection (1), the reference to “continuous disclosure documents” in clause 13.3(2)(d)(ii)(A) of NI 51-102 includes documents filed in accordance with this Instrument.

PART 9 INSTRUMENT IN FORCE

9.1 **Coming Into Force** - This *Instrument* comes into force on September 30, 2003.

9.2 **Transition** - Despite section 9.1, this *Instrument* does not apply to a *reporting issuer* until the earlier of:

- (a) the date by which the *reporting issuer* is required under *securities legislation* to file audited annual financial statements for its financial year that includes or ends on December 31, 2003; and
- (b) the first date on which the *reporting issuer* files with the *securities regulatory authority* the statement referred to in item 1 of section 2.1.

FORM 51-101F1
STATEMENT OF RESERVES DATA
AND OTHER OIL AND GAS INFORMATION

TABLE OF CONTENTS

GENERAL INSTRUCTIONS

PART 1 DATE OF STATEMENT

Item 1.1 Relevant Dates

PART 2 DISCLOSURE OF RESERVES DATA

Item 2.1 *Reserves Data* (~~Constant~~**Forecast** Prices and Costs)

Item 2.2 **Supplemental Disclosure of Reserves Data** (~~Forecast~~**Constant** Prices and Costs)

Item 2.3 *Reserves Disclosure Varies with Accounting*

Item 2.4 *Future Net Revenue Disclosure Varies with Accounting*

PART 3 PRICING ASSUMPTIONS

Item 3.1 Constant Prices Used in **Supplemental** Estimates

Item 3.2 Forecast Prices Used in Estimates

PART 4 ~~RECONCILIATIONS~~ **RECONCILIATION** OF CHANGES IN RESERVES AND ~~FUTURE NET REVENUE~~

Item 4.1 *Reserves Reconciliation*

~~Item 4.2 *Future Net Revenue Reconciliation*~~

PART 5 ADDITIONAL INFORMATION RELATING TO RESERVES DATA

Item 5.1 *Undeveloped Reserves*

Item 5.2 Significant Factors or Uncertainties

Item 5.3 *Future Development Costs*

PART 6 OTHER OIL AND GAS INFORMATION

Item 6.1 *Oil and Gas Properties* and Wells

Item 6.2 *Properties With No Attributed Reserves*

Item 6.3 Forward Contracts

Item 6.4 Additional Information Concerning Abandonment and Reclamation Costs

Item 6.5 Tax Horizon

Item 6.6 Costs Incurred

Item 6.7 Exploration and Development Activities

Item 6.8 *Production Estimates*

Item 6.9 *Production History*

**FORM 51-101F1
STATEMENT OF RESERVES DATA
AND OTHER OIL AND GAS INFORMATION**

This is the form referred to in item 1 of section 2.1 of National Instrument 51-101 *Standards of Disclosure for Oil and Gas Activities* ("NI 51-101").

GENERAL INSTRUCTIONS

- (1) *Terms for which a meaning is given in NI 51-101 have the same meaning in this Form 51-101F1¹.*
- (2) *Unless otherwise specified in this Form 51-101F1, information under item 1 of section 2.1 of NI 51-101 shall be provided as at the last day of the reporting issuer's most recent financial year or for its financial year then ended.*
- (3) *It is not necessary to include the headings or numbering, or to follow the ordering of Items, in this Form 51-101F1. Information may be provided in tables.*
- (4) *To the extent that any Item or any component of an Item specified in this Form 51-101F1 does not apply to a reporting issuer and its activities and operations, or is not material, no reference need be made to that Item or component. It is not necessary to state that such an Item or component is "not applicable" or "not material". Materiality is discussed in NI 51-101 and Companion Policy 51-101CP.*
- (5) *This Form 51-101F1 sets out minimum requirements. A reporting issuer may provide additional information not required in this Form 51-101F1 provided that it is not misleading and not inconsistent with the requirements of NI 51-101, and provided that material information required to be disclosed is not omitted.*
- (6) *A reporting issuer may satisfy the requirement of this Form 51-101F1 for disclosure of information "by country" by instead providing information by foreign geographic area in respect of countries outside North America as may be appropriate for meaningful disclosure in the circumstances.*

PART 1 DATE OF STATEMENT

Item 1.1 Relevant Dates

1. Date the statement.
2. Disclose the *effective date* of the information being provided.
3. Disclose the *preparation date* of the information being provided.

INSTRUCTIONS

- (1) *For the purpose of Part 2 of NI 51-101, and consistent with the definition of reserves data and General Instruction (2) of this Form 51-101F1, the **effective date** to be disclosed under section 2 of Item 1.1 is the last day of the reporting issuer's most recent financial year. It is the date of the balance sheet for the reporting issuer's most recent financial year (for example, "as at December 31, 20xx") and the ending date of the reporting issuer's most recent annual statement of income (for example, "for the year ended December 31, 20xx").*
- (2) *The same **effective date** applies to reserves of each category reported and to related **future net revenue**. References to a change in an item of information, such as changes in **production** or a change in **reserves**, mean changes in respect of that item during the year ended on the **effective date**.*
- (3) *The **preparation date**, in respect of written disclosure, means the most recent date to which information relating to the period ending on the **effective date** was considered in the preparation of the disclosure. The **preparation date** is a date subsequent to the **effective date** because it takes time after the end of the financial year to assemble the information for that completed year that is needed to prepare the required disclosure as at the end of the financial year.*

¹ For the convenience of readers, Appendix 1 to Companion Policy 51-101CP sets out the meanings of terms that are printed in italics (or, in the instructions, in bold type) in this Form 51-101F1 or in NI 51-101, Form 51-101F2, Form 51-101F3 or the Companion Policy.

- (4) Because of the interrelationship between certain of the **reporting issuer's reserves data** and other information referred to in this **Form 51-101F1** and certain of the information included in its financial statements, the **reporting issuer** should ensure that its financial auditor and its **qualified reserves evaluators or auditors** are kept apprised of relevant events and transactions, and should facilitate communication between them.
- (5) If the **reporting issuer** provides information as at a date more recent than the **effective date**, in addition to the information required as at the **effective date**, also disclose the date as at which that additional information is provided. The provision of such additional information does not relieve the **reporting issuer** of the obligation to provide information as at the **effective date**.

PART 2 DISCLOSURE OF RESERVES DATA

Item 2.1 Reserves Data (~~Constant Prices and Costs~~)

1. ~~Breakdown of Proved Reserves (Constant Case)~~ — Disclose, by country and in the aggregate, ~~reserves, gross and net, estimated using constant prices and costs, for each product type, in the following categories:~~
- ~~(a) — proved developed producing reserves;~~
 - ~~(b) — proved developed non-producing reserves;~~
 - ~~(c) — proved undeveloped reserves; and~~
 - ~~(d) — proved reserves (in total).~~
2. ~~Net Present Value of Future Net Revenue (Constant Case)~~ — Disclose, by country and in the aggregate, the net present value of ~~future net revenue~~ attributable to the ~~reserves~~ categories referred to in section 1 of this Item, estimated using ~~constant prices and costs~~, before and after deducting ~~future income tax expenses~~, calculated without discount and using a discount rate of 10 percent.
3. ~~Additional Information Concerning Future Net Revenue (Constant Case)~~
- ~~(a) — This section 3 applies to future net revenue attributable to proved reserves (in total) estimated using constant prices and costs.~~
 - ~~(b) — Disclose, by country and in the aggregate, the following elements of future net revenue estimated using constant prices and costs and calculated without discount:~~
 - ~~(i) — revenue;~~
 - ~~(ii) — royalties;~~
 - ~~(iii) — operating costs;~~
 - ~~(iv) — development costs;~~
 - ~~(v) — abandonment and reclamation costs;~~
 - ~~(vi) — future net revenue before deducting future income tax expenses;~~
 - ~~(vii) — future income tax expenses; and~~
 - ~~(viii) — future net revenue after deducting future income tax expenses.~~
 - ~~(c) — Disclose, by production group, the net present value of future net revenue (before deducting future income tax expenses) estimated using constant prices and costs and calculated using a discount rate of 10 percent.~~

Item 2.2 ~~Reserves Data (Forecast Prices and Costs)~~

1. ~~Breakdown of Reserves (Forecast Case)~~ — Disclose, by country and in the aggregate, ~~reserves, gross and net, estimated using forecast prices and costs, for each product type, in the following categories:~~

- (a) *proved developed producing reserves*;
 - (b) *proved developed non-producing reserves*;
 - (c) *proved undeveloped reserves*;
 - (d) *proved reserves* (in total);
 - (e) *probable reserves* (in total);
 - (f) *proved plus probable reserves* (in total); and
 - (g) if the *reporting issuer* discloses an estimate of *possible reserves* in the statement:
 - (i) *possible reserves* (in total); and
 - (ii) *proved plus probable plus possible reserves* (in total).
2. Net Present Value of Future Net Revenue (Forecast Case) – Disclose, by country and in the aggregate, the net present value of *future net revenue* attributable to the *reserves* categories referred to in section 1 of this Item, estimated using *forecast prices and costs*, before and after deducting *future income tax expenses*, calculated without discount and using discount rates of 5 percent, 10 percent, 15 percent and 20 percent. **Also disclose the same information on a unit value basis (e.g., \$/Mcf or \$/bbl using net reserves) using a discount rate of 10 percent and calculated before deducting future income tax expenses. This unit value disclosure requirement may be satisfied by including the unit value disclosure for each category of proved reserves and for probable reserves in the disclosure referred to in paragraph 3(c) of item 2.1.**
3. Additional Information Concerning Future Net Revenue (Forecast Case)
- (a) This section 3 applies to *future net revenue* attributable to each of the following *reserves* categories estimated using *forecast prices and costs*:
 - (i) *proved reserves* (in total);
 - (ii) *proved plus probable reserves* (in total); and
 - (iii) if paragraph 1(g) of this Item applies, *proved plus probable plus possible reserves* (in total).
 - (b) Disclose, by country and in the aggregate, the following elements of *future net revenue* estimated using *forecast prices and costs* and calculated without discount:
 - (i) revenue;
 - (ii) royalties;
 - (iii) *operating costs*;
 - (iv) *development costs*;
 - (v) abandonment and reclamation costs;
 - (vi) *future net revenue* before deducting *future income tax expenses*;
 - (vii) *future income tax expenses*; and
 - (viii) *future net revenue* after deducting *future income tax expenses*.
 - (c) Disclose, by *production group* **and on a unit value basis for each production group (e.g., \$/Mcf or \$/bbl using net reserves)**, the net present value of *future net revenue* (before deducting *future income tax expenses*) estimated using *forecast prices and costs* and calculated using a discount rate of 10 percent.

Item 2.2 Supplemental Disclosure of Reserves Data (Constant Prices and Costs)

The reporting issuer may supplement its disclosure of reserves data under item 2.1 by also disclosing the components of item 2.1 in respect of its proved reserves or its proved and probable reserves, using constant prices and costs as at the last day of the reporting issuer's most recent financial year.

Item 2.3 Reserves Disclosure Varies with Accounting

In determining reserves to be disclosed:

- (a) Consolidated Financial Disclosure – if the reporting issuer files consolidated financial statements:
 - (i) include 100 percent of reserves attributable to the parent company and 100 percent of the reserves attributable to its consolidated subsidiaries (whether or not wholly-owned); and
 - (ii) if a significant portion of reserves referred to in clause (i) is attributable to a consolidated subsidiary in which there is a significant minority interest, disclose that fact and the approximate portion of such reserves attributable to the minority interest;
- (b) Proportionate Consolidation – if the reporting issuer files financial statements in which investments are proportionately consolidated, the reporting issuer's disclosed reserves must include the reporting issuer's proportionate share of investees' oil and gas reserves; and
- (c) Equity Accounting – if the reporting issuer files financial statements in which investments are accounted for by the equity method, do not include investees' oil and gas reserves in disclosed reserves of the reporting issuer, but disclose the reporting issuer's share of investees' oil and gas reserves separately.

Item 2.4 Future Net Revenue Disclosure Varies with Accounting

- 1. Consolidated Financial Disclosure – If the reporting issuer files consolidated financial statements, and if a significant portion of the reporting issuer's economic interest in future net revenue is attributable to a consolidated subsidiary in which there is a significant minority interest, disclose that fact and the approximate portion of the economic interest in future net revenue attributable to the minority interest.
- 2. Equity Accounting – If the reporting issuer files financial statements in which investments are accounted for by the equity method, do not include investees' future net revenue in disclosed future net revenue of the reporting issuer, but disclose the reporting issuer's share of investees' future net revenue separately, by country and in the aggregate.

INSTRUCTIONS

- (1) Do not include, in reserves, oil or gas that is subject to purchase under a long-term supply, purchase or similar agreement. However, if the reporting issuer is a party to such an agreement with a government or governmental authority, and participates in the operation of the properties in which the oil or gas is situated or otherwise serves as "producer" of the reserves (in contrast to being an independent purchaser, broker, dealer or importer), disclose separately the reporting issuer's interest in the reserves that are subject to such agreements at the effective date and the net quantity of oil or gas received by the reporting issuer under the agreement during the year ended on the effective date.
- (2) Future net revenue includes the portion attributable to the reporting issuer's interest under an agreement referred to in Instruction (1).
- (3) ~~In the disclosure of "abandonment~~Constant prices and reclamation costs~~" referred to in clause 3(b)(v) of Item 2.1 and in clause 3(b)(v) of Item 2.2 include, at minimum, well abandonment costs. The response to Item 6.4 will disclose total abandonment and reclamation costs and (in response to paragraph (d) of Item 6.4) the portion of total abandonment and reclamation costs, if any, not disclosed under clause 3(b)(v) of Item 2.1 and clause 3(b)(v) of Item 2.2: costs are prices and costs used in an estimate that are:~~

(a) the reporting issuer's prices and costs as at the effective date of the estimation, held constant throughout the estimated lives of the properties to which the estimate applies;

(b) if, and only to the extent that, there are fixed or presently determinable future prices or costs to which the reporting issuer is legally bound by a contractual or other obligation to supply a

physical product, including those for an extension period of a contract that is likely to be extended, those prices or costs rather than the prices and costs referred to in paragraph (a).

For the purpose of paragraph (a), the reporting issuer's prices will be the posted price for oil and the spot price for gas, after historical adjustments for transportation, gravity and other factors.

PART 3 PRICING ASSUMPTIONS

Item 3.1 Constant Prices Used in Supplemental Estimates

~~For~~ if supplemental disclosure under section 2.2 is made, then disclose, for each *product type*, ~~disclose~~ the benchmark reference prices for the countries or regions in which the *reporting issuer* operates, as at the last day of the *reporting issuer's* most recent financial year, reflected in the *reserves data* disclosed in response to Item 2.4-~~2.2~~.

Item 3.2 Forecast Prices Used in Estimates

1. For each *product type*, disclose:
 - (a) the pricing assumptions used in estimating *reserves data* disclosed in response to Item ~~2.2~~2.1:
 - (i) for each of at least the following five financial years; and
 - (ii) generally, for subsequent periods; and
 - (b) the *reporting issuer's* weighted average historical prices for the most recent financial year.
2. The disclosure in response to section 1 shall include the benchmark reference pricing schedules for the countries or regions in which the *reporting issuer* operates, and inflation and other forecast factors used.
3. If the pricing assumptions specified in response to section 1 were provided by a *qualified reserves evaluator or auditor* who is independent of the *reporting issuer*, disclose that fact and identify the *qualified reserves evaluator or auditor*.

INSTRUCTIONS

- (1) *Benchmark reference prices may be obtained from sources such as public product trading exchanges or prices posted by purchasers.*
- (2) *The ~~defined term~~ term "constant prices and costs" and the defined term "forecast prices and costs" include any fixed or presently determinable future prices or costs to which the **reporting issuer** is legally bound by a contractual or other obligation to supply a physical product, including those for an extension period of a contract that is likely to be extended. In effect, such contractually committed prices override benchmark reference prices for the purpose of estimating **reserves data**. To ensure that disclosure under this Part is not misleading, the disclosure should reflect such contractually committed prices.*
- (3) *Under subsection 5.7(1) of NI 51-101, the **reporting issuer** must obtain the written consent of the **qualified reserves evaluator or auditor** to disclose his or her identity in response to section 3 of this Item.*

PART 4 ~~RECONCILIATIONS~~RECONCILIATION OF CHANGES IN RESERVES AND FUTURE NET REVENUE

Item 4.1 Reserves Reconciliation

1. Provide the information specified in section 2 of this Item in respect of the following *reserves* categories:
 - (a) ~~net~~gross *proved reserves* (in total);
 - (b) ~~net~~gross *probable reserves* (in total); and
 - (c) ~~net~~gross *proved plus probable reserves* (in total).
2. Disclose changes between the *reserves* estimates made as at the *effective date* and the corresponding estimates ("prior-year estimates") made as at the last day of the preceding financial year of the *reporting issuer*.
 - (a) by country;

- (b) for each of the following:
- (i) light and medium *crude oil* (combined);
 - (ii) *heavy oil*;
 - (iii) *associated gas* and *non-associated gas* (combined); and
 - (iv) ~~*synthetic oil and other products from non-conventional oil and gas activities*~~;
 - (v) **bitumen**;
 - (vi) **coal bed methane**;
 - (vii) **hydrates**;
 - (viii) **shale oil; and**
 - (ix) **shale gas**;
- (c) separately identifying and explaining:
- (i) extensions;
 - ~~(ii) and~~ improved recovery;
 - (ii) ~~(iii)~~ technical revisions;
 - (iii) ~~(iv)~~ discoveries;
 - (iv) ~~(v)~~ acquisitions;
 - (v) ~~(vi)~~ dispositions;
 - (vi) ~~(vii)~~ economic factors; and
 - (vii) ~~(viii)~~ production.

INSTRUCTIONS

- (1) The reconciliation required under this Item 4.1 may be provided in respect of **reserves** estimated using either **~~constant prices and costs~~** or **~~forecast prices and costs~~**, with the price and cost case indicated in the disclosure.
- (2) For the purpose of this Item 4.1, it is sufficient to provide the information in respect of the products specified in paragraph 2(b), excluding **solution gas, natural gas liquids** and other associated by-products.
- (3) The **COGE Handbook** provides guidance on the preparation of the reconciliation required under this Item 4.1.

