5.1.2 National Instrument 51-101 Standards of Disclosure for Oil and Gas Activities

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

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

PART 1 APPLICATION AND TERMINOLOGY

1.1 Definitions - In this Instrument:

(a) In this Instrument:

(i) "annual information form" means:

(a) a "current AIF", as defined in NI 44-101;

(ii) in the case of a reporting issuer that is eligible to file, for the purpose of Part 3 of NI 44-101, a current annual report on Form 10-K or Form 20-F under the 1934 Act, such a current annual report so filed; or

(iii) a document prepared in Form 44-101F1 AIF and filed with the securities regulatory authority in the jurisdiction in accordance with securities legislation of that jurisdiction other than NI 44-101;

(b) "BOEs" means barrels of oil equivalent;

(c) "CICA" means The Canadian Institute of Chartered Accountants;

(d) "CICA Accounting Guideline 5" means Accounting Guideline AcG-5 "Full cost accounting in the oil and gas industry" 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;

(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:

(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 paragraph (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;

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 an instrument 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.
(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 paragraph (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;

(p) "McFGEs" means thousand cubic feet of gas equivalent;

(q) "NI 14-101" means National Instrument 14-101 Definitions;

(r) "NI 44-101" means National Instrument 44-101 Short Form Prospectus Distributions;

(s) "oil and gas activities" 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*.

(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* or related information, possesses professional qualifications and experience appropriate for the estimation, *evaluation, review* and *audit* of the *reserves data* 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* or related information, possesses professional qualifications and experience appropriate for the estimation, *evaluation* and *review* of the *reserves data* 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

(ii) 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 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, 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 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 – except in British Columbia, 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.

2.2 News Release to Announce Filing - A reporting issuer shall, concurrently with filing a statement and reports under section 2.1, disseminate a news release 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 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 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 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

(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 subsection 3.4(1) 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 clause (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 not delegate its responsibility under paragraph 3.4(1)(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 solicit the recommendation of that committee as to whether to approve the content and filing of information for the purpose of paragraph 3.4(1)(e).

3.6 **British Columbia** - Section 3.4 and section 3.5 do not apply in British Columbia.

**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 use

(a) the full cost method of accounting, applying *CICA Accounting Guideline 5*; 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).

(2) 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 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 Reserves Data and Other Information - If a reporting issuer makes disclosure of 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

(a) prepared in accordance with Part 4; and

(b) 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 change 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 the reserves and resources terminology and categories set out in the COGE Handbook.

5.4 Oil and Gas Reserves and Sales - Disclosure of reserves or of sales of oil, gas or associated by-products shall be made only in respect of marketable quantities, reflecting 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 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 Value - Disclosure of an estimate of future net revenue, whether calculated without discount or using a discount rate, shall 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 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.

(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 referred to in section 2.2.