Item 4.2 — Future Net Revenue Reconciliation

1. Provide the information specified in section 2 of this Item in respect of estimates of *future net revenue* (estimated using ~~*constant prices and costs*~~ and calculated using a discount rate of 10 percent) attributable to ~~*net proved reserves*~~ (in total).
2. Disclose changes between the *future net revenue* estimates referred to in section 1 made as at the ~~*effective date*~~ and the corresponding estimates ("prior year estimates") made as at the last day of the preceding financial year of the ~~*reporting issuer*~~:
 - (a) by country;
 - (b) separately identifying and explaining:

- ~~(i) sales and transfers of oil, gas or other product types produced during the period net of production costs and royalties;~~
- ~~(ii) net change in sales and transfer prices and in production costs and royalties related to future production;~~
- ~~(iii) changes in previously estimated development costs incurred during the period;~~
- ~~(iv) changes in estimated future development costs;~~
- ~~(v) net change resulting from extensions and improved recovery;~~
- ~~(vi) net change resulting from discoveries;~~
- ~~(vii) changes resulting from acquisitions of reserves;~~
- ~~(viii) changes resulting from dispositions of reserves;~~
- ~~(ix) net change resulting from revisions in quantity estimates;~~
- ~~(x) accretion of discount (10 percent of discounted future net revenue at the beginning of the financial year);~~
- ~~(xi) net change in income taxes; and~~
- ~~(xii) any other significant factors.~~

INSTRUCTIONS

- ~~(1) For the purpose of this Part 4, compute the effects of changes in prices and costs before the effects of changes in volumes, so that, in respect of constant prices and costs, volumes are reflected at prices as at the effective date.~~
- ~~(2) Except in respect of clause 2(b)(xi) of Item 4.2, the information to be provided under this Part is pre-tax information.~~
- ~~(3) For the purpose of clause 2(b)(xi) of Item 4.2, a "net change in income taxes" includes both income taxes incurred during the period and changes in estimated future income tax expenses.~~

PART 5 ADDITIONAL INFORMATION RELATING TO RESERVES DATA

Item 5.1 Undeveloped Reserves

1. For *proved undeveloped reserves*:
 - (a) disclose for each *product type* the volumes of *proved undeveloped reserves* that were first attributed in each of the most recent ~~five~~three financial years and, in the aggregate, before that time; ~~or~~and
 - (b) discuss generally the basis on which the *reporting issuer* attributes *proved undeveloped reserves*, its plans (including timing) for developing the *proved undeveloped reserves* and, if applicable, its reasons for not planning to develop particular *proved undeveloped reserves* during the following two years.
2. For *probable undeveloped reserves*:
 - (a) disclose for each *product type* the volumes of *probable undeveloped reserves* that were first attributed in each of the most recent ~~five~~three financial years and, in the aggregate, before that time; ~~or~~and
 - (b) discuss generally the basis on which the *reporting issuer* attributes *probable undeveloped reserves*, its plans (including timing) for developing the *probable undeveloped reserves* and, if applicable, its reasons for not planning to develop particular *probable undeveloped reserves* during the following two years.

Item 5.2 Significant Factors or Uncertainties

1. Identify and discuss important economic factors or significant uncertainties that affect particular components of the *reserves data*.
2. Section 1 does not apply if the information is disclosed in the *reporting issuer's* financial statements for the financial year ended on the *effective date*.

INSTRUCTION

*Examples of information that could warrant disclosure under this Item 5.2 include unusually high expected **development costs** or **operating costs**, the need to build a major pipeline or other major facility before **production of reserves** can begin, or contractual obligations to **produce** and sell a significant portion of **production** at prices substantially below those which could be realized but for those contractual obligations.*

Item 5.3 Future Development Costs

1. (a) Provide the information specified in paragraph 1(b) in respect of *development costs* deducted in the estimation of *future net revenue* attributable to each of the following *reserves* categories:
 - (i) *proved reserves* (in total) estimated using ~~constant prices and costs~~; **forecast prices and costs**; **and**
 - ~~(ii) *proved reserves* (in total) estimated using *forecast prices and costs*; and~~
 - (ii) ~~(iii)~~ *proved plus probable reserves* (in total) estimated using *forecast prices and costs*.
- (b) Disclose, by country, the amount of *development costs* estimated:
 - (i) in total, calculated using no discount ~~and using a discount rate of 10 percent~~; and
 - (ii) by year for each of the first five years estimated.
2. Discuss the *reporting issuer's* expectations as to:
 - (a) the sources (including internally-generated cash flow, debt or equity financing, farm-outs or similar arrangements) and costs of funding for estimated future *development costs*; and
 - (b) the effect of those costs of funding on disclosed *reserves* or *future net revenue*.
3. If the *reporting issuer* expects that the costs of funding referred to in section 2, could make development of a *property* uneconomic for that *reporting issuer*, disclose that expectation and its plans for the *property*.

PART 6 OTHER OIL AND GAS INFORMATION

Item 6.1 Oil and Gas Properties and Wells

1. Identify and describe generally the *reporting issuer's* important *properties*, plants, facilities and installations:
 - (a) identifying their location (province, territory or state if in Canada or the United States, and country otherwise);
 - (b) indicating whether they are located onshore or offshore;
 - (c) in respect of *properties* to which *reserves* have been attributed and which are capable of *producing* but which are not *producing*, disclosing how long they have been in that condition and discussing the general proximity of pipelines or other means of transportation; and
 - (d) describing any statutory or other mandatory relinquishments, surrenders, back-ins or changes in ownership.
2. State, separately for *oil* wells and *gas* wells, the number of the *reporting issuer's* producing wells and non-producing wells, expressed in terms of both *gross* wells and *net* wells, by location (province, territory or state if in Canada or the United States, and country otherwise).

Item 6.2 Properties With No Attributed Reserves

1. For unproved *properties* disclose:
 - (a) the *gross* area (acres or hectares) in which the *reporting issuer* has an interest;
 - (b) the interest of the *reporting issuer* therein expressed in terms of net area (acres or hectares);
 - (c) the location, by country; and
 - (d) the existence, nature (including any bonding requirements), timing and cost (specified or estimated) of any work commitments.
2. Disclose, by country, the *net* area (acres or hectares) of *unproved property* for which the *reporting issuer* expects its rights to explore, develop and exploit to expire within one year.

Item 6.3 Forward Contracts

1. If the *reporting issuer* is bound by an agreement (including a transportation agreement), directly or through an aggregator, under which it may be precluded from fully realizing, or may be protected from the full effect of, future market prices for *oil* or *gas*, describe generally the agreement, discussing dates or time periods and summaries or ranges of volumes and contracted or reasonably estimated values.
2. Section 1 does not apply to agreements disclosed by the *reporting issuer*
 - (a) as financial instruments, in accordance with Section ~~3860~~3861 of the *CICA Handbook*; or
 - (b) as contractual obligations or commitments, in accordance with Section 3280 of the *CICA Handbook*.
3. If the *reporting issuer's* transportation obligations or commitments for future physical deliveries of *oil* or *gas* exceed the *reporting issuer's* expected related future *production* from its *proved reserves*, estimated using *forecast prices and costs* and disclosed under Part 2, discuss such excess, giving information about the amount of the excess, dates or time periods, volumes and reasonably estimated value.

Item 6.4 Additional Information Concerning Abandonment and Reclamation Costs

In respect of abandonment and reclamation costs for surface *leases*, wells, facilities and pipelines, disclose:

- (a) how the *reporting issuer* estimates such costs;
- (b) the number of net wells for which the *reporting issuer* expects to incur such costs;
- (c) the total amount of such costs, net of estimated salvage value, expected to be incurred, calculated without discount and using a discount rate of 10 percent;
- (d) the portion, if any, of the amounts disclosed under paragraph (c) of this Item 6.4 that was not deducted as abandonment and reclamation costs in estimating the *future net revenue* disclosed under Part 2; and
- (e) the portion, if any, of the amounts disclosed under paragraph (c) of this Item 6.4 that the *reporting issuer* expects to pay in the next three financial years, in total.

INSTRUCTION

*Item 6.4 supplements the information disclosed in response to clause 3(b)(v) of Item ~~2.1~~ and clause ~~3(b)(v)~~ of Item ~~2.2.2.1~~. The response to paragraph (d) of Item 6.4 should enable a reader of this statement and of the **reporting issuer's** financial statements for the financial year ending on the **effective date** to understand both the **reporting issuer's** estimated total abandonment and reclamation costs, and what portions of that total are, and are not, reflected in the disclosed **reserves data**.*

Item 6.5 Tax Horizon

If the *reporting issuer* is not required to pay income taxes for its most recently completed financial year, discuss its estimate of when income taxes may become payable.

Item 6.6 Costs Incurred

1. Disclose each of the following, by country, for the most recent financial year (irrespective of whether such costs were capitalized or charged to expense when incurred):
 - (a) *property acquisition costs*, separately for *proved properties* and *unproved properties*;
 - (b) *exploration costs*; and
 - (c) *development costs*.
2. For the purpose of this Item 6.6, if the *reporting issuer* files financial statements in which investments are accounted for by the equity method, disclose by country the reporting issuer's share of investees' (i) *property acquisition costs*, (ii) *exploration costs* and (iii) *development costs* incurred in the most recent financial year.

Item 6.7 Exploration and Development Activities

1. Disclose, by country and separately for *exploratory wells* and *development wells*:
 - (a) the number of *gross wells* and *net wells* completed in the *reporting issuer's* most recent financial year; and
 - (b) for each category of wells for which information is disclosed under paragraph (a), the number completed as *oil wells*, *gas wells* and *service wells* and the number that were dry holes.
2. Describe generally the *reporting issuer's* most important current and likely exploration and development activities, by country.

Item 6.8 Production Estimates

1. Disclose, by country, for each *product type*, the volume of *production* estimated for the first year reflected in the estimates of ~~*future net revenue*~~ **gross proved reserves and gross probable reserves** disclosed under Items 2.1 and ~~2.2~~ **Item 2.1**.
2. If one *field* accounts for 20 percent or more of the estimated *production* disclosed under section 1, identify that *field* and disclose the volume of *production* estimated for the *field* for that year.

Item 6.9 Production History

1. To the extent not previously disclosed in financial statements filed by the *reporting issuer*, disclose, for each quarter of its most recent financial year, by country for each *product type*:
 - (a) the *reporting issuer's* share of average daily *production* volume, before deduction of royalties; and
 - (b) as an average per unit of volume (for example, *\$/bbl* or *\$/Mcf*):
 - (i) the prices received;
 - (ii) royalties paid;
 - (iii) *production costs*; and
 - (iv) the resulting netback.
2. For each important *field*, and in total, disclose the *reporting issuer's production* volumes for the most recent financial year, for each *product type*.

INSTRUCTION

*In providing information for each **product type** for the purpose of Item 6.9, it is not necessary to allocate among multiple **product types** attributable to a single well, **reservoir** or other **reserves** entity. It is sufficient to provide the information in respect of the principal **product type** attributable to the well, **reservoir** or other **reserves** entity. **Resulting netbacks may be disclosed on the basis of units of equivalency between oil and gas (e.g. BOE) but if so that must be made clear and disclosure must comply with section 5.14 of NI 51-101.***

**FORM 51-101F2
REPORT ON RESERVES DATA
BY
INDEPENDENT QUALIFIED RESERVES
EVALUATOR OR AUDITOR**

This is the form referred to in item 2 of section 2.1 of National Instrument 51-101 *Standards of Disclosure for Oil and Gas Activities ("NI 51-101")*.

1. Terms to which a meaning is ascribed in *NI 51-101* have the same meaning in this form.¹
2. The report on *reserves data* referred to in item 2 of section 2.1 of *NI 51-101*, to be executed by one or more *qualified reserves evaluators or auditors* independent of the *reporting issuer*, shall in all material respects be as follows:

Report on Reserves Data

To the board of directors of [name of reporting issuer] (the "Company"):

1. We have [audited] [evaluated] [and reviewed] the Company's reserves data as at [last day of the reporting issuer's most recently completed financial year]. The reserves data ~~consist of the following:~~ **are estimates of proved reserves and probable reserves and related future net revenue as at [last day of the reporting issuer's most recently completed financial year], estimated using forecast prices and costs.**
 - (a) ~~(i) proved and proved plus probable oil and gas reserves estimated as at [last day of the reporting issuer's most recently completed financial year] using forecast prices and costs; and~~
 - (ii) ~~the related estimated future net revenue; and~~
 - (b) ~~(i) proved oil and gas reserves estimated as at [last day of the reporting issuer's most recently completed financial year] using constant prices and costs; and~~
 - (ii) ~~the related estimated future net revenue.~~
2. The reserves data are the responsibility of the Company's management. Our responsibility is to express an opinion on the reserves data based on our [audit] [evaluation] [and review].

We carried out our [audit] [evaluation] [and review] in accordance with standards set out in the Canadian Oil and Gas Evaluation Handbook (the "COGE Handbook") prepared jointly by the Society of Petroleum Evaluation Engineers (Calgary Chapter) and the Canadian Institute of Mining, Metallurgy & Petroleum (Petroleum Society).

3. Those standards require that we plan and perform an [audit] [evaluation] [and review] to obtain reasonable assurance as to whether the reserves data are free of material misstatement. An [audit] [evaluation] [and review] also includes assessing whether the reserves data are in accordance with principles and definitions presented in the COGE Handbook.
4. The following table sets forth the estimated future net revenue (before deduction of income taxes) attributed to proved plus probable reserves, estimated using forecast prices and costs and calculated using a discount rate of 10 percent, included in the reserves data of the Company [audited] [evaluated] [and reviewed] by us for the year ended xxx xx, 20xx, and identifies the respective portions thereof that we have [audited] [evaluated] [and reviewed] and reported on to the Company's [management/board of directors]:

Independent Qualified Reserves Evaluator or Auditor	Description and Preparation Date of [Audit/ Evaluation/ Review] Report	Location of Reserves (Country or Foreign Geographic Area)	Net Present Value of Future Net Revenue (before income taxes, 10% discount rate)			
			Audited	Evaluated	Reviewed	Total
Evaluator A	xxx xx, 20xx	xxxx	\$xxx	\$xxx	\$xxx	\$xxx
Evaluator B	xxx xx, 20xx	xxxx	xxx	xxx	xxx	xxx
Totals			\$xxx	\$xxx	\$xxx	\$xxx ²

¹ For the convenience of readers, Appendix 1 to Companion Policy 51-101CP sets out the meanings of terms that are printed in italics in sections 1 and 2 of this Form or in *NI 51-101*, *Form 51-101F1*, *Form 51-101F3* or the Companion Policy.

Request for Comments

- 5. In our opinion, the reserves data respectively [audited] [evaluated] by us have, in all material respects, been determined and are in accordance with the COGE Handbook. We express no opinion on the reserves data that we reviewed but did not audit or evaluate.
- 6. We have no responsibility to update our reports referred to in paragraph 4 for events and circumstances occurring after their respective preparation dates.
- 7. Because the reserves data are based on judgements regarding future events, actual results will vary and the variations may be material. **However, any variations should be consistent with the fact that reserves are categorized according to the probability of their recovery.**

Executed as to our report referred to above:

Evaluator A, City, Province or State / Country, Execution Date

_____ [signed]

Evaluator B, City, Province or State / Country, Execution Date

_____ [signed]

² This amount should be the amount disclosed by the *reporting issuer* in its statement of *reserves data* filed under item 1 of section 2.1 of *NI 51-101*, as its *future net revenue* (before deducting *future income tax expenses*) attributable to *proved* plus *probable reserves*, estimated using *forecast prices and costs* and calculated using a discount rate of 10 percent (required by section 2 of Item 2.2 of Form *51-101F1*).

**FORM 51-101F3
REPORT OF
MANAGEMENT AND DIRECTORS
ON OIL AND GAS DISCLOSURE**

~~(incorporating amendments of September 19, 2005)~~

This is the form referred to in item 3 of section 2.1 of National Instrument 51-101 *Standards of Disclosure for Oil and Gas Activities* ("NI 51-101").

as amended September 19, 2005

1. Terms to which a meaning is ascribed in *NI 51-101* have the same meaning in this form.¹
2. The report referred to in item 3 of section 2.1 of *NI 51-101* shall in all material respects be as follows:

**Report of Management and Directors
on Reserves Data and Other Information**

Management of [name of reporting issuer] (the "Company") are responsible for the preparation and disclosure of information with respect to the Company's oil and gas activities in accordance with securities regulatory requirements. This information includes reserves data, which consist of the following: which are estimates of proved reserves and probable reserves and related future net revenue as at [last day of the reporting issuer's most recently completed financial year], estimated using forecast prices and costs.

- (a) ~~(i) proved and proved plus probable oil and gas reserves estimated as at [last day of the reporting issuer's most recently completed financial year] using forecast prices and costs; and~~
 - (ii) ~~the related estimated future net revenue; and~~
- (b) ~~(i) proved oil and gas reserves estimated as at [last day of the reporting issuer's most recently completed financial year] using constant prices and costs; and~~
 - (ii) ~~the related estimated future net revenue.~~

[An] independent [qualified reserves evaluator[s] or qualified reserves auditor[s]] [has / have] [audited] [evaluated] [and reviewed] the Company's reserves data. The report of the independent [qualified reserves evaluator[s] or qualified reserves auditor[s]] [is presented below / will be filed with securities regulatory authorities concurrently with this report].

The [Reserves Committee of the] board of directors of the Company has

- (a) reviewed the Company's procedures for providing information to the independent [qualified reserves evaluator[s] or qualified reserves auditor[s]];
- (b) met with the independent [qualified reserves evaluator[s] or qualified reserves auditor[s]] to determine whether any restrictions affected the ability of the independent [qualified reserves evaluator[s] or qualified reserves auditor[s]] to report without reservation [and, ~~because in the event of the~~ proposal to change the independent [qualified reserves evaluator[s] or qualified reserves auditor[s]], to inquire whether there had been disputes between the previous independent [qualified reserves evaluator[s] or qualified reserves auditor[s] and management]; and
- (c) reviewed the reserves data with management and the independent [qualified reserves evaluator[s] or qualified reserves auditor[s]].

The [Reserves Committee of the] board of directors has reviewed the Company's procedures for assembling and reporting other information associated with oil and gas activities and has reviewed that information with management. The board of directors has [, on the recommendation of the Reserves Committee,] approved

- (a) the content and filing with securities regulatory authorities of the Form 51-101F1 containing reserves data and other oil and gas information;

¹ For the convenience of readers, Appendix 1 to Companion Policy 51-101CP sets out the meanings of terms that are printed in italics in sections 1 and 2 of this Form or in *NI 51-101*, *Form 51-101F1*, *Form 51-101F2* or the Companion Policy.

Request for Comments

- (b) the filing of **Form 51-101F2 which is** the report of the independent [qualified reserves evaluator[s] or qualified reserves auditor[s]] on the reserves data; and
- (c) the content and filing of this report.

Because the reserves data are based on judgements regarding future events, actual results will vary and the variations may be material. **However, any variations should be consistent with the fact that reserves are categorized according to the probability of their recovery.**

[signature, name and title of chief executive officer]

[signature, name and title of a senior officer other than the chief executive officer]

[signature, name of a director]

[signature, name of a director]

[Date]

**COMPANION POLICY 51-101CP
STANDARDS OF DISCLOSURE
FOR OIL AND GAS ACTIVITIES**

TABLE OF CONTENTS

PART 1 APPLICATION AND TERMINOLOGY

- 1.1 Definitions
- 1.2 *COGE Handbook*
- 1.3 Applies to *Reporting Issuers* Only
- 1.4 *Materiality* Standard

PART 2 ANNUAL FILING REQUIREMENTS

- 2.1 Annual Filings on *SEDAR*
- 2.2 Inapplicable or Immaterial Information
- 2.3 Use of Forms
- 2.4 *Annual Information Form*
- 2.5 *Reporting Issuer* Has No Reserves
- 2.6 Reservation in Report of *Independent Qualified Reserves Evaluator or Auditor*
- 2.7 Disclosure in *Form 51-101F1*
- 2.8 *Form 51-101F2*

PART 3 RESPONSIBILITIES OF *REPORTING ISSUERS* AND DIRECTORS

- 3.1 *Reserves* Committee
- 3.2 Responsibility for Disclosure

PART 4 MEASUREMENT

- 4.1 Consistency in Dates

PART 5 REQUIREMENTS APPLICABLE TO ALL DISCLOSURE

- 5.1 Application of Part 5
- 5.2 Disclosure of *Reserves* and Other Information
- 5.3 *Reserves* and *Resources* Classification
- 5.4 Written Consents
- 5.5 Disclosure of *Resources*
- 5.6 *Analogous Information*
- 5.7 Consistent Use of Units of Measurement
- 5.8 *BOEs* and *McfGEs*
- 5.9 Finding and *Development costs*
- 5.10 Prospectus Disclosure

PART 6 MATERIAL CHANGE DISCLOSURE

- 6.1 Changes from Filed Information

APPENDIX 1 – GLOSSARY

APPENDIX 2 – *RESERVES* AND *RESOURCES* CLASSIFICATION

APPENDIX 3 – SAMPLE *RESERVES DATA* DISCLOSURE

**COMPANION POLICY 51-101CP
STANDARDS OF DISCLOSURE
FOR OIL AND GAS ACTIVITIES**

This Companion Policy sets out the views of the Canadian Securities Administrators (the "CSA") as to the interpretation and application of National Instrument 51-101 *Standards of Disclosure for Oil and Gas Activities (NI 51-101)* and related forms.

*NI 51-101*¹ supplements other continuous disclosure requirements of *securities legislation* that apply to *reporting issuers* in all business sectors.

The requirements under *NI 51-101* for the filing with *securities regulatory authorities* of information relating to *oil and gas activities* are designed in part to assist the public and analysts in making investment decisions and recommendations.

The CSA encourage registrants² and other persons and companies that wish to make use of information concerning *oil and gas activities* of a *reporting issuer*, including *reserves data*, to review the information filed on *SEDAR* under *NI 51-101* by the *reporting issuer* and, if they are summarizing or referring to this information, to use the applicable terminology consistent with *NI 51-101* and the *COGE Handbook*.

PART 1 APPLICATION AND TERMINOLOGY

1.1 Definitions

- (1) **General** - Several terms relating to *oil and gas activities* are defined in section 1.1 of *NI 51-101*. If a term is not defined in *NI 51-101*, *NI 14-101* or the securities statute in the *jurisdiction*, it will have the meaning or interpretation given to it in the *COGE Handbook* if it is defined or interpreted there, pursuant to section 1.2 of *NI 51-101*.

For the convenience of readers, Appendix 1 of this Companion Policy sets out the meaning of terms, including those defined in *NI 51-101* and several terms which are derived from the *COGE Handbook*.

- (2) **Forecast Prices and Costs** - The term *forecast prices and costs* is defined in subsection 1.1(j) of *NI 51-101* and discussed in the *COGE Handbook*. Except to the extent that the *reporting issuer* is legally bound by fixed or presently determinable future prices or costs³, *forecast prices and costs* are future prices and costs "generally recognized as being a reasonable outlook on the future".

The CSA do not consider that future prices or costs would satisfy this requirement if they fall outside the range of forecasts of comparable prices or costs used, as at the same date, for the same future period, by major *independent qualified reserves evaluators or auditors*.

- (3) **Independent** - The term *independent* is defined in subsection 1.1(o) of *NI 51-101*. Applying this definition, the following are examples of circumstances in which the CSA would consider that a *qualified reserves evaluator or auditor* (or other expert) is not *independent*. We consider a *qualified reserves evaluator or auditor* is not *independent* when the *qualified reserves evaluator or auditor*:

- (a) is an employee, insider, or director of the *reporting issuer*;
- (b) is an employee, insider, or director of a related party of the *reporting issuer*;
- (c) is a partner of any person or company in paragraph (a) or (b);
- (d) holds or expects to hold securities, either directly or indirectly, of the *reporting issuer* or a related party of the *reporting issuer*;
- (e) holds or expects to hold securities, either directly or indirectly, in another *reporting issuer* that has a direct or indirect interest in the property that is the subject of the technical report or an adjacent property;

¹ For the convenience of readers, the Appendix to Companion Policy 51-101CP sets out the meanings of terms that are printed in italics in *NI 51-101*, *Form 51-101F1*, *Form 51-101F2* or *Form 51-101F3*, or in this Companion Policy (other than terms italicized in titles of documents, or in the texts of reports set out in Part 8, that are printed entirely in italics).

² "Registrant" has the meaning ascribed to the term under *securities legislation* in the *jurisdiction*.

³ Refer to the discussion of financial instruments in paragraph 2.7(5) below.

- (f) has or expects to have, directly or indirectly, an ownership, royalty, or other interest in the property that is the subject of the technical report or an adjacent property; or
- (g) has received the majority of their income, either directly or indirectly, in the three years preceding the date of the technical report from the *reporting issuer* or a related party of the *reporting issuer*.

For the purpose of paragraph (d) above, "related party of the *reporting issuer*" means an affiliate, associate, subsidiary, or control person of the *reporting issuer* as those terms are defined under securities legislation.

There may be instances in which it would be reasonable to consider that the independence of a *qualified reserves evaluator or auditor* would not be compromised even though the *qualified reserves evaluator or auditor* holds an interest in the *reporting issuer's* securities. The *reporting issuer* needs to determine whether a reasonable person would consider such interest would interfere with the *qualified reserves evaluator's or auditor's* judgement regarding the preparation of the technical report.

There may be circumstances in which the *securities regulatory authorities* question the objectivity of the *qualified reserves evaluator or auditor*. In order to ensure the requirement for independence of the *qualified reserves evaluator or auditor* has been preserved, the *reporting issuer* may be asked to provide further information, additional disclosure or the opinion of another *qualified reserves evaluator or auditor* to address concerns about possible bias or partiality on the part of the *qualified reserves evaluator or auditor*.

- (4) **Product Types Arising From Oil Sands and Other Non-Conventional Activities** - The definition of *product type* in subsection 1.1(v) includes products arising from non-conventional *oil and gas activities*. *NI 51-101* therefore applies not only to conventional *oil and gas activities*, but also to non-conventional activities such as the extraction of *bitumen* from *oil sands* with a view to the *production of synthetic oil*, the *in situ production of bitumen* and the extraction of methane from coal beds.

Although *NI 51-101* and *Form 51-101F1* make few specific references to non-conventional *oil and gas activities*, the requirements of *NI 51-101* for the preparation and disclosure of *reserves data* and for the disclosure of *resources* apply to *oil and gas reserves and resources* relating to *oil sands, shale, coal or other non-conventional sources of hydrocarbons*. The *CSA* encourage *reporting issuers* that are engaged in non-conventional *oil and gas activities* to supplement the disclosure prescribed in *NI 51-101* and *Form 51-101F1* with information specific to those activities that can assist investors and others in understanding the business and results of the *reporting issuer*.

- (5) **Professional Organization -**

- (a) **Recognized Professional Organizations**

For the purposes of the *Instrument*, a *qualified reserves evaluator or auditor* must also be a member in good standing with a self-regulatory *professional organization* of engineers, geologists, geoscientists or other professionals.

The definition of "*professional organization*" (in subsection 1.1(w) of *NI 51-101* and in the Glossary in Appendix 1 to this Companion Policy) has four elements, three of which deal with the basis on which the organization accepts members and its powers and requirements for continuing membership. The fourth element requires either authority or recognition given to the organization by a statute in Canada, or acceptance of the organization by the *securities regulatory authority or regulator*.

As at January 19, 2007, each of the following organizations in Canada is a *professional organization*:

- Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA)
- Association of Professional Engineers and Geoscientists of the Province of British Columbia (APEGBC)
- Association of Professional Engineers and Geoscientists of Saskatchewan (APEGs)
- Association of Professional Engineers and Geoscientists of Manitoba (APEGM)
- Association of Professional Geoscientists of Ontario (APGO)
- Professional Engineers of Ontario (PEO)
- Ordre des ingénieurs du Québec (OIQ)
- Ordre des Géologues du Québec (OGQ)
- Association of Professional Engineers of Prince Edward Island (APEPEI)
- Association of Professional Engineers and Geoscientists of New Brunswick (APEGNB)
- Association of Professional Engineers of Nova Scotia (APENS)
- Association of Professional Engineers and Geoscientists of Newfoundland (APEGN)

- Association of Professional Engineers of Yukon (APEY)
- Association of Professional Engineers, Geologists & Geophysicists of the Northwest Territories (NAPEGG) (representing the Northwest Territories and Nunavut Territory)

(b) **Other Professional Organizations**

The CSA are willing to consider whether particular foreign professional bodies should be accepted as "*professional organizations*" for the purposes of *NI 51-101*. A *reporting issuer*, foreign professional body or other interested person can apply to have a self-regulatory organization that satisfies the first three elements of the definition of "*professional organization*" accepted for the purposes of *NI 51-101*.

In considering any such application for acceptance, the *securities regulatory authority* or *regulator* is likely to take into account the degree to which a foreign professional body's authority or recognition, admission criteria, standards and disciplinary powers and practices are similar to, or differ from, those of organizations listed above.

The list of foreign *professional organizations* is updated periodically in CSA Staff Notice 51-309 *Acceptance of Certain Foreign Professional Boards as a "professional organization"*. As at January 19, 2007, each of the following foreign organizations has been recognized as a *professional organization* for the purposes of *NI 51-101*:

- California Board for Professional Engineers and Land Surveyors,
- State of Colorado Board of Registration for Professional Engineers and Professional Land Surveyors
- Louisiana State Board of Registration for Professional Engineers and Land Surveyors,
- Oklahoma State Board of Registration for Professional Engineers and Land Surveyors
- Texas Board of Professional Engineers
- American Association of Petroleum Geologists (AAPG)
- American Institute of Professional Geologists (AIPG), in respect of the AIPG's Certified Professional Geologists

(c) **No Professional Organization**

A *reporting issuer* or other person may apply for an exemption under Part 8 of *NI 51-101* to enable a *reporting issuer* to appoint, in satisfaction of its obligation under section 3.2 of *NI 51-101*, an individual who is not a member of a *professional organization*, but who has other satisfactory qualifications and experience. Such an application might refer to a particular individual or generally to members and employees of a particular foreign *reserves evaluation* firm. In considering any such application, the *securities regulatory authority* or *regulator* is likely to take into account the individual's professional education and experience or, in the case of an application relating to a firm, to the education and experience of the firm's members and employees, evidence concerning the opinion of a *qualified reserves evaluator or auditor* as to the quality of past work of the individual or firm, and any prior relief granted or denied in respect of the same individual or firm.

(d) **Renewal Applications Unnecessary**

A successful applicant would likely have to make an application contemplated in this subsection 1.1(5) only once, and not renew it annually.

- (6) **Qualified Reserves Evaluator or Auditor** - The definitions of *qualified reserves evaluator* and *qualified reserves auditor* are set out in subsections 1.1(y) and 1.1(x) of *NI 51-101*, respectively, and again in the Glossary contained in Appendix 1 to this Companion Policy.

The defined terms "*qualified reserves evaluator*" and "*qualified reserves auditor*" have a number of elements. A *qualified reserves evaluator* or *qualified reserves auditor* must

- possess professional qualifications and experience appropriate for the tasks contemplated in the *Instrument*, and
- be a member in good standing of a *professional organization*.

Reporting issuers should satisfy themselves that any person they appoint to perform the tasks of a *qualified reserves evaluator or auditor* for the purpose of the *Instrument* satisfies each of the elements of the appropriate definition.

In addition to having the relevant professional qualifications, a *qualified reserves evaluator or auditor* must also have sufficient practical experience relevant to the *reserves data* to be reported on. In assessing the adequacy of practical experience, reference should be made to section 3 of volume 1 of the *COGE Handbook* - "Qualifications of Evaluators and Auditors, Enforcement and Discipline".

1.2 *COGE Handbook*

Pursuant to section 1.2 of *NI 51-101*, definitions and interpretations in the *COGE Handbook* apply for the purposes of *NI 51-101* if they are not defined in *NI 51-101*, *NI 14-101* or the securities statute in the *jurisdiction* (except to the extent of any conflict or inconsistency with *NI 51-101*, *NI 14-101* or the securities statute).

Section 1.1 of *NI 51-101* and the Glossary contained in Appendix 1 of this Companion Policy set out definitions and interpretations, many of which are derived from the *COGE Handbook*. *Reserves* definitions and categories developed by the Petroleum Society of the Canadian Institute of Mining, Metallurgy & Petroleum (CIM) are incorporated in the *COGE Handbook* and also set out, in part, in the Glossary contained in Appendix 1 of this Companion Policy.

Subparagraph 5.2(1)(a)(iii) of *NI 51-101* requires that all estimates of *reserves* or *future net revenue* have been prepared or audited in accordance with the *COGE Handbook*. Under sections 5.2, 5.3 and 5.9 of *NI 51-101*, all types of public *oil* and *gas* disclosure, including disclosure of *reserves* and *resources* must be consistent with the *COGE Handbook*.

1.3 Applies to Reporting issuers Only

NI 51-101 applies to *reporting issuers* engaged in *oil and gas activities*. The definition of *oil and gas activities* is broad. For example, a *reporting issuer* with no *reserves*, but a few prospects, unproved properties or *resources*, could still be engaged in *oil and gas activities* because such activities include exploration and development of unproved properties.

NI 51-101 will also apply to an issuer that is not yet a *reporting issuer* if it files a prospectus or other disclosure document that incorporates prospectus requirements. Pursuant to the long-form prospectus requirements, the issuer must disclose the information contained in *Form 51-101F1*, as well as the reports set out in *Form 51-101F2* and *Form 51-101F3*.

1.4 Materiality Standard

Section 1.4 of *NI 51-101* states that *NI 51-101* applies only in respect of information that is material.

NI 51-101 does not require disclosure or filing of information that is not material. If information is not required to be disclosed because it is not material, it is unnecessary to disclose that fact.

Materiality for the purposes of *NI 51-101* is a matter of judgement to be made in light of the circumstances, taking into account both qualitative and quantitative factors, assessed in respect of the *reporting issuer* as a whole.

This concept of *materiality* is consistent with the concept of *materiality* applied in connection with financial reporting pursuant to the *CICA Handbook*.

The reference in subsection 1.4(2) of *NI 51-101* to a "reasonable investor" denotes an objective test: would a notional investor, broadly representative of investors generally and guided by reason, be likely to be influenced, in making an investment decision to buy, sell or hold a security of a *reporting issuer*, by an item of information or an aggregate of items of information? If so, then that item of information, or aggregate of items, is "material" in respect of that *reporting issuer*. An item that is immaterial alone may be material in the context of other information, or may be necessary to give context to other information. For example, a large number of small interests in *oil and gas properties* may be material in aggregate to a *reporting issuer*. Alternatively, a small interest in an *oil and gas property* may be material to a *reporting issuer*, depending on the size of the *reporting issuer* and its particular circumstances.

PART 2 ANNUAL FILING REQUIREMENTS

2.1 Annual Filings on SEDAR

The information required under section 2.1 of *NI 51-101* must be filed electronically on *SEDAR*. Consult National Instrument 13-101 System for Electronic Document Analysis and Retrieval (*SEDAR*) and the current *CSA "SEDAR Filer Manual"* for information about filing documents electronically. The information required to be filed under item 1 of section 2.1 of *NI 51-101* is usually derived from a much longer and more detailed *oil and gas* report prepared by a *qualified reserves evaluator*. These long and detailed reports cannot be filed electronically on *SEDAR*.

2.2 Inapplicable or Immaterial Information

Section 2.1 of *NI 51-101* does not require the filing of any information, even if specified in *NI 51-101* or in a form referred to in *NI 51-101*, if that information is inapplicable or not material in respect of the *reporting issuer*. See section 1.4 of this Companion Policy for a discussion of *materiality*.

If an item of prescribed information is not disclosed because it is inapplicable or immaterial, it is unnecessary to state that fact or to make reference to the disclosure requirement.

2.3 Use of Forms

Section 2.1 of *NI 51-101* requires the annual filing of information set out in *Form 51-101F1* and reports in accordance with *Form 51-101F2* and *Form 51-101F3*. *NI 51-101* and the instructions in *Form 51-101F1*, give the *reporting issuer* considerable flexibility in presenting this information, provided that all required information is filed. Appendix 3 to this Companion Policy provides an example of how certain of the *reserves data* might be presented.

The information specified in all three forms, or any two of the forms, can be combined in a single document. A *reporting issuer* may wish to include statements indicating the relationship between documents or parts of one document. For example, the *reporting issuer* may wish to accompany the report of the *independent qualified reserves evaluator or auditor* (*Form 51-101F2*) with a reference to the *reporting issuer's* disclosure of the *reserves data* (*Form 51-101F1*), and vice versa.

The report of management and directors in *Form 51-101F3* may be combined with management's report on financial statements, if any, in respect of the same financial year.

2.4 Annual Information Form

Section 2.3 of *NI 51-101* permits *reporting issuers* to satisfy the requirements of section 2.1 of *NI 51-101* by presenting the information required under section 2.1 in an *annual information form*.

- (1) **Meaning of "Annual Information Form"** - *Annual information form* has the same meaning as "AIF" in National Instrument 51-102 *Continuous Disclosure Obligations*. Therefore, as set out in that definition, an *annual information form* can be a completed *Form 51-102F2 Annual Information Form* or, in the case of an SEC issuer (as defined in *NI 51-102*), a completed *Form 51-102F2* or an annual report or transition report under the 1934 Act on *Form 10-K*, *Form 10-KSB* or *Form 20-F*.
- (2) **Option to Set Out Information in Annual Information Form** - *Form 51-102F2 Annual Information Form* requires the information required by section 2.1 of *NI 51-101* to be included in the *annual information form*. That information may be included either by setting out the text of the information in the *annual information form* or by incorporating it, by reference from separately filed documents. The option offered by section 2.3 of *NI 51-101* enables a *reporting issuer* to satisfy its obligations under section 2.1 of *NI 51-101*, as well as its obligations in respect of *annual information form* disclosure, by setting out the information required under section 2.1 only once, in the *annual information form*. If the *annual information form* is on *Form 10-K*, this can be accomplished by including the information in a supplement (often referred to as a "wrapper") to the *Form 10-K*.

A *reporting issuer* that elects to set out in full in its *annual information form* the information required by section 2.1 of *NI 51-101* need not also file that information again for the purpose of section 2.1 in one or more separate documents. A *reporting issuer* that elects to follow this approach should file its *annual information form* in accordance with usual requirements of *securities legislation*, and at the same time file on *SEDAR*, in the category for *NI 51-101 oil and gas* disclosure, a notice that the information required under section 2.1 of *NI 51-101* is included in the *reporting issuer's* filed *annual information form*. This notice should be filed under *SEDAR Filing Type*: "Notice of Disclosure for Oil and Gas Activities (*NI 51-101*)", *Document Type*: "Notice of Disclosure for Oil and Gas Activities (*NI 51-101*)".

2.5 Reporting Issuer That Has No Reserves

The requirement to make annual *NI 51-101* filings is not limited to only those issuers that have *reserves* and related *future net revenue*. A *reporting issuer* with no *reserves* but with prospects, unproved *properties* or *resources* may be engaged in *oil and gas activities* (see paragraph 1.3 above) and therefore subject to *NI 51-101*. That means the issuer must still make annual *NI 51-101* filings and ensure that it complies with other *NI 51-101* requirements. The following is guidance on the preparation of *Form 51-101F1*, *Form 51-101F2*, *Form 51-101F3* and other *oil and gas* disclosure if the *reporting issuer* has no *reserves*.

- (1) **Form 51-101F1** - Section 1.4 of *NI 51-101* states that the *Instrument* applies only in respect of information that is material in respect of a *reporting issuer*. If indeed the *reporting issuer* has no *reserves*, we would consider that fact alone material. The *reporting issuer's* disclosure, under Part 2 of *Form 51-101F1*, should make clear that it has no *reserves* and hence no related *future net revenue*.

Supporting information regarding *reserves data* required under Part 2 (e.g., price estimates) that are not material to the issuer may be omitted. However, if the issuer had disclosed *reserves* and related *future net revenue* in the previous year, and has no *reserves* as at the end of its current financial year, the *reporting issuer* is still required to present a reconciliation to the prior-year's estimates of *reserves*, as required by Part 4 of *Form 51-101F1*.

The *reporting issuer* is also required to disclose information required under Part 6 of *Form 51-101F1*. Those requirements apply irrespective of the quantum of *reserves*, if any. This would include information about *properties* (items 6.1 and 6.2), costs (item 6.6), and exploration and development activities (item 6.7). The disclosure should make clear that the issuer had no *production*, as that fact would be material.

- (2) **Form 51-101F2** - *NI 51-101* requires *reporting issuers* to retain an *independent qualified reserves evaluator or auditor* to evaluate or audit the company's *reserves data* and report to the board of directors. If the *reporting issuer* had no *reserves* during the year and hence did not retain an evaluator or auditor, then it would not need to retain one just to file a (nil) report of the *independent* evaluators on the *reserves data* in the form of *Form 51-101F2* and the *reporting issuer* would therefore not be required to file a *Form 51-101F2*. If, however, the issuer did retain an evaluator or auditor to evaluate *reserves*, and the evaluator or auditor concluded that they could not be so categorized, or reclassified those *reserves* to *resources*, the issuer would have to file a report of the *qualified reserves evaluator* because the evaluator has, in fact, evaluated the *reserves* and expressed an opinion.
- (3) **Form 51-101F3** - Irrespective of whether the *reporting issuer* has *reserves*, the requirement to file a report of management and directors in the form of *Form 51-101F3* applies.
- (4) **Other NI 51-101 Requirements** - *NI 51-101* does not require *reporting issuers* to disclose *anticipated results* in respect of unproved *properties*, *prospects* or *resources*. However, if a *reporting issuer* chooses to disclose that type of information, sections 5.9 and 5.10 of *NI 51-101* apply to that disclosure, as applicable.

2.6 Reservation in Report of Independent Qualified Reserves Evaluator or Auditor

A report of an *independent qualified reserves evaluator or auditor* on *reserves data* will not satisfy the requirements of item 2 of section 2.1 of *NI 51-101* if the report contains a *reservation*, the cause of which can be removed by the *reporting issuer* (subsection 2.4(2) of *NI 51-101*).

The CSA do not generally consider time and cost considerations to be causes of a *reservation* that cannot be removed by the *reporting issuer*.

A report containing a *reservation* may be acceptable if the *reservation* is caused by a limitation in the scope of the *evaluation* or audit resulting from an event that clearly limits the availability of necessary records and which is beyond the control of the *reporting issuer*. This could be the case if, for example, necessary records have been inadvertently destroyed and cannot be recreated or if necessary records are in a country at war and access is not practicable.

One potential source of *reservations*, which the CSA consider can and should be addressed in a different way, could be reliance by a *qualified reserves evaluator or auditor* on information derived or obtained from a *reporting issuer's independent* financial auditors or reflecting their report. The CSA recommend that *qualified reserves evaluators or auditors* follow the procedures and guidance set out in both sections 4.5 and 12.6 of volume 1 of the *COGE Handbook* in respect of dealings with *independent* financial auditors. In so doing, the CSA expect that the quality of *reserves data* can be enhanced and a potential source of *reservations* can be eliminated.

2.7 Disclosure in Form 51-101F1

- (1) **Royalty Interest in Reserves** - *Net reserves* (or "company *net reserves*") of a *reporting issuer* include its royalty interest in *reserves*.

If a *reporting issuer* cannot obtain the information it requires to enable it to include a royalty interest in *reserves* in its disclosure of *net reserves*, it should, proximate to its disclosure of *net reserves*, disclose that fact and its corresponding royalty interest share of *oil* and *gas production* for the year ended on the *effective date*.

Form 51-101F1 requires that certain *reserves data* be provided on both a "gross" and "net" basis, the latter being adjusted for both royalty entitlements and royalty obligations. However, if a royalty is granted by a trust's subsidiary to the trust, this would not affect the computation of "net reserves". The typical *oil* and *gas* income trust structure involves the grant of a royalty by an operating subsidiary of the trust to the trust itself, the royalty being the source of the distributions to trust investors. In this case, the royalty is wholly within the combined or consolidated trust entity (the trust and its operating subsidiary). This is not the type of external entitlement or obligation for which adjustment is made in determining, for example, "net reserves". Viewing the trust and its consolidated entities together, the relevant *reserves* and other *oil* and *gas* information is that of the operating subsidiary without deduction of the internal royalty to the trust.

- (2) **Government Restriction on Disclosure** - If, because of a restriction imposed by a government or governmental authority having jurisdiction over a *property*, a *reporting issuer* excludes *reserves* information from its *reserves data* disclosed under *NI 51-101*, the disclosure should include a statement that identifies the *property* or country for which the information is excluded and explains the exclusion.

- (3) **Computation of Future Net Revenue**

(a) **Tax**

Form 51-101F1 requires *future net revenue* to be estimated and disclosed both before and after deduction of income taxes. However, a *reporting issuer* may not be subject to income taxes because of its royalty or income trust structure. In this instance, the issuer should use the tax rate that most appropriately reflects the income tax it reasonably expects to pay on the *future net revenue*. If the issuer is not subject to income tax because of its royalty trust structure, then the most appropriate income tax rate would be zero. In this case, the issuer could present the estimates of *future net revenue* in only one column and explain, in a note to the table, why the estimates of before-tax and after-tax *future net revenue* are the same.

Also, tax pools should be taken into account when computing *future net revenue* after income taxes. The definition of "future income tax expense" is set out in Appendix 1 to this Companion Policy. Essentially, future income tax expenses represent estimated cash income taxes payable on the *reporting issuer's* future pre-tax cash flows. These cash income taxes payable should be computed by applying the appropriate year-end statutory tax rates, taking into account future tax rates already legislated, to future pre-tax *net* cash flows reduced by appropriate deductions of estimated unclaimed costs and losses carried forward for tax purposes and relating to *oil and gas activities* (i.e., tax pools). Such tax pools may include Canadian *oil and gas property* expense (COGPE), Canadian development expense (CDE), Canadian exploration expense (CEE), undepreciated capital cost (UCC) and unused prior year's tax losses. (Issuers should be aware of limitations on the use of certain tax pools resulting from acquisitions of *properties* in situations where provisions of the Income Tax Act concerning successor corporations apply.)

(b) **Other Fiscal Regimes**

Other fiscal regimes, such as those involving *production* sharing contracts, should be adequately explained with appropriate allocations made to various classes of proved *reserves* and to *probable reserves*.

- (4) **Supplemental Disclosure of Future Net Revenue Using Constant prices and costs** - *Form 51-101F1* gives *reporting issuers* the option of disclosing *future net revenue* using *constant prices and costs* in addition to disclosing *future net revenue* using *forecast prices and costs*. *Constant prices and costs* are based on the *reporting issuer's* prices and costs as at the *reporting issuer's* financial year-end. In general, these prices and costs are assumed not to change, but rather to remain constant, throughout the life of a *property*, except to the extent of certain fixed or presently determinable future prices or costs to which the *reporting issuer* is legally bound by a contractual or other obligation to supply a physical product (including those for an extension period of a contract that is likely to be extended).

- (5) **Financial Instruments** - The definition of "forecast prices and costs" in subsection 1.1(j) of *NI 51-101* and the term "constant prices and costs" as defined in the Glossary in Appendix 1 to this Companion Policy refer to fixed or presently determinable future prices to which a *reporting issuer* is legally bound by a contractual or other obligation to supply a physical product. The phrase "contractual or other obligation to supply a physical product" excludes arrangements under which the *reporting issuer* can satisfy its obligations in cash and would therefore exclude an arrangement that would be a "financial instrument" as defined in Section 3855 of the *CICA Handbook*. The *CICA Handbook* discusses when a *reporting issuer's* obligation would be considered a

financial instrument and sets out the requirements for presentation and disclosure of these financial instruments (including so-called financial hedges) in the *reporting issuer's* financial statements.

- (6) **Reserves Reconciliation** - Subparagraph 4.1(2)(c)(ii) of *Form 51-101F1* requires reconciliations of *reserves* to separately identify and explain technical revisions. Technical revisions show changes in existing *reserves* estimates, in respect of carried-forward *properties*, over the period of the reconciliation (i.e., between estimates as at the *effective date* and the prior year's estimate) and are the result of new technical information, not the result of capital expenditure. With respect to making technical revisions, the following should be noted:

- **Infill Drilling:** It would not be acceptable to include infill drilling results as a technical revision. *Reserves* additions derived from infill drilling during the year are not attributable to revisions to the previous year's *reserves* estimates. Infill drilling *reserves* should be included in the "extensions and improved recovery" category.
- **Acquisitions:** If an acquisition is made during the year, (i.e., in the period between the *effective date* and the prior year's estimate), the *reserves* estimate to be used in the reconciliation is the estimate of *reserves* at the *effective date*, not at the acquisition date, plus any *production* since the acquisition date. This *production* should then be included as *production* in the reconciliation. If there has been a change in the *reserves* estimate between the acquisition date and the *effective date* other than that due to *production*, the issuer may wish to explain this as part of the reconciliation.

- (7) **Significant Factors or Uncertainties** - Item 5.2 of *Form 51-101F1* requires an issuer to identify and discuss important economic factors or significant uncertainties that affect particular components of the *reserves data*. Like a "subsequent event" note in a financial statement, the issuer should discuss this type of information even if it pertains to a period subsequent to the *effective date*.

For example, if events subsequent to the *effective date* have resulted in significant changes in expected future prices, such that the forecast prices reflected in the *reserves data* differ materially from those that would be considered to be a reasonable outlook on the future around the date of the company's "statement of *reserves data* and other information", then the issuer's statement might include, pursuant to item 5.2, a discussion of that change and its effect on the disclosed *future net revenue* estimates. It may be misleading to omit this information.

- (8) **Additional Information** - As discussed in section 2.3 above and in the instructions to *Form 51-101F1*, *NI 51-101* offers considerable flexibility in the use of the prescribed forms and the presentation of required information.

The disclosure specified in *Form 51-101F1* is the minimum disclosure required, subject to the *materiality* standard. *Reporting issuers* are free to provide additional disclosure that is not inconsistent with *NI 51-101*.

To the extent that additional, or more detailed, disclosure can be expected to assist readers in understanding and assessing the mandatory disclosure, it is encouraged. Indeed, to the extent that additional disclosure of *material* facts is necessary in order to make mandated disclosure not misleading, a failure to provide that additional disclosure would amount to a misrepresentation.

- (9) **Sample Reserves Data Disclosure** - Appendix 3 to this Companion Policy sets out an example of how certain of the *reserves data* might be presented in a manner which the CSA consider to be consistent with *NI 51-101* and *Form 51-101F1*.

The sample presentation in Appendix 3 also illustrates how certain additional information not mandated under *Form 51-101F1* might be incorporated in an annual filing.

The sample presentation in Appendix 3 is provided by way of illustration only, and is not mandatory. However, the CSA urge *reporting issuers* to review Appendix 3 and consider whether a similar presentation might be helpful for their investors.

2.8 *Form 51-101F2*

- (1) **Negative Assurance by Qualified Reserves Evaluator or Auditor** - A *qualified reserves evaluator or auditor* conducting a review may wish to express only negative assurance -- for example, in a statement such as "Nothing has come to my attention which would indicate that the *reserves data* have not been prepared in accordance with principles and definitions presented in the Canadian Oil and Gas Evaluation Handbook". This

can be contrasted with a positive statement such as an opinion that "The *reserves data* have, in all material respects, been determined and presented in accordance with the Canadian Oil and Gas *Evaluation Handbook* and are, therefore, free of material misstatement".

The CSA are of the view that statements of negative assurance can be misinterpreted as providing a higher degree of assurance than is intended or warranted.

The CSA believe that a statement of negative assurance would constitute so material a departure from the report prescribed in *Form 51-101F2* as to fail to satisfy the requirements of item 2 of section 2.1 of *NI 51-101*.

In the rare case, if any, in which there are compelling reasons for making such disclosure (e.g., a prohibition on disclosure to external parties), the CSA believe that, to avoid providing information that could be misleading, the *reporting issuer* should include in such disclosure useful explanatory and cautionary statements. Such statements should explain the limited nature of the work undertaken by the *qualified reserves evaluator or auditor* and the limited scope of the assurance expressed, noting that it does not amount to a positive opinion.

- (2) **Effective date of Evaluation** - A *qualified reserves evaluator or auditor* cannot prepare an *evaluation* using information that relates to events that occurred after the *effective date*, being the financial year-end. Information that relates to events that occurred after the year-end should not be incorporated into the forecasts. For example, information about drilling results from wells drilled in January or February, or changes in *production* that occurred after year-end date of December 31, should not be used. Even though this more recent information is available, the evaluator or auditor should not go back and change the forecast information. The forecast is to be based on the evaluator's or auditor's perception of the future as of December 31, the *effective date* of the report.

Similarly, the evaluator or auditor should not use price forecasts for a date subsequent to the year-end date of, in this example, December 31. The evaluator or auditor should use the prices that he or she forecasted on or around December 31. The evaluator or auditor should also use the December forecasts for exchange rates and inflation. Revisions to price, exchange rate or inflation rate forecasts after December 31 would have resulted from events that occurred after December 31.

PART 3 RESPONSIBILITIES OF REPORTING ISSUERS AND DIRECTORS

3.1 Reserves Committee

Section 3.4 of *NI 51-101* enumerates certain responsibilities of the board of directors of a *reporting issuer* in connection with the preparation of *oil* and *gas* disclosure.

The CSA believe that certain of these responsibilities can in many cases more appropriately be fulfilled by a smaller group of directors who bring particular experience or abilities and an *independent* perspective to the task.

Subsection 3.5(1) of *NI 51-101* permits a board of directors to delegate responsibilities (other than the responsibility to approve the content or filing of certain documents) to a committee of directors, a majority of whose members are *independent* of management. Although subsection 3.5(1) is not mandatory, the CSA encourage *reporting issuers* and their directors to adopt this approach.

3.2 Responsibility for Disclosure

NI 51-101 requires the involvement of an *independent qualified reserves evaluator or auditor* in preparing or reporting on certain *oil* and *gas* information disclosed by a *reporting issuer*, and in section 3.2 mandates the appointment of an *independent qualified reserves evaluator or auditor* to report on *reserves data*.

The CSA do not intend or believe that the involvement of an *independent qualified reserves evaluator or auditor* relieves the *reporting issuer* of responsibility for information disclosed by it for the purposes of *NI 51-101*.

PART 4 MEASUREMENT

4.1 Consistency in Dates

Section 4.2 of *NI 51-101* requires consistency in the timing of recording the effects of events or transactions for the purposes of both annual financial statements and annual *reserves data* disclosure.

To ensure that the effects of events or transactions are recorded, disclosed or otherwise reflected consistently (in respect of timing) in all public disclosure, a *reporting issuer* will wish to ensure that both its financial auditors and its *qualified reserves evaluators or auditors*, as well as its directors, are kept apprised of relevant events and transactions, and to facilitate communication between its financial auditors and its *qualified reserves evaluators or auditors*.

Sections 4.5 and 12.6 of volume 1 of the *COGE Handbook* set out procedures and guidance for the conduct of *reserves evaluations* and *reserves audits*, respectively. Section 12.6 deals with the relationship between a *reserves auditor* and the client's financial auditor. Section 4.5, in connection with *reserves evaluations*, deals somewhat differently with the relationship between the *qualified reserves evaluator or auditor* and the client's financial auditor. The CSA recommend that *qualified reserves evaluators or auditors* carry out the procedures discussed in both sections 4.5 and 12.6 of volume 1 of the *COGE Handbook*, whether conducting a *reserves evaluation* or a *reserves audit*.

PART 5 REQUIREMENTS APPLICABLE TO ALL DISCLOSURE

5.1 Application of Part 5

Part 5 of *NI 51-101* imposes requirements and restrictions that apply to all "disclosure" (or, in some cases, all written disclosure) of a type described in section 5.1 of *NI 51-101*. Section 5.1 refers to disclosure that is either

- filed by a *reporting issuer* with the *securities regulatory authority*, or
- if not filed, otherwise made to the public or made in circumstances in which, at the time of making the disclosure, the *reporting issuer* expects, or ought reasonably to expect, the disclosure to become available to the public.

As such, Part 5 applies to a broad range of disclosure including

- the annual filings required under Part 2 of *NI 51-101*,
- other continuous disclosure filings, including material change reports (which themselves may also be subject to Part 6 of *NI 51-101*),
- public disclosure documents, whether or not filed, including news releases,
- public disclosure made in connection with a distribution of securities, including a prospectus, and
- except in respect of provisions of Part 5 that apply only to written disclosure, public speeches and presentations made by representatives of the *reporting issuer* on behalf of the *reporting issuer*.

For these purposes, the CSA consider written disclosure to include any writing, map, plot or other printed representation whether produced, stored or disseminated on paper or electronically. For example, if material distributed at a company presentation refers to *BOEs*, the material should include, near the reference to *BOEs*, the cautionary statement required by paragraph 5.14(d) of *NI 51-101*.

To ensure compliance with the requirements of Part 5, the CSA encourage *reporting issuers* to involve a *qualified reserves evaluator or auditor*, or other person who is familiar with *NI 51-101* and the *COGE Handbook*, in the preparation, review or approval of all such *oil* and *gas* disclosure.

5.2 Disclosure of Reserves and Other Information

- (1) **General** - A *reporting issuer* must comply with the requirements of section 5.2 in its disclosure, to the public, of *reserves estimates* and other information of a type specified in *Form 51-101F1*. This would include, for example, disclosure of such information in a news release.
- (2) **Reserves** - *NI 51-101* does not prescribe any particular methods of estimation but it does require that a reserve estimate be prepared in accordance with the *COGE Handbook*. For example, section 5.4.3 of the *COGE Handbook* specifies that, in respect of an issuer's proved *reserves*, there is to be at least a 90 percent probability that the total remaining quantities of *oil* and *gas* to be recovered will equal or exceed the estimated total proved *reserves*.

Additional guidance on particular topics is provided below.

- (3) **Possible Reserves** - A possible reserves estimate - either alone or as part of a sum - is often a relatively large number that, by definition, has a low probability of actually being produced. For this reason, the cautionary language prescribed in subparagraph 5.2(a)(v) of *NI 51-101* must accompany the written disclosure of a possible reserves estimate.
- (4) **Probabilistic and Deterministic Evaluation Methods** - Section 5.4.3 of volume 1 of the *COGE Handbook* states that "In principle, there should be no difference between estimates prepared using probabilistic or deterministic methods".

When deterministic methods are used, in the absence of a "mathematically derived quantitative measure of probability", the classification of reserves is based on professional judgment as to the quantitative measure of certainty attained.

When probabilistic methods are used in conjunction with good engineering and geological practice, they will provide more statistical information than the conventional deterministic method. The following are a few critical criteria that an evaluator must satisfy when applying probabilistic methods:

- The evaluator must still estimate the reserves applying the definitions and using the guidelines set out in the *COGE Handbook*.
 - Entity level probabilistic reserves estimates should be aggregated arithmetically to provide reported level reserves.
 - If the evaluator also prepares aggregate reserves estimates using probabilistic methods, the evaluator should explain in the evaluation report the method used. In particular, the evaluator should specify what confidence levels were used at the entity, property, and reported (i.e., total) levels for each of proved, proved + probable and proved + probable + possible (if reported) reserves.
 - If the reporting issuer discloses the aggregate reserves that the evaluator prepared using probabilistic methods, the issuer should provide a brief explanation, near its disclosure, about the reserves definitions used for estimating the reserves, about the method that the evaluator used, and the underlying confidence levels that the evaluator applied.
- (5) **Availability of Funding** - In assigning reserves to an undeveloped property, the reporting issuer is not required to have the funding available to develop the reserves, since it may be developed by means other than the expenditure of the reporting issuer's funds (for example by a farm-out or sale). Reserves must be estimated assuming that development of the properties will occur without regard to the likely availability of funding required for that property. The reporting issuer's evaluator is not required to consider whether the reporting issuer will have the capital necessary to develop the reserves. (See section 7.8.2 of *COGE Handbook* and subparagraph 5.2(a)(iv) of *NI 51-101*.)

However, item 5.3 of *Form 51-101F1* requires a reporting issuer to discuss its expectations as to the sources and costs of funding estimated future development. If the issuer expects that the costs of funding would make development of a property unlikely, then even if reserves were assigned, it must also discuss that expectation and its plans for the property.

- (6) **Proved or Probable Undeveloped Reserves** - Proved or probable undeveloped reserves must be reported in the year in which they are recognized. If the reporting issuer does not disclose the proved or probable undeveloped reserves just because it has not yet spent the capital to develop these reserves, it may be omitting material information, thereby causing the reserves disclosure to be misleading. If the proved or probable undeveloped reserves are not disclosed to the public, then those who have a special relationship with the issuer and know about the existence of these reserves would not be permitted to purchase or sell the securities of the issuer until that information has been disclosed. If the issuer has a prospectus, the prospectus might not contain full true and plain disclosure of all material facts if it does not contain information about these proved or probable undeveloped reserves.
- (7) **Mechanical Updates** - So-called "mechanical updates" of reserves reports are sometimes created, often by rerunning previous evaluations with a new price deck. This is problematic since there may have been material changes other than price that may lead to the report being misleading. If a reporting issuer discloses the results of the mechanical update it should ensure that all relevant material changes are also disclosed to ensure that the information is not misleading.

5.3 Reserves and Resources Classification

Section 5.3 of *NI 51-101* requires that any disclosure of *reserves* or *resources* must be made using the categories and terminology as set out in the *COGE Handbook*. A chart of acceptable reserve and resource categories is appended as Appendix 2 to this Companion Policy. In addition, section 5.3 of *NI 51-101* requires that disclosure of *reserves* or *resources* must relate to the most specific category of *reserves* or *resources* in which the *reserves* or *resources* can be classified. For instance, as illustrated in Appendix 2 there are several subcategories of *discovered resources* including *recoverable resources*, *contingent resources* and *discovered unrecoverable resources*. Although the issuer may not have the necessary information to classify the *discovered resources* as *recoverable resources*, *contingent resources* or as *discovered unrecoverable resources* if the *reporting issuer* does have the necessary information they must classify into one of the subcategories. In addition, as illustrated in Appendix 2, *reserves* can be estimated using three subcategories, namely *proved*, *probable* or *possible reserves*, according to the probability that such quantities of *reserves* will actually be produced. As described in the *COGE Handbook* *proved*, *probable* and *possible reserves* represent conservative, realistic and optimistic estimates of *reserves*, respectively. Therefore any disclosure of *reserves* must be broken down into one of the three subcategories of *reserves*, namely *proved*, *probable* or *possible reserves*. For further guidance on disclosure of *reserves* and *resources* please see sections 5.2 and 5.5 of this Companion Policy.

5.4 Written Consents

Section 5.7 of *NI 51-101* restricts a *reporting issuer's* use of a report of a *qualified reserves evaluator or auditor* without written consent. The consent requirement does not apply to the direct use of the report for the purposes of *NI 51-101* (filing *Form 51-101F1*; making direct or indirect reference to the conclusions of that report in the filed *Form 51-101F1* and *Form 51-101F3*; and identifying the report in the mandatory notice under section 2.2). The *qualified reserves evaluator or auditor* retained to report to a *reporting issuer* for the purposes of *NI 51-101* is expected to anticipate these uses of the report. However, further use of the report (for example, in a securities offering document or in other news releases) would require written consent.

5.5 Disclosure of Resources

- (1) **Disclosure of Resources Generally** -The disclosure of *resources*, excluding *proved* and *probable reserves*, is not mandatory under *NI 51-101*, except that a *reporting issuer* must make disclosure concerning its unproved *properties* and *resource* activities in its annual filings as described in Part 6 of *Form 51-101F1*. Additional disclosure beyond this is voluntary and must comply with section 5.9 of *NI 51-101* if *anticipated results* from the *resources* are voluntarily disclosed.

For prospectuses, the general securities disclosure obligation of "full, true and plain" disclosure of all *material* facts would require the disclosure of *reserves* or *resources* that are *material* to the issuer, even if the disclosure is not mandated by *NI 51-101*. Any such disclosure should be based on supportable analysis.

Disclosure of *resources* requires the use of statistical measures that may be unfamiliar to a user. It is the responsibility of the evaluator and the *reporting issuer* to be familiar with these measures and for the *reporting issuer* to be able to explain them to investors. Information on statistical measures may be found in the *COGE Handbook* (section 9 of volume 1 and section 4 of volume 2) and in the extensive technical literature⁴ on the subject.

- (2) **Disclosure of Anticipated Results under Subsection 5.9(1) of NI 51-101** - If a *reporting issuer* voluntarily discloses *anticipated results* from *resources* that are not classified as *reserves*, it must disclose certain basic information concerning the *resources*, which is set out in subsection 5.9(1) of *NI 51-101*. Additional disclosure requirements arise if the *anticipated results* disclosed by the issuer include an estimate of a *resource* quantity or associated value, as set out below in subsection 5.5(3).

If the *reporting issuer* discloses the estimated value of an *unproved property* other than a value attributable to an estimated *resource* quantity, then the issuer must disclose the basis of the calculation of the value, in accordance with paragraph 5.9(1)(e). This type of value is typically based on petroleum land management practices that consider activities and land prices in nearby areas. If done *independently*, it would be done by a valuator with petroleum land management expertise who would generally be a member of a *professional organization* such as the Canadian Association of Petroleum Landmen. This is distinguishable from the

⁴ For example, Determination of Oil and Gas Reserves, Monograph No. 1, Chapter 22, Petroleum Society of CIM, Second Edition 2004. (ISBN 0-9697990-2-0)) Newendorp, P., & Schuyler, J., 2000, Decision Analysis for Petroleum Exploration, Planning Press, Aurora, Colorado (ISBN 0-9664401-1-0). Rose, P. R., Risk Analysis and Management of Petroleum Exploration Ventures, AAPG Methods in Exploration Series No. 12, AAPG (ISBN 0-89181-062-1).

determination of a value attributable to an estimated *resource* quantity, as contemplated in subsection 5.9(2). This latter type of value estimate must be prepared by a *qualified reserves evaluator or auditor*.

The calculation of an estimated value described in paragraph 5.9(1)(e) may be based on one or more of the following factors:

- the acquisition cost of the *unproved property* to the *reporting issuer*, provided there have been no *material* changes in the *unproved property*, the surrounding *properties*, or the general *oil* and *gas* economic climate since acquisition;
- recent sales by others of interests in the same *unproved property*;
- terms and conditions, expressed in monetary terms, of recent farm-in agreements related to the *unproved property*;
- terms and conditions, expressed in monetary terms, of recent work commitments related to the *unproved property*;
- recent sales of similar *properties* in the same general area;
- recent exploration and discovery activity in the general area;
- the remaining term of the *unproved property*; or
- burdens (such as overriding royalties) that impact on the value of the *property*.

The *reporting issuer* must disclose the basis of the calculation of the value of the *unproved property*, which may include one or more of the above-noted factors.

The *reporting issuer* must also disclose whether the value was prepared by an *independent* party. In circumstances in which paragraph 5.9(1)(e) applies and where the value is prepared by an *independent* party, in order to ensure that the *reporting issuer* is not making public disclosure of misleading information, the CSA expect the *reporting issuer* to provide all relevant information to the valuator to enable the valuator to prepare the estimate.

(3) **Disclosure of an Estimate of Quantity or Associated Value of a Resource under Subsection 5.9(2) of NI 51-101 -**

(a) **Overview of Subsection 5.9(2) of NI 51-101**

Pursuant to subsection 5.9(2) of *NI 51-101*, if a *reporting issuer* discloses an estimate of a *resource* quantity or an associated value, the estimate must have been prepared by a *qualified reserves evaluator or auditor*. The *COGE Handbook* recommends the use of probabilistic *evaluation* methods for making *resource* estimates, and although it does not provide detailed guidance there is a considerable amount of technical literature on the subject.

In addition, pursuant to section 5.3 and subsection 5.9(2) of *NI 51-101*, the *reporting issuer* must ensure that the estimated *resource* relates to the most specific category of *resources* in which the *resource* can be classified.

Subsection 5.9(2) requires the *reporting issuer* to disclose certain information in addition to that prescribed in subsection 5.9(1) of *NI 51-101* to assist recipients of the disclosure in understanding the nature of risks associated with the estimate. This information includes a definition of the *resource* category used for the estimate, disclosure of factors relevant to the estimate and cautionary language.

(b) **Definitions of Resource Categories**

For the purpose of complying with the requirement of defining the *resource* category, the *reporting issuer* must ensure that disclosure of the definition is consistent with the *resource* categories and terminology set out in the *COGE Handbook*, pursuant to section 5.3 of *NI 51-101*. A chart of the *resource* categories set out in the *COGE Handbook*, is appended as Appendix 2 to this Companion Policy for illustrative purposes. The definitions of the following *resource* categories (for *resources* that

cannot be currently classified as *reserves*) are set out in the Glossary contained in Appendix 1 of this Companion Policy and in section 5 of volume 1 of the *COGE Handbook*:

- *discovered resources*;
- *discovered unrecoverable resources*;
- *contingent resources*;
- *undiscovered resources*;
- *undiscovered unrecoverable resources*; and
- prospective resources.

A *reporting issuer* may wish to report *reserves* or *resources* of *oil* or *gas* as “in-place volumes”. By definition, *reserves* of any type, *contingent resources* and *prospective resources* are estimates of volumes that are recoverable or potentially recoverable and, as such, cannot be described as being “in-place”. Terms such as “potential *reserves*”, “undiscovered *reserves*”, “*reserves* in place”, “in-place *reserves*” or similar terms must not be used because they are incorrect and misleading. The disclosure of *reserves* or *resources* must be consistent with the *reserves* and *resources* terminology and categories set out in the *COGE Handbook*, pursuant to section 5.3 of *NI 51-101*.

The *reporting issuer* can report other categories of *resources*, such as discovered and *undiscovered resources*, as in-place volumes. However, the issuer should caution the reader that this does not represent recoverable volumes.

(c) Application of Subsection 5.9(2) of NI 51-101

If the *reporting issuer* discloses an estimate of a *resource* quantity or associated value, the *reporting issuer* must additionally disclose the following:

- (i) a definition of the *resource* category used for the estimate;
- (ii) the *effective date* of the estimate;
- (iii) significant positive and negative factors relevant to the estimate;
- (iv) an estimated percentage probability relating to recovery of the *resource* as prescribed by subparagraph 5.9(2)(c)(iv) of *NI 51-101*;
- (v) the contingencies which prevent the classification of a contingent *resource* as a *reserve*; and
- (vi) cautionary language as prescribed by subparagraph 5.9(2)(c)(vi) of *NI 51-101*.

The *resource* estimate may be disclosed as a single quantity such as a median or mean. Frequently, however, the estimate consists of three values that reflect a range of reasonable likelihoods (the low value reflecting a conservative estimate, the middle value being the median estimate, and the high value being an optimistic estimate).

Guidance concerning defining the *resource* category is provided above in section 5.3 and paragraph 5.5(3)(b) of this Companion Policy.

With respect to disclosure of an estimated percentage probability in subparagraph 5.9(2)(c)(iv) of *NI 51-101*, this requirement conveys to the investor the uncertainty associated with the estimates of *resources*. It also elaborates on the requirement in paragraph 5.9(1)(d) of *NI 51-101* to disclose the risks and probability of success in recovering the *resource*. In the case of a *discovered resources* or a subset of *discovered resources*, the *reporting issuer* must disclose the percentage probability of commercially extracting the *resource*. In the case of an *undiscovered resource* or a subset of this *resource*, the *reporting issuer* must disclose percentage probability of discovering the hydrocarbons in sufficient quantity for them to be tested to the surface, i.e. the probability of the *undiscovered resource* maturing into a *contingent resource*.

No specific method of estimating the probabilities is prescribed, It may be acceptable to make the disclosure of probabilities as an interval (e.g., from 20 to 30%) that captures the most likely outcome. However, this interval must be meaningful and there must be adequate disclosure concerning the meaning of the interval. It would not, for example be acceptable to quote a range that, although it captures all possible outcomes, is so large that it does not provide meaningful information on the uncertainty of an estimate.

The general disclosure requirements of paragraph 5.9(2)(c) of *NI 51-101* may be illustrated by an example. If a *reporting issuer* discloses, for example, an estimate of a volume of its *bitumen* which is a *contingent resource* to the issuer, the disclosure would include information of the following nature:

The reporting issuer holds a [●] interest in [provide description and location of interest]. As of [●] date, it estimates that, in respect of this interest, it has [●] bbls of *bitumen*, which would be classified as a contingent resource. A contingent resource is defined as that quantity of *oil* estimated on a given date to be potentially recoverable from known accumulations but is not currently economic. There is no certainty that it will be economically viable or technically feasible to produce any portion of the resource. The probability of a commercial project proceeding is estimated to be [●%] [OR Management is unable to provide a firm estimate but the probability is estimated to lie between [●%] and [●%]. The contingencies which currently prevent the classification of the resource as a reserve are [state specific capital costs required to render *production* economic, applicable regulatory considerations, pricing, specific supply costs, technological considerations, and/or other relevant factors]. A significant factor relevant to the estimate is [e.g.] an existing legal dispute concerning title to the interest.

To the extent that this information is provided in a previously filed document, and it relates to the same interest in *resources*, the issuer can omit disclosure of the percentage probability relating to recovery as well as significant positive and negative factors relevant to the estimate and the contingencies which prevent the classification of the *resource* as a *reserve*. However, the issuer must make reference in the current disclosure to the title and date of the previously filed document.

5.6 Analogous Information

A *reporting issuer* may wish to base an estimate on, or include comparative *analogous information* for their area of interest, such as *reserves*, *resources*, and *production*, from *fields* or wells, in nearby or geologically similar areas. Particular care must be taken in using and presenting this type of information. Using only the best wells or *fields* in an area, or ignoring dry holes, for instance, may be particularly misleading. It is important to present a factual and balanced view of the information being provided.

The *reporting issuer* must comply with the disclosure requirements of section 5.10 of *NI 51-101*, when it discloses *analogous information*, as that term is broadly defined in *NI 51-101*, for an area which includes an area of the *reporting issuer's* area of interest. Pursuant to subsection 5.10(2) of *NI 51-101*, if the issuer discloses an estimate of its own *reserves* or *resources* based on an extrapolation from the *analogous information*, or if the *analogous information* itself is an estimate of its own *reserves* or *resources*, the issuer must ensure the estimate is prepared in accordance with the *COGE Handbook* and disclosed in accordance with *NI 51-101* generally. For example, in respect of a *reserves* estimate, the estimate must be classified and prepared in accordance with the *COGE Handbook* by a *qualified reserves evaluator or auditor* and must otherwise comply with the requirements of section 5.2 of *NI 51-101*.

5.7 Consistent Use of Units of Measurement

Reporting issuers should be consistent in their use of units of measurement within and between disclosure documents, to facilitate understanding and comparison of the disclosure. For example, *reporting issuers* should not, without compelling reason, switch between imperial units of measure (such as barrels) and Système International (SI) units of measurement (such as tonnes) within or between disclosure documents. Issuers should refer to Appendices B and C of volume 1 of the *COGE Handbook* for the proper reporting of units of measurement.

In all cases, in accordance with section 5.2 and section 5.3 of *NI 51-101*, *reporting issuers* should apply the relevant terminology and unit prefixes set out in the *COGE Handbook*.

5.8 BOEs and McfGEs

Section 5.14 of *NI 51-101* sets out requirements that apply if a *reporting issuer* chooses to make disclosure using units of equivalency such as *BOEs* or *McfGEs*. The requirements include prescribed methods of calculation and cautionary

disclosure as to the possible limitations of those calculations. Section 13 of the *COGE Handbook*, under the heading "Barrels of Oil Equivalent", provides additional guidance.

5.9 Finding and Development costs

Section 5.15 of *NI 51-101* sets out requirements that apply if a *reporting issuer* chooses to make disclosure of finding and *development costs*.

Because the prescribed methods of calculation under section 5.15 involve the use of *BOEs*, section 5.14 of *NI 51-101* necessarily applies to disclosure of finding and *development costs* under section 5.15. As such, the finding and development cost calculations must apply a conversion ratio as specified in section 5.14 and the cautionary disclosure prescribed in section 5.14 will also be required.

BOEs are based on imperial units of measurement. If the *reporting issuer* uses other units of measurements (such as SI or "metric" measures), any corresponding departure from the requirements of section 5.15 should reflect the use of units other than *BOEs*.

5.10 Prospectus Disclosure

In addition to the general disclosure requirements in *NI 51-101* which apply to prospectuses, the following commentary provides additional guidance on topics of frequent enquiry.

- (1) **Significant Acquisitions** - To the extent that an issuer engaged in *oil and gas activities* discloses a significant acquisition in its prospectus, it must disclose sufficient information for a reader to determine how the acquisition affected the *reserves data* and other information previously disclosed in the issuer's *Form 51-101F1*. This requirement stems from Part 6 of *NI 51-101* with respect to material changes. This is in addition to specific prospectus requirements for financial information satisfying significant acquisitions.
- (2) **Disclosure of Resources** - The disclosure of *resources*, excluding proved and *probable reserves*, is generally not mandatory under *NI 51-101*, except for certain disclosure concerning the issuer's unproved *properties* and *resource* activities as described in Part 6 of *Form 51-101F1*, which information would be incorporated into the prospectus. Additional disclosure beyond this is voluntary and must comply with sections 5.9 and 5.10 of *NI 51-101*, as applicable. However, the general securities disclosure obligation of "full, true, and plain" disclosure of all *material* facts in a prospectus would require the disclosure of *resources* that are *material* to the issuer, even if the disclosure is not mandated by *NI 51-101*. Any such disclosure should be based on supportable analysis.
- (3) **Proved or Probable Undeveloped reserves** - Further to the guidance provided in subsection 5.2(4) of this Companion Policy, proved or probable *undeveloped reserves* must be reported in the year in which they are recognized. If the *reporting issuer* does not disclose the proved or probable *undeveloped reserves* just because it has not yet spent the capital to develop these *reserves*, it may be omitting *material* information, thereby causing the *reserves* disclosure to be misleading. If the issuer has a prospectus, the prospectus might not contain full, true and plain disclosure of all *material* facts if it does not contain information about these proved *undeveloped reserves*.
- (4) **Reserves Reconciliation in an Initial Public Offering** - In an initial public offering, if the issuer does not have a *reserves* report as at its prior year-end, or if this report does not provide the information required to carry out a *reserves* reconciliation pursuant to item 4.1 of *Form 51-101F1*, the CSA may consider granting relief from the requirement to provide the *reserves* reconciliation. A condition of the relief may include a description in the prospectus of relevant changes in any of the categories of the *reserves* reconciliation.
- (5) **Relief to Provide More Recent Form 51-101F1 Information in a Prospectus** - If an issuer is filing a preliminary prospectus and wishes to disclose *reserves data* and other *oil and gas* information as at a more recent date than its applicable year-end date, the CSA may consider relieving the issuer of the requirement to disclose the *reserves data* and other information as at year-end.

An issuer may determine that its obligation to provide full, true and plain disclosure obliges it to include in its prospectus *reserves data* and other *oil and gas* information as at a date more recent than specified in the prospectus requirements. The prospectus requirements state that the information must be as at the issuer's most recent financial year-end in respect of which the prospectus includes financial statements. The prospectus requirements, while certainly not presenting an obstacle to such more current disclosure, would nonetheless require that the corresponding information also be provided as at that financial year-end.

We would consider granting relief on a case-by-case basis to permit an issuer in these circumstances to include in its prospectus the *oil* and *gas* information prepared with an *effective date* more recent than the financial year-end date, without also including the corresponding information effective as at the year-end date. A consideration for granting this relief may include disclosure of *Form 51-101F1* information with an *effective date* that coincides with the date of interim financial statements. The issuer should request such relief in the covering letter accompanying its preliminary prospectus. The grant of the relief would be evidenced by the prospectus receipt.

PART 6 MATERIAL CHANGE DISCLOSURE

6.1 Changes from Filed Information

Part 6 of *NI 51-101* requires the inclusion of specified information in disclosure of certain material changes.

The information to be filed each year under Part 2 of *NI 51-101* is prepared as at, or for a period ended on, the *reporting issuer's* most recent financial year-end. That date is the *effective date* referred to in subsection 6.1(1) of *NI 51-101*. When a material change occurs after that date, the filed information may no longer, as a result of the material change, convey meaningful information, or the original information may have become misleading in the absence of updated information.

Part 6 of *NI 51-101* requires that the disclosure of the material change include a discussion of the *reporting issuer's* reasonable expectation of how the material change has affected the issuer's *reserves data* and other information contained in its filed disclosure. This would not necessarily require that an *evaluation* be carried out. However, the *reporting issuer* should ensure it complies with the general disclosure requirements set out in Part 5, as applicable. For example, if the material change report discloses an updated *reserves* estimate, this should be prepared in accordance with the *COGE Handbook* and by a *qualified reserves evaluator or auditor*.

This material change disclosure can reduce the likelihood of investors being misled, and maintain the usefulness of the original filed *oil* and *gas* information when the two are read together.

APPENDIX 1
to
COMPANION POLICY 51-101CP
STANDARDS OF DISCLOSURE
FOR OIL AND GAS ACTIVITIES

GLOSSARY

Section 1.1 of National Instrument 51-101 *Standards of Disclosure for Oil and Gas Activities* ("NI 51-101") defines a number of terms used in NI 51-101, Form 51-101F1, Form 51-101F2, Form 51-101F3 and this Companion Policy. Section 1.2 of NI 51-101 provides that terms used in the *Instrument* but not defined in the *Instrument*, NI 14-101 or the securities statute in the *jurisdiction* have the meaning or interpretation, if any, set out in the *COGE Handbook*.

This Appendix explains much of the terminology used in NI 51-101 and its accompanying documents. It is provided only as a convenience to users of NI 51-101, to assist them in better understanding the purpose and application of NI 51-101.

The explanations in this Appendix are derived from a number of sources, including section 1.1 of NI 51-101, NI 14-101 and the *COGE Handbook*. If the explanation is derived from another source, the source document is indicated in square brackets after the explanation (even if the explanation is not verbatim to the source document).

Background or further guidance may be found in the source documents:

- *CICA Accounting Guideline 16* is included in the *CICA Handbook*, which can be obtained from the CICA.
- The *COGE Handbook* can be obtained from the Petroleum Society of the Canadian Institute of Mining, Metallurgy & Petroleum (Telephone (403) 237-5112; email info@petsoc.org; or www.petsoc.org).
- *FAS 19* can be obtained from FASB, the United States Financial Accounting Standards Board.
- NI 14-101 can be viewed on the websites of a number of *securities regulatory authorities*.

DEFINITIONS

The terms (and plural, singular or other grammatical variants thereof) set out in the left column below have the meanings respectively set out in the right column.

Defined Term	Meaning
1934 Act	The Securities Exchange Act of 1934 of the United States of America, as amended from time to time. [NI 14-101]
Annual information form	A completed Form 51-102F2 <i>Annual Information Form</i> , or in the case of an <i>SEC</i> issuer (as defined in National Instrument 51-102 Continuous Disclosure Obligations) a completed Form 51-102F2 or an annual report or transition report under the 1934 Act on Form 10-K, Form 10-KSB or Form 20-F. [NI 51-102]
Analogous information	Information about an area outside the area the <i>reporting issuer</i> has an interest or intends to acquire an interest, which is referenced by the <i>reporting issuer</i> for the purpose, in the opinion of a reasonable person, of drawing a comparison or conclusion to an area in which the <i>reporting issuer</i> has an interest or intends to acquire an interest and may include, without limitation: <ul style="list-style-type: none">• historic information concerning reserves;• estimates of the volume or value of reserves;• historic information concerning resources;• estimates of the volume or value of resources;• historic production amounts;• production estimates; or• information concerning a field, well, basin or reservoir. [NI 51-102]
Anticipated results	Information which may, in the opinion of a reasonable person, indicate the potential value or quantities of <i>resources</i> in respect of the <i>reporting issuer's resources</i> or a portion of its <i>resources</i> which may include, without limitation: <ul style="list-style-type: none">• an estimate of volume;• an estimate of value;• areal extent;• anticipated pay thickness;• flow rates; or• hydrocarbon content. [NI 51-102]
Associated gas	The <i>gas</i> cap overlying a <i>crude oil</i> accumulation in a <i>reservoir</i> . See <i>gas</i> .
Audit	In relation to <i>reserves data</i> , the process whereby an <i>independent</i> qualified <i>reserves</i> auditor carries out procedures designed to allow the <i>independent</i> qualified <i>reserves</i> auditor to provide reasonable assurance, in the form of an opinion that the <i>reporting issuer's reserves data</i> (or specific parts thereof) have, in all <i>material</i> respects, been determined and presented in accordance with the <i>COGE Handbook</i> and are, therefore, free of <i>material</i> misstatement. Because of <ul style="list-style-type: none">(a) the nature of the subject matter (estimates of future results with many uncertainties);(b) the fact that the <i>independent</i> qualified <i>reserves</i> auditor assesses the qualifications and experience of the <i>reporting issuer's</i> staff, assesses the <i>reporting issuer's</i> systems, procedures and controls and relies on the competence of the <i>reporting issuer's</i> staff and the appropriateness of the <i>reporting issuer's</i> systems, procedures and controls; and

Defined Term	Meaning
	<p>(c) the fact that tests and samples (involving examination of underlying documentation supporting the determination of the <i>reserves</i> and <i>future net revenue</i>) as opposed to complete <i>evaluations</i>, are involved;</p> <p>the level of assurance is designed to be high, though not absolute.</p> <p>The level of assurance cannot be described with numeric precision. It will usually be less than, but reasonably close to, that of an <i>independent evaluation</i> and considerably higher than that of a review.</p> <p>[COGE Handbook]</p>
Bbl	Barrel.
Bitumen	A highly viscous <i>oil</i> which is too thick to flow in its native state, and which cannot be produced without altering its viscosity. The density of <i>bitumen</i> is generally less than 10 degrees API (as that term is defined by the American Petroleum Institute).
BOEs	Barrels of <i>oil</i> equivalent. [NI 51-101 and COGE Handbook]
Canadian GAAP	Generally accepted accounting principles determined with reference to the <i>CICA Handbook</i> . [NI 14-101]
CICA	The Canadian Institute of Chartered Accountants. [NI 51-101]
CICA Accounting Guideline 16	Accounting Guideline AcG-16 "Oil and gas accounting - full cost" included in the <i>CICA Handbook</i> , as amended from time to time. [NI 51-101]
CICA Handbook	The Handbook of the <i>CICA</i> , as amended from time to time.
COGE Handbook	The "Canadian Oil and Gas <i>Evaluation Handbook</i> " prepared jointly by The Society of Petroleum <i>Evaluation Engineers</i> (Calgary Chapter) and the Canadian Institute of Mining, Metallurgy & Petroleum (Petroleum Society) as amended from time to time.
Constant prices and costs	<p>Prices and costs used in an estimate that are:</p> <p>(a) the <i>reporting issuer's</i> prices and costs as at the <i>effective date</i> of the estimation, held constant throughout the estimated lives of the <i>properties</i> to which the estimate applies;</p> <p>(b) if, and only to the extent that, there are fixed or presently determinable future prices or costs to which the <i>reporting issuer</i> is legally bound by a contractual or other obligation to supply a physical product, including those for an extension period of a contract that is likely to be extended, those prices or costs rather than the prices and costs referred to in paragraph (a).</p> <p>For the purpose of paragraph (a), the <i>reporting issuer's</i> prices will be the posted price for <i>oil</i> and the spot price for <i>gas</i>, after historical adjustments for transportation, gravity and other factors.</p> <p>[COGE Handbook]</p>
Contingent resources	<i>Contingent resources</i> are defined as those quantities of <i>oil</i> and <i>gas</i> estimated on a given day to be potentially recoverable from known accumulations but are not currently economic. [COGE Handbook]

Defined Term	Meaning
Crude oil	<p>A mixture that consists mainly of pentanes and heavier hydrocarbons, which may contain sulphur and other non-hydrocarbon compounds, that is recoverable at a well from an underground <i>reservoir</i> and that is liquid at the conditions under which its volume is measured or estimated. It does not include <i>solution gas</i> or <i>natural gas</i> liquids.</p> <p>[COGE Handbook]</p>
CSA	<p>The Canadian Securities Administrators, an association consisting of the thirteen <i>securities regulatory authorities</i> in Canada.</p>
Developed non-producing reserves	<p><i>Developed non-producing reserves</i> are those <i>reserves</i> that either have not been on <i>production</i>, or have previously been on <i>production</i>, but are shut-in, and the date of resumption of <i>production</i> is unknown. [COGE Handbook]</p>
Developed producing reserves	<p><i>Developed producing reserves</i> are those <i>reserves</i> that are expected to be recovered from completion intervals open at the time of the estimate. These <i>reserves</i> may be currently producing or, if shut-in, they must have previously been on <i>production</i>, and the date of resumption of <i>production</i> must be known with reasonable certainty. [COGE Handbook]</p>
Developed reserves	<p><i>Developed reserves</i> are those <i>reserves</i> that are expected to be recovered from existing wells and installed facilities or, if facilities have not been installed, that would involve a low expenditure (for example, when compared to the cost of drilling a well) to put the <i>reserves</i> on <i>production</i>. The developed category may be subdivided into producing and non-producing. [COGE Handbook]</p>
Development costs	<p>Costs incurred to obtain access to <i>reserves</i> and to provide facilities for extracting, treating, gathering and storing the <i>oil</i> and <i>gas</i> from the <i>reserves</i>.</p> <p>More specifically, <i>development costs</i>, including applicable <i>operating costs of support equipment and facilities</i> and other costs of development activities, are costs incurred to:</p> <ul style="list-style-type: none"> <li data-bbox="475 1234 1349 1369">(a) gain access to and prepare well locations for drilling, including surveying well locations for the purpose of determining specific development drilling sites, clearing ground, draining, road building, and relocating public roads, <i>gas</i> lines and power lines, to the extent necessary in developing the <i>reserves</i>; <li data-bbox="475 1398 1365 1474">(b) drill and equip <i>development wells</i>, development type <i>stratigraphic test wells</i> and <i>service wells</i>, including the costs of platforms and of well equipment such as casing, tubing, pumping equipment and the wellhead assembly; <li data-bbox="475 1503 1365 1617">(c) acquire, construct and install <i>production</i> facilities such as flow lines, separators, treaters, heaters, manifolds, measuring devices and <i>production</i> storage tanks, <i>natural gas</i> cycling and processing plants, and central utility and waste disposal systems; and <li data-bbox="475 1646 1295 1671">(d) provide improved recovery systems. [CICA Accounting Guideline 16]
Development well	<p>A well drilled inside the established limits of an <i>oil</i> or <i>gas reservoir</i>, or in close proximity to the edge of the <i>reservoir</i>, to the depth of a stratigraphic horizon known to be productive. [CICA Accounting Guideline 16]</p>

Defined Term	Meaning
Discovered resources	<i>Discovered resources</i> are those quantities of <i>oil</i> and <i>gas</i> estimated on a given date to be remaining in, plus those quantities already produced from, known accumulations. <i>Discovered resources</i> are divided into economic and uneconomic categories, with the estimated future recoverable portion classified as <i>reserves</i> and <i>contingent resources</i> , respectively. [COGE Handbook]
Discovered unrecoverable resources	<i>Discovered unrecoverable resources</i> are those quantities of <i>discovered resources</i> that are neither technically possible nor economic to produce. They represent quantities of petroleum that are in the <i>reservoir</i> after <i>production</i> has ceased, and in known accumulations that are not deemed recoverable due to lack of technical and economic recovery processes. [COGE Handbook]
Effective date	In respect of information, the date as at which, or for the period ended on which, the information is provided.
Evaluation	In relation to <i>reserves data</i> , the process whereby an economic analysis is made of a <i>property</i> to arrive at an estimate of a range of <i>net</i> present values of the estimated <i>future net revenue</i> resulting from the <i>production</i> of the <i>reserves</i> associated with the <i>property</i> . [COGE Handbook]
Exploration costs	<p>Costs incurred in identifying areas that may warrant examination and in examining specific areas that are considered to have <i>prospects</i> that may contain <i>oil</i> and <i>gas reserves</i>, including costs of drilling <i>exploratory wells</i> and exploratory type <i>stratigraphic test wells</i>.</p> <p><i>Exploration costs</i> may be incurred both before acquiring the related <i>property</i> (sometimes referred to in part as "prospecting costs") and after acquiring the <i>property</i>. <i>Exploration costs</i>, which include applicable <i>operating costs</i> of <i>support equipment and facilities</i> and other costs of exploration activities, are:</p> <ul style="list-style-type: none"> (a) costs of topographical, geochemical, geological and geophysical studies, rights of access to <i>properties</i> to conduct those studies, and salaries and other expenses of geologists, geophysical crews and others conducting those studies (collectively sometimes referred to as "geological and geophysical costs"); (b) costs of carrying and retaining unproved <i>properties</i>, such as delay rentals, taxes (other than income and capital taxes) on <i>properties</i>, legal costs for title defence, and the maintenance of land and <i>lease</i> records; (c) dry hole contributions and bottom hole contributions; (d) costs of drilling and equipping <i>exploratory wells</i>; and (e) costs of drilling exploratory type <i>stratigraphic test wells</i>. <p>[CICA Accounting Guideline 16]</p>
Exploratory well	A well that is not a <i>development well</i> , a <i>service well</i> or a <i>stratigraphic test well</i> . [CICA Accounting Guideline 16]
FAS 19	<i>FASB</i> Statement of Financial Accounting Standards No. 19 "Financial Accounting and Reporting by Oil and Gas Producing Companies", as amended from time to time. [NI 51-101]
FASB	United States Financial Accounting Standards Board.

Defined Term	Meaning
Field	<p>An area consisting of a single <i>reservoir</i> or multiple <i>reservoirs</i> all grouped on or related to the same individual geological structural feature and/or stratigraphic condition.</p> <p>There may be two or more <i>reservoirs</i> in a <i>field</i> that are separated vertically by intervening impervious strata or laterally by local geologic barriers, or both. <i>Reservoirs</i> that are associated by being in overlapping or adjacent <i>fields</i> may be treated as a single or common operational <i>field</i>. The geological terms "structural feature" and "stratigraphic condition" are intended to denote localized geological features, in contrast to broader terms such as "basin", "trend", "province", "play" or "area of interest". [COGE Handbook]</p>
Forecast prices and costs	<p>Future prices and costs that are:</p> <ul style="list-style-type: none"> (a) generally accepted as being a reasonable outlook of the future; (b) if, and only to the extent that, there are fixed or presently determinable future prices or costs to which the <i>reporting issuer</i> is legally bound by a contractual or other obligation to supply a physical product, including those for an extension period of a contract that is likely to be extended, those prices or costs rather than the prices and costs referred to in paragraph (a).
Foreign geographic area	<p>A geographic area outside North America within one country or including all or portions of a number of countries.</p>
Form 51-101F1	<p>Form 51-101F1 <i>Statement of Reserves Data and Other Oil and Gas Information</i>.</p>
Form 51-101F2	<p>Form 51-101F2 <i>Report on Reserves Data by Independent Qualified Reserves Evaluator or Auditor</i>.</p>
Form 51-101F3	<p>Form 51-101F3 <i>Report of Management and Directors on Oil and Gas Disclosure</i>.</p>
Future income tax expenses	<p><i>Future income tax expenses</i> estimated (generally, year-by-year):</p> <ul style="list-style-type: none"> (a) making appropriate allocations of estimated unclaimed costs and losses carried forward for tax purposes, between <i>oil and gas activities</i> and other business activities; (b) without deducting estimated future costs (for example, Crown royalties) that are not deductible in computing taxable income; (c) taking into account estimated tax credits and allowances (for example, royalty tax credits); and (d) applying to the future pre-tax <i>net</i> cash flows relating to the <i>reporting issuer's oil and gas activities</i> the appropriate year-end statutory tax rates, taking into account future tax rates already legislated.
Future net revenue	<p>The estimated <i>net</i> amount to be received with respect to the development and <i>production</i> of <i>reserves</i> (including <i>synthetic oil</i>, coal bed methane and other non-conventional <i>reserves</i>) estimated using:</p> <ul style="list-style-type: none"> (a) <i>forecast prices and costs</i>; or (b) <i>constant prices and costs</i>. <p>This <i>net</i> amount is computed by deducting, from estimated future revenues:</p>

Defined Term	Meaning
Gas (or natural gas)	<ul style="list-style-type: none"> • estimated amounts of future royalty obligations; • costs related to the development and <i>production</i> of <i>reserves</i>; • <i>well abandonment costs</i>; and • <i>future income tax expenses</i>, unless otherwise specified in <i>NI 51-101, Form 51-101F1</i> or <i>Form 51-101F2</i>. <p>Corporate general and administrative expenses and financing costs are not deducted. <i>Net</i> present values of <i>future net revenue</i> may be calculated using a discount rate or without discount.</p>
	<p>The lighter hydrocarbons and associated non-hydrocarbon substances occurring naturally in an underground <i>reservoir</i>, which under atmospheric conditions are essentially <i>gases</i> but which may contain <i>natural gas</i> liquids.</p> <p>Gas can exist in a <i>reservoir</i> either</p> <p>(a) dissolved in <i>crude oil (solution gas)</i>; or</p> <p>(b) in a <i>gaseous phase (associated gas or non-associated gas)</i>.</p> <p>Non-hydrocarbon substances may include hydrogen sulphide, carbon dioxide and nitrogen. [COGE Handbook]</p>
Gross	<p>(a) In relation to a <i>reporting issuer's</i> interest in <i>production</i> or <i>reserves</i>, its "<i>company gross reserves</i>", which are the <i>reporting issuer's</i> working interest (operating or non-operating) share before deduction of royalties and without including any royalty interests of the <i>reporting issuer</i>. [COGE Handbook]</p> <p>(b) In relation to wells, the total number of wells in which a <i>reporting issuer</i> has an interest.</p> <p>(c) In relation to <i>properties</i>, the total area of <i>properties</i> in which a <i>reporting issuer</i> has an interest.</p>
Heavy oil	<p>In respect of <i>reserves</i> or <i>production</i>:</p> <p>(a) in a <i>jurisdiction</i> that has a royalty regime specific to <i>heavy oil</i>, "<i>heavy oil</i>" is oil that qualifies for royalties specific to <i>heavy oil</i>; or</p> <p>(b) in a <i>jurisdiction</i> that has no royalty regime specific to <i>heavy oil</i>, "<i>heavy oil</i>" is oil with a density between 10 to 22.3 degrees API (as that term is defined by the American Petroleum Institute). [COGE Handbook]</p>
Independent	<p>In respect of the relationship between a <i>reporting issuer</i> and a <i>qualified reserves evaluator</i> or <i>auditor</i>, the term has the meaning set out in the <i>COGE Handbook</i>.</p>
Instrument (or NI 51-101)	<p>NI 51-101 <i>Standards of Disclosure for Oil and Gas Activities</i>.</p>
Jurisdiction	<p>For the purposes of <i>NI 51-101</i>, a province or territory of Canada. [NI 14-101]</p>
Lease	<p>An agreement granting to the lessee rights to explore, develop and exploit a <i>property</i>.</p>

Defined Term	Meaning
Marketable	In respect of <i>reserves</i> or sales of <i>oil, gas</i> or associated by-products, the volume of <i>oil, gas</i> or associated by-products measured at the point of sale to a third party, or of transfer to another division of the issuer for treatment prior to sale to a third party. For <i>gas</i> , this may occur either before or after removal of <i>natural gas</i> liquids. For heavy <i>oil</i> or <i>bitumen</i> , this is before the addition of diluent.
Material (or materiality)	For the purposes of <i>NI 51-101</i> , information is <i>material</i> , in respect of a <i>reporting issuer</i> , if it would be likely to influence a decision by a reasonable investor to buy, hold or sell a security of the <i>reporting issuer</i> .
	This meaning differs from the definitions of "material change" and "material fact" in <i>securities legislation</i> , but is consistent with the meaning of the term as used, for accounting purposes, in the <i>CICA Handbook</i> .
	[<i>NI 51-101</i>]
Mcf	Thousand cubic feet.
McfGE	Thousand cubic feet of <i>gas</i> equivalent. [<i>NI 51-101</i> and <i>COGE Handbook</i>]
Natural gas	<i>Gas</i> . [<i>COGE Handbook</i>]
Natural gas liquids	Those hydrocarbon components that can be recovered from <i>natural gas</i> as liquids including, but not limited to, ethane, propane, butanes, pentanes plus, condensate and small quantities of non-hydrocarbons. [<i>COGE Handbook</i>]
Net	<p>(a) In relation to a <i>reporting issuer's</i> interest in <i>production</i> or <i>reserves</i>, the <i>reporting issuer's</i> working interest (operating or non-operating) share after deduction of royalty obligations, plus the <i>reporting issuer's</i> royalty interests in <i>production</i> or <i>reserves</i>. [<i>COGE Handbook</i>]</p> <p>(b) In relation to a <i>reporting issuer's</i> interest in wells, the number of wells obtained by aggregating the <i>reporting issuer's</i> working interest in each of its <i>gross</i> wells.</p> <p>(c) In relation to a <i>reporting issuer's</i> interest in a <i>property</i>, the total area in which the <i>reporting issuer</i> has an interest multiplied by the working interest owned by the <i>reporting issuer</i>.</p>
NI 14-101	National Instrument 14-101 Definitions.
NI 51-101 or the Instrument	National Instrument 51-101 <i>Standards of Disclosure for Oil and Gas Activities</i> .
NI 51-102	National Instrument 51-102 <i>Continuous Disclosure Obligations</i> .
Non-associated gas	An accumulation of <i>natural gas</i> in a <i>reservoir</i> where there is no <i>crude oil</i> . See <i>gas</i> .
Oil	<i>Crude oil</i> or <i>synthetic oil</i> . [<i>COGE Handbook</i>]

Defined Term	Meaning
<i>Oil and gas activities</i>	<p data-bbox="475 258 719 283">"Oil and gas activities":</p> <p data-bbox="475 310 654 336">(a) include:</p> <ul style="list-style-type: none"> <li data-bbox="570 369 1338 422">(i) the search for <i>crude oil</i> or <i>natural gas</i> in their natural states and original locations; <li data-bbox="570 453 1338 531">(ii) the acquisition of <i>property</i> rights or <i>properties</i> for the purpose of further exploring for or removing <i>oil</i> or <i>gas</i> from <i>reservoirs</i> on those <i>properties</i>; <li data-bbox="570 562 1338 695">(iii) the construction, drilling and <i>production</i> activities necessary to recover <i>oil</i> and <i>gas</i> from <i>reservoirs</i>, and the acquisition, construction, installation and maintenance of <i>field</i> gathering and storage systems, including lifting <i>oil</i> and <i>gas</i> to the surface and gathering, treating, <i>field</i> processing and <i>field</i> storage; and <li data-bbox="570 726 1370 831">(iv) the extraction of hydrocarbons from <i>oil</i> sands, shale, coal or other non-conventional sources and activities similar to those referred to in clauses (i), (ii) and (iii) undertaken with a view to such extraction; but <p data-bbox="475 863 727 888">(b) do not include:</p> <ul style="list-style-type: none"> <li data-bbox="570 919 1133 945">(i) transporting, refining or marketing <i>oil</i> or <i>gas</i>; <li data-bbox="570 976 1354 1029">(ii) activities relating to the extraction of natural <i>resources</i> other than <i>oil</i> and <i>gas</i> and their by-products; or <li data-bbox="570 1060 1338 1136">(iii) the extraction of geothermal steam or of hydrocarbons as a by-product of the extraction of geothermal steam or associated geothermal <i>resources</i>. [<i>NI 51-101</i>]
<i>Operating costs</i>	<i>Production costs.</i>
<i>Possible reserves</i>	<i>Reserves</i> that are less certain to be recovered than <i>probable reserves</i> . It is unlikely that the actual remaining quantities recovered will exceed the sum of the estimated proved plus <i>probable</i> plus <i>possible reserves</i> . Other criteria, including levels of certainty, that must also be met for the categorization of <i>possible reserves</i> are provided in the <i>COGE Handbook</i> . [<i>COGE Handbook</i>]
<i>Preparation date</i>	In respect of written disclosure, the most recent date to which information relating to the period ending on the <i>effective date</i> was considered in the preparation of the disclosure.
<i>Probable reserves</i>	<i>Reserves</i> that are less certain to be recovered than proved <i>reserves</i> . It is equally likely that the actual remaining quantities recovered will be greater or less than the sum of the estimated proved plus <i>probable reserves</i> . Other criteria, including levels of certainty, that must also be met for the categorization of <i>probable reserves</i> are provided in the <i>COGE Handbook</i> . [<i>COGE Handbook</i>]

Defined Term	Meaning
Production	<p>Recovering, gathering, treating, <i>field</i> or plant processing (for example, processing <i>gas</i> to extract <i>natural gas</i> liquids) and <i>field</i> storage of <i>oil</i> and <i>gas</i>.</p> <p>The <i>oil production</i> function is usually regarded as terminating at the outlet valve on the <i>lease</i> or <i>field production</i> storage tank. The <i>gas production</i> function is usually regarded as terminating at the plant gate. In some circumstances, it may be more appropriate to regard the <i>production</i> function as terminating at the first point at which <i>oil</i>, <i>gas</i> or their by-products are delivered to a main pipeline, a common carrier, a refinery or a marine terminal.</p>
Production costs (or Operating costs)	<p>Costs incurred to operate and maintain wells and related equipment and facilities, including applicable <i>operating costs</i> of <i>support equipment and facilities</i> and other costs of operating and maintaining those wells and related equipment and facilities.</p> <p>Lifting costs become part of the cost of <i>oil</i> and <i>gas</i> produced.</p> <p>Examples of <i>production costs</i> are:</p> <ul style="list-style-type: none">(a) costs of labour to operate the wells and related equipment and facilities;(b) costs of repairs and maintenance;(c) costs of materials, supplies and fuel consumed, and supplies utilized, in operating the wells and related equipment and facilities;(d) costs of workovers;(e) <i>property</i> taxes and insurance costs applicable to <i>properties</i> and wells and related equipment and facilities; and(f) taxes, other than income and capital taxes.
Production group	<p>One of the following together, in each case, with associated by-products:</p> <ul style="list-style-type: none">(a) light and medium <i>crude oil</i> (combined);(b) heavy <i>oil</i>;(c) <i>associated gas</i> and <i>non-associated gas</i> (combined); and(d) <i>bitumen</i>, <i>synthetic oil</i> or other products from non-conventional <i>oil and gas activities</i>.

Defined Term	Meaning
Product type	<p>One of the following:</p> <ul style="list-style-type: none">(a) in respect of conventional <i>oil and gas activities</i>:<ul style="list-style-type: none">(i) light and medium <i>crude oil</i> (combined);(ii) <i>heavy oil</i>;(iii) <i>natural gas</i> excluding <i>natural gas</i> liquids; or(iv) <i>natural gas</i> liquids; and(b) in respect of non-conventional <i>oil and gas activities</i>:<ul style="list-style-type: none">(i) <i>synthetic oil</i>;(ii) <i>bitumen</i>;(iii) coal bed methane;(iv) hydrates;(v) shale oil; or(vi) shale gas. <p>[NI 51-101]</p>
Professional organization	<p>A self-regulatory organization of engineers, geologists, other geoscientists or other professionals whose professional practice includes <i>reserves evaluations</i> or <i>reserves audits</i>, that:</p> <ul style="list-style-type: none">(a) admits members primarily on the basis of their educational qualifications;(b) requires its members to comply with the professional standards of competence and ethics prescribed by the organization that are relevant to the estimation, <i>evaluation</i>, review or <i>audit of reserves data</i>;(c) has disciplinary powers, including the power to suspend or expel a member; and(d) is either:<ul style="list-style-type: none">(i) given authority or recognition by statute in a Canadian <i>jurisdiction</i>; or(ii) accepted for this purpose by the <i>securities regulatory authority</i> or the <i>regulator</i>. <p>[NI 51-101]</p>

Defined Term	Meaning
Property	<p>A <i>property</i> includes:</p> <ul style="list-style-type: none">(a) fee ownership or a <i>lease</i>, concession, agreement, permit, licence or other interest representing the right to extract <i>oil</i> or <i>gas</i> subject to such terms as may be imposed by the conveyance of that interest;(b) royalty interests, <i>production</i> payments payable in <i>oil</i> or <i>gas</i>, and other non-operating interests in <i>properties</i> operated by others; and(c) an agreement with a foreign government or authority under which a <i>reporting issuer</i> participates in the operation of <i>properties</i> or otherwise serves as "producer" of the underlying <i>reserves</i> (in contrast to being an <i>independent</i> purchaser, broker, dealer or importer). <p>A <i>property</i> does not include supply agreements, or contracts that represent a right to purchase, rather than extract, <i>oil</i> or <i>gas</i>.</p> <p>[CICA Accounting Guideline 16]</p>
Property acquisition costs	<p>Costs incurred to acquire a <i>property</i> (directly by purchase or <i>lease</i>, or indirectly by acquiring another corporate entity with an interest in the <i>property</i>), including:</p> <ul style="list-style-type: none">(a) costs of <i>lease</i> bonuses and options to purchase or <i>lease</i> a <i>property</i>;(b) the portion of the costs applicable to hydrocarbons when land including rights to hydrocarbons is purchased in fee;(c) brokers' fees, recording and registration fees, legal costs and other costs incurred in acquiring <i>properties</i>. <p>[CICA Accounting Guideline 16]</p>
Prospect	<p>A geographic or stratigraphic area, in which the <i>reporting issuer</i> owns or intends to own one or more <i>oil</i> and <i>gas</i> interests, which is geographically defined on the basis of geological data and which is reasonably anticipated to contain at least one <i>reservoir</i> or part of a <i>reservoir</i> of <i>oil</i> and <i>gas</i>.</p>
Prospective resources	<p><i>Prospective resources</i> are defined as those quantities of <i>oil</i> and <i>gas</i> estimated on a given date to be potentially recoverable from undiscovered accumulations. They are technically viable and uneconomic to recover. [COGE Handbook]</p>
Proved property	<p>A <i>property</i> or part of a <i>property</i> to which <i>reserves</i> have been specifically attributed.</p>
Proved reserves	<p><i>Reserves</i> that can be estimated with a high degree of certainty to be recoverable. It is likely that the actual remaining quantities recovered will exceed the estimated proved <i>reserves</i>. Other criteria, including levels of certainty, that must also be met for the categorization of proved <i>reserves</i> are provided in the <i>COGE Handbook</i>. [COGE Handbook]</p>

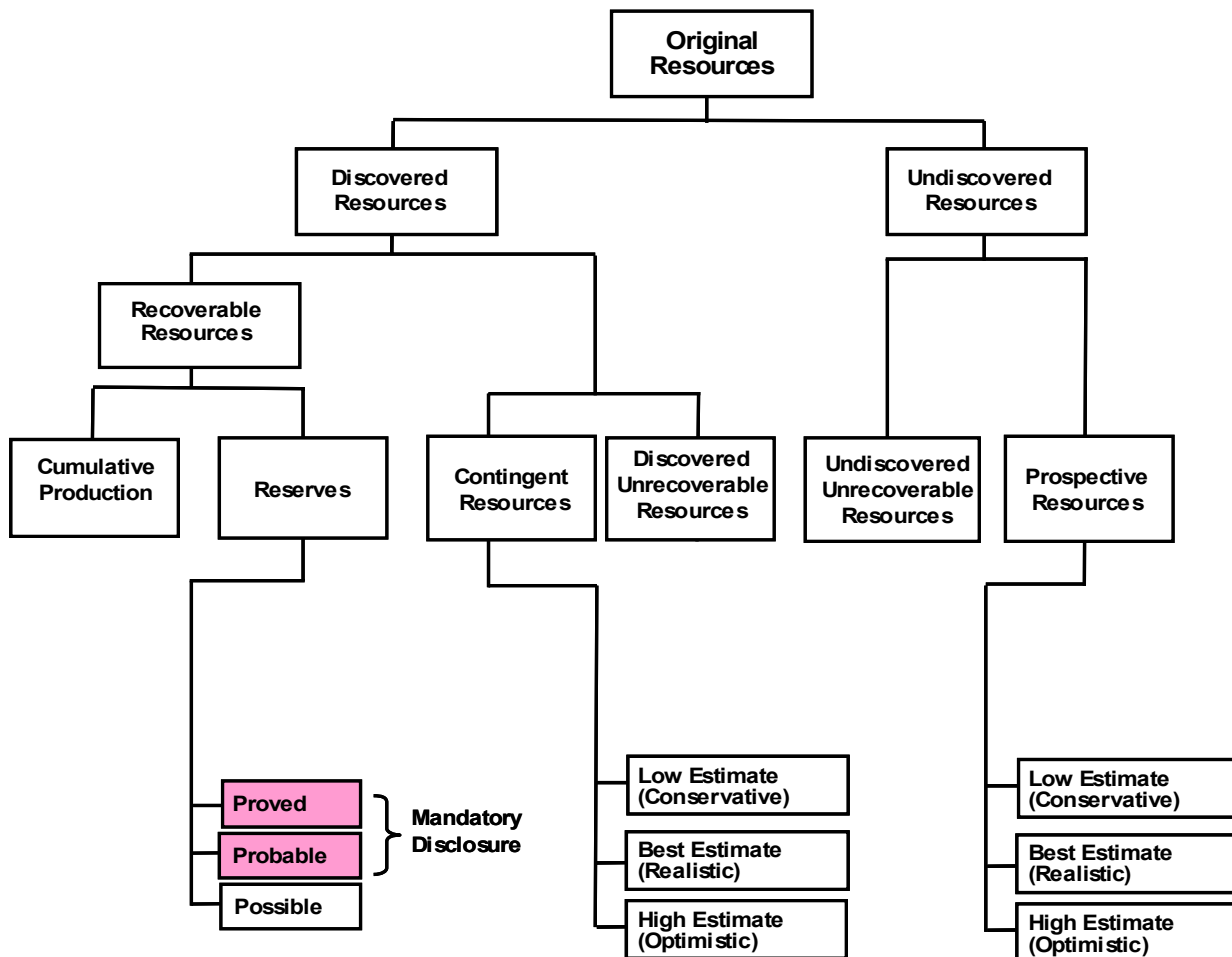
Defined Term	Meaning
Qualified reserves auditor	<p>An individual who:</p> <p>(a) in respect of particular <i>reserves data</i> or related information, possesses professional qualifications and experience appropriate for the estimation, <i>evaluation</i>, review and <i>audit</i> of the <i>reserves data</i> and related information; and</p> <p>(b) is a member in good standing of a <i>professional organization</i>.</p> <p>[NI 51-101]</p>
Qualified reserves evaluator	<p>An individual who:</p> <p>(a) in respect of particular <i>reserves data</i> or related information, possesses professional qualifications and experience appropriate for the estimation, <i>evaluation</i> and review of the <i>reserves data</i> and related information; and</p> <p>(b) is a member in good standing of a <i>professional organization</i>.</p> <p>[NI 51-101]</p>
Qualified reserves evaluator or auditor	<p>A qualified <i>reserves auditor</i> or a <i>qualified reserves evaluator</i>.</p> <p>[NI 51-101]</p>
Regulator	<p>The <i>securities regulatory authority</i> or a person who holds a specified position with the <i>securities regulatory authority</i> (in several instances, its Executive Director or Director) in each <i>jurisdiction</i>.</p> <p>[NI 14-101]</p>
Reporting issuer	<p>(a) A "<i>reporting issuer</i>" as defined in <i>securities legislation</i>; or</p> <p>(b) in a <i>jurisdiction</i> in which the term is not defined in <i>securities legislation</i>, an issuer of securities that is required to file financial statements with the <i>securities regulatory authority</i>.</p>
Reservation	<p>In relation to a report on <i>reserves data</i>, a modification of the standard report of an <i>independent qualified reserves evaluator or auditor</i> on <i>reserves data</i> set out in <i>Form 51-101F2</i>, caused by a departure from the <i>COGE Handbook</i> or by a limitation in the scope of work that the <i>independent qualified reserves evaluator or auditor</i> considers necessary. A modification may take the form of a qualified or adverse opinion or a denial of opinion.</p>
Reserves	<p><i>Reserves</i> are the estimated remaining quantities of <i>oil</i> and <i>natural gas</i> and related substances anticipated to be recoverable from known accumulations, from a given date forward, based on:</p> <ul style="list-style-type: none"> • analysis of drilling, geological, geophysical and engineering data; • the use of established technology; and • specified economic conditions, which are generally accepted as being reasonable, and shall be disclosed. <p><i>Reserves</i> are classified according to the degree of certainty associated with the estimates. [COGE Handbook]</p>
Reserves data	<p>Estimates of proved reserves and probable reserves and related future net revenue estimated using forecast prices and costs. [NI 51-101]</p>

Defined Term	Meaning
Reservoir	A porous and permeable underground formation containing a natural accumulation of producible <i>oil</i> or <i>gas</i> that is confined by impermeable rock or water barriers and is individual and separate from other <i>reservoirs</i> . [CICA Accounting Guideline 16]
Resources	<p>Those quantities of <i>oil</i> and <i>gas</i> estimated to exist originally in naturally occurring accumulations.</p> <p><i>Resources</i> are, therefore, those quantities estimated on a particular date to be remaining in known accumulations plus those quantities already produced from known accumulations plus those quantities in accumulations yet to be discovered.</p> <p><i>Resources</i> are divided into:</p> <ul style="list-style-type: none">(a) <i>discovered resources</i>, which are limited to known accumulations; and(b) <i>undiscovered resources</i>. <p>[COGE Handbook]</p>
Review	<p>In relation to the role of a <i>qualified reserves evaluator or auditor</i> in respect of <i>reserves data</i>, steps carried out by the <i>qualified reserves evaluator or auditor</i>, consisting primarily of enquiry, analytical procedures, analysis, review of historical <i>reserves</i> performance and discussion with <i>reserves</i> management staff related to a <i>reporting issuer's reserves data</i>, with the limited objective of assessing whether the <i>reserves data</i> is "plausible" in the sense of appearing to be worthy of belief based on the information obtained by the <i>qualified reserves evaluator or auditor</i> as a result of carrying out such steps. Examination of documentation is not required unless the information does not appear to be plausible.</p> <p>A <i>reserves</i> review, due to the limited nature of the investigation involved, does not provide the level of assurance provided by a <i>reserves audit</i>. Although <i>reserves</i> reviews can be done for specific applications, they are not a substitute for an <i>audit</i>. [COGE Handbook]</p>
SEC	The Securities and Exchange Commission of the United States of America. [NI 14-101]
Securities legislation	<p>The statute (in most cases entitled the "Securities Act") and subordinate legislation (in most cases including regulations or rules) specified, for each <i>jurisdiction</i>, in NI 14-101.</p> <p>References in NI 51-101 to <i>securities legislation</i> are to be read as references to <i>securities legislation</i> in the particular <i>jurisdiction</i>.</p>
Securities regulatory authority	<p>The securities commission or comparable body specified, for each <i>jurisdiction</i>, in NI 14-101.</p> <p>References in NI 51-101 to the <i>securities regulatory authority</i> are to be read as references to the <i>securities regulatory authority</i> in the particular <i>jurisdiction</i>.</p>
SEDAR	The System for Electronic Document Analysis and Retrieval referred to in National Instrument 13-101 System for Electronic Document Analysis and Retrieval (<i>SEDAR</i>).

Defined Term	Meaning
Service well	A well drilled or completed for the purpose of supporting <i>production</i> in an existing <i>field</i> . Wells in this class are drilled for the following specific purposes: <i>gas</i> injection (<i>natural gas</i> , propane, butane or flue <i>gas</i>), water injection, steam injection, air injection, salt-water disposal, water supply for injection, observation, or injection for combustion. [CICA Accounting Guideline 16]
Solution gas	Gas dissolved in <i>crude oil</i> . See <i>gas</i> .
Stratigraphic test well	A drilling effort, geologically directed, to obtain information pertaining to a specific geologic condition. Ordinarily, such wells are drilled without the intention of being completed for hydrocarbon <i>production</i> . They include wells for the purpose of core tests and all types of expendable holes related to hydrocarbon exploration. <i>Stratigraphic test wells</i> are classified as (a) "exploratory type" if not drilled into a proved <i>property</i> ; or (b) "development type", if drilled into a proved <i>property</i> . Development type stratigraphic wells are also referred to as "evaluation wells". [CICA Accounting Guideline 16]
Support equipment and facilities	Equipment and facilities used in <i>oil and gas activities</i> , including seismic equipment, drilling equipment, construction and grading equipment, vehicles, repair shops, warehouses, supply points, camps, and division, district or <i>field</i> offices.
Supporting filing	A document filed by a <i>reporting issuer</i> with a <i>securities regulatory authority</i> . [NI 51-101]
Synthetic oil	A mixture of hydrocarbons derived by upgrading crude <i>bitumen</i> from <i>oil</i> sands or kerogen from <i>oil</i> shales or other substances such as coal. [COGE Handbook]
Undeveloped reserves	<i>Undeveloped reserves</i> are those <i>reserves</i> expected to be recovered from known accumulations where a significant expenditure (for example, when compared to the cost of drilling a well) is required to render them capable of <i>production</i> . They must fully meet the requirements of the <i>reserves</i> classification (proved, <i>probable</i> , <i>possible</i>) to which they are assigned. [COGE Handbook]
Undiscovered resources	<i>Undiscovered resources</i> are those quantities of <i>oil</i> and <i>gas</i> estimated on a given date to be contained in accumulations yet to be discovered. The estimated potentially recoverable portion of <i>undiscovered resources</i> is classified as <i>prospective resources</i> . [COGE Handbook]
Undiscovered unrecoverable resources	<i>Undiscovered unrecoverable resources</i> are those quantities of <i>undiscovered resources</i> that are neither technically possible nor economic to produce. They represent quantities of petroleum that are in unknown accumulations that are not deemed recoverable due to lack of technical and economic recovery processes. [COGE Handbook]
Unproved property	A <i>property</i> or part of a <i>property</i> to which no <i>reserves</i> have been specifically attributed.
Well abandonment costs	Costs of abandoning a well (<i>net</i> of salvage value) and of disconnecting the well from the surface gathering system. They do not include costs of abandoning the gathering system or reclaiming the wellsite.

APPENDIX 2
to
COMPANION POLICY 51-101CP
STANDARDS OF DISCLOSURE
FOR OIL AND GAS ACTIVITIES

RESERVES AND RESOURCES CLASSIFICATION
AS SET OUT IN CHAPTER 5 OF VOLUME 1 OF
THE COGE HANDBOOK



APPENDIX 3
to
COMPANION POLICY 51-101CP
STANDARDS OF DISCLOSURE
FOR OIL AND GAS ACTIVITIES

SAMPLE RESERVES DATA DISCLOSURE

Format of Disclosure

NI 51-101 and *Form 51-101F1* offer *reporting issuers* considerable flexibility in the format of their disclosure of *reserves data* and related information. Whatever format and level of detail a *reporting issuer* chooses to use in satisfying the requirements of *NI 51-101*, the objective should be to enable reasonable investors to understand and assess the information, and compare it to corresponding information presented by the *reporting issuer* for other reporting periods or to similar information presented by other *reporting issuers*, in order to be in a position to make informed investment decisions concerning securities of the *reporting issuer*.

A logical and legible layout of information, use of descriptive headings, and consistency in terminology and presentation from document to document and from period to period, are all likely to further that objective.

Reporting issuers and their advisers are reminded of the *materiality* standard under section 1.4 of *NI 51-101*, and of the instructions in *Form 51-101F1*.

See also sections 1.4, 2.2 and 2.3 and subsection 2.7(8) of Companion Policy 51-101CP.

Sample Tables

The following sample tables provide an example of how certain of the *reserves data* might be presented in a manner consistent with *NI 51-101*. Other manners of presentation may also satisfy the requirements of *NI 51-101*.

These sample tables do not reflect all of the information required by *Form 51-101F1*, and they have been simplified to reflect *reserves* in one country only. For the purpose of illustration, the sample tables also incorporate information not mandated by *NI 51-101* but which *reporting issuers* might wish to include in their disclosure; shading indicates this non-mandatory information.

**SUMMARY OF OIL AND GAS RESERVES
as of December 31, 2006**

CONSTANT PRICES AND COSTS [OPTIONAL SUPPLEMENTAL DISCLOSURE]

RESERVES CATEGORY	RESERVES ⁽¹⁾							
	LIGHT AND MEDIUM OIL		HEAVY OIL		NATURAL GAS ⁽²⁾		NATURAL GAS LIQUIDS	
	Gross (Mbbbl)	Net (Mbbbl)	Gross (Mbbbl)	Net (Mbbbl)	Gross (MMcf)	Net (MMcf)	Gross (Mbbbl)	Net (Mbbbl)
PROVED								
Developed Producing	xx	xx	xx	xx	xx	xx	xx	xx
Developed Non-Producing	xx	xx	xx	xx	xx	xx	xx	xx
Undeveloped	xx	xx	xx	xx	xx	xx	xx	xx
TOTAL PROVED	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
PROBABLE	xx	xx	xx	xx	xx	xx	xx	xx
TOTAL PROVED PLUS PROBABLE	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

(1) Other product types must be added if material.

(2) Estimates of reserves of natural gas may be reported separately for (i) associated and non-associated gas (combined), (ii) solution gas and (iii) coal bed methane.

**SUMMARY OF NET PRESENT VALUES OF FUTURE NET REVENUE
as of December 31, 2006**

CONSTANT PRICES AND COSTS [OPTIONAL SUPPLEMENTAL DISCLOSURE]

RESERVES CATEGORY	NET PRESENT VALUES OF FUTURE NET REVENUE										UNIT VALUE BEFORE INCOME TAX DISCOUNTED AT 10%/year (\$/Mcf) (\$/bbl)
	BEFORE INCOME TAXES DISCOUNTED AT (%/year)					AFTER INCOME TAXES DISCOUNTED AT (%/year)					
	0 (MM\$)	5 (MM \$)	10 (MM \$)	15 (MM \$)	20 (MM \$)	0 (MM\$)	5 (MM \$)	10 (MM \$)	15 (MM \$)	20 (MM \$)	
PROVED											
Developed Producing	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Developed Non-Producing	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Undeveloped	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
TOTAL PROVED	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
PROBABLE	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
TOTAL PROVED PLUS PROBABLE	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxx

 OPTIONAL SUPPLEMENTAL

Reference: Item 2.2 of Form 51-101F1

**TOTAL FUTURE NET REVENUE
(UNDISCOUNTED)
as of December 31, 2006**

CONSTANT PRICES AND COSTS [OPTIONAL SUPPLEMENTAL DISCLOSURE]

RESERVES CATEGORY	REVENUE (M\$)	ROYALTIES (M\$)	OPERATING COSTS (M\$)	DEVELOP- MENT COSTS (M\$)	ABANDON- MENT AND RECLAMA- TION COSTS (M\$)	FUTURE NET REVENUE BEFORE INCOME TAXES (M\$)	INCOME TAXES (M\$)	FUTURE NET REVENUE AFTER INCOME TAXES (M\$)
Proved Reserves	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Proved Plus Probable Reserves	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

OPTIONAL
SUPPLEMENTAL

Reference: Item 2.2 of Form 51-101F1

**FUTURE NET REVENUE
BY PRODUCTION GROUP
as of December 31, 2006**

CONSTANT PRICES AND COSTS [OPTIONAL SUPPLEMENTAL DISCLOSURE]

RESERVES CATEGORY	PRODUCTION GROUP	FUTURE NET REVENUE BEFORE INCOME TAXES (discounted at 10%/year) (M\$)
Proved Reserves	Light and Medium Crude Oil (including solution gas and other by-products)	xxx
	Heavy Oil (including solution gas and other by-products)	xxx
	Natural Gas (including by-products but excluding solution gas from oil wells)	xxx
	Non-Conventional Oil and Gas Activities	xxx
Proved Plus Probable Reserves	Light and Medium Crude Oil (including solution gas and other by-products)	xxx
	Heavy Oil (including solution gas and other by-products)	xxx
	Natural Gas (including by-products but excluding solution gas from oil wells)	xxx
	Non-Conventional Oil and Gas Activities	xxx

OPTIONAL SUPPLEMENTAL

Reference: Item 2.2 of Form 51-101 F1

SUMMARY OF OIL AND GAS RESERVES
as of December 31, 2006

FORECAST PRICES AND COSTS

RESERVES CATEGORY	RESERVES ⁽¹⁾							
	LIGHT AND MEDIUM OIL		HEAVY OIL		NATURAL GAS ⁽²⁾		NATURAL GAS LIQUIDS	
	Gross (Mbbbl)	Net (Mbbbl)	Gross (Mbbbl)	Net (Mbbbl)	Gross (MMcf)	Net (MMcf)	Gross (Mbbbl)	Net (Mbbbl)
PROVED								
Developed Producing	xx	xx	xx	xx	xx	xx	xx	xx
Developed Non-Producing	xx	xx	xx	xx	xx	xx	xx	xx
Undeveloped	xx	xx	xx	xx	xx	xx	xx	xx
TOTAL PROVED	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
PROBABLE	xx	xx	xx	xx	xx	xx	xx	xx
TOTAL PROVED PLUS PROBABLE	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

(1) Other product types must be added if material.

(2) Estimates of reserves of natural gas may be reported separately for (i) associated and non-associated gas (combined), (ii) solution gas and (iii) coal bed methane.

SUMMARY OF NET PRESENT VALUES OF FUTURE NET REVENUE
as of December 31, 2006
FORECAST PRICES AND COSTS

RESERVES CATEGORY	NET PRESENT VALUES OF FUTURE NET REVENUE										UNIT VALUE BEFORE INCOME TAX DISCOUNTED AT 10%/year (\$/Mcf) (\$/bbl)	
	BEFORE INCOME TAXES DISCOUNTED AT (%/year)					AFTER INCOME TAXES DISCOUNTED AT (%/year)						
	0 (MM\$)	5 (MM \$)	10 (MM \$)	15 (MM \$)	20 (MM \$)	0 (MM\$)	5 (MM \$)	10 (MM \$)	15 (MM \$)	20 (MM \$)		
PROVED Developed Producing	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Developed Non- Producing	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Undeveloped	<u>xx</u>	<u>xx</u>	<u>xx</u>	<u>xx</u>	<u>xx</u>	<u>xx</u>	<u>xx</u>	<u>xx</u>	<u>xx</u>	<u>xx</u>	<u>xx</u>	<u>xx</u>
TOTAL PROVED	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
PROBABLE	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
TOTAL PROVED PLUS PROBABLE	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxx

- (1) A reporting issuer may wish to satisfy its requirement to disclose these unit values by inserting this disclosure for each category of proved reserves and for probable reserves, by production group, in the chart for item 2.1(3)(c) of *Form 51-101F1* (see sample chart below entitled Future Net Revenue by Production Group).
- (2) The unit values are based on net reserve volumes.

Reference: Item 2.1(1) and (2) of *Form 51-101F1*

**TOTAL FUTURE NET REVENUE
(UNDISCOUNTED)
as of December 31, 2006
FORECAST PRICES AND COSTS**

RESERVES CATEGORY	REVENUE (M\$)	ROYALTIES (M\$)	OPERATING COSTS (M\$)	DEVELOP- MENT COSTS (M\$)	ABANDON MENT AND RECLA- MATION COSTS (M\$)	FUTURE NET REVENUE BEFORE INCOME TAXES (M\$)	INCOME TAXES (M\$)	FUTURE NET REVENUE AFTER INCOME TAXES (M\$)
Proved Reserves	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Proved Plus Probable Reserves	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

Reference: Item 2.1(3)(b) of Form 51-101F1

**FUTURE NET REVENUE
BY PRODUCTION GROUP
as of December 31, 2006
FORECAST PRICES AND COSTS**

RESERVES CATEGORY	PRODUCTION GROUP	FUTURE NET REVENUE BEFORE INCOME TAXES (discounted at 10%/year) (M\$)	UNIT VALUE (\$/Mcf) (\$/bbl)
Proved Reserves	Light and Medium Crude Oil (including solution gas and other by-products)	xxx	xxx
	Heavy Oil (including solution gas and other by-products)	xxx	xxx
	Natural Gas (including by-products but excluding solution gas and by-products from oil wells)	xxx	xxx
	Non-Conventional Oil and Gas Activities	xxx	xxx
	Total	xxx	
Proved Plus Probable Reserves	Light and Medium Crude Oil (including solution gas and other by-products)	xxx	xxx
	Heavy Oil (including solution gas and other by-products)	xxx	xxx
	Natural Gas (including by-products but excluding solution gas from oil wells)	xxx	xxx
	Non-Conventional Oil and Gas Activities	xxx	xxx
	Total	xxx	

Reference: Item 2.2(3)(c) of Form 51-101F1

SUMMARY OF PRICING ASSUMPTIONS
as of December 31, 2006

CONSTANT PRICES AND COSTS⁽¹⁾

Year	OIL ⁽²⁾				NATURAL GAS ⁽²⁾ AECO Gas Price (\$Cdn/MMBtu)	NATURAL GAS LIQUIDS FOB Field Gate (\$Cdn/bbl)	EXCHANGE RATE ⁽³⁾ (\$US/\$Cdn)
	WTI Cushing Oklahoma (\$US/bbl)	Edmonton Par Price 40 ^o API (\$Cdn/bbl)	Hardisty Heavy 12 ^o API (\$Cdn/bbl)	Cromer Medium 29.3 ^o API (\$Cdn/bbl)			
Historical (Year End)							
2003	xx	xx	xx	xx	xx	xx	xx
2004	xx	xx	xx	xx	xx	xx	xx
2005	xx	xx	xx	xx	xx	xx	xx
2006 (Year End)	xx	xx	xx	xx	xx	xx	xx

 OPTIONAL SUPPLEMENTAL

- (1) This disclosure is triggered by optional supplemental disclosure of item 2.2 of *Form 51-101F1*.
(2) This summary table identifies benchmark reference pricing schedules that might apply to a reporting issuer.
(3) The exchange rate used to generate the benchmark reference prices in this table.

Reference: Item 3.1 of *Form 51-101 F1*

SUMMARY OF PRICING AND INFLATION RATE ASSUMPTIONS
as of December 31, 2006

FORECAST PRICES AND COSTS

Year	OIL ⁽¹⁾				NATURAL GAS ⁽¹⁾ AECO Gas Price (\$Cdn/MMBtu)	NATURAL GAS LIQUIDS FOB Field Gate (\$Cdn/bbl)	INFLATION RATES ⁽²⁾ %/Year	EXCHANGE RATE ⁽³⁾ \$US/\$Cdn
	WTI Cushing Oklahoma \$US/bbl	Edmonton Par Price 40 ⁰ API \$Cdn/bbl	Hardisty Heavy 12 ⁰ API \$Cdn/bbl	Cromer Medium 29.3 ⁰ API \$Cdn/bbl				
Historical ⁽⁴⁾								
2003	xx	xx	xx	xx	xx	xx	xx	xx
2004	xx	xx	xx	xx	xx	xx	xx	xx
2005	xx	xx	xx	xx	xx	xx	xx	xx
2006	xx	xx	xx	xx	xx	xx	xx	xx
Forecast								
2007	xx	xx	xx	xx	xx	xx	xx	xx
2008	xx	xx	xx	xx	xx	xx	xx	xx
2009	xx	xx	xx	xx	xx	xx	xx	xx
2010	xx	xx	xx	xx	xx	xx	xx	xx
2011	xx	xx	xx	xx	xx	xx	xx	xx
Thereafter	xx	xx	xx	xx	xx	xx	xx	xx

- (1) This summary table identifies benchmark reference pricing schedules that might apply to a reporting issuer.
(2) Inflation rates for forecasting prices and costs.
(3) Exchange rates used to generate the benchmark reference prices in this table
(4) Item 3.2 (1)(b) of *Form 51-101F1* also requires disclosure of the *reporting issuer's* weighted average historical prices for the most recent financial year (2006, in this example).

 OPTIONAL
SUPPLEMENTAL

Reference: Item 3.2 of *Form 51-101 F1*

**RECONCILIATION OF
COMPANY GROSS RESERVES
BY PRODUCT TYPE⁽¹⁾**

FORECAST PRICES AND COSTS

FACTORS	LIGHT AND MEDIUM OIL			HEAVY OIL			ASSOCIATED AND NON-ASSOCIATED GAS		
	Gross Proved (Mbbbl)	Gross Probable (Mbbbl)	Gross Proved Plus Probable (Mbbbl)	Gross Proved (Mbbbl)	Gross Probable (Mbbbl)	Gross Proved Plus Probable (Mbbbl)	Gross Proved (MMcf)	Gross Probable (MMcf)	Gross Proved Plus Probable (MMcf)
December 31, 2005	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Extensions & Improved Recovery Technical Revisions	xx	xx	xx	xx	xx	xx	xx	xx	xx
Discoveries	xx	xx	xx	xx	xx	xx	xx	xx	xx
Acquisitions	xx	xx	xx	xx	xx	xx	xx	xx	xx
Dispositions Economic	xx	xx	xx	xx	xx	xx	xx	xx	xx
Factors Production	xx	xx	xx	xx	xx	xx	xx	xx	xx
December 31, 2006	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

(1) The reserves reconciliation must include other product types, including synthetic oil, bitumen, coal bed methane, hydrates, shale oil and shale gas, if material for the reporting issuer.

Reference: Item 4.1 of Form 51-101F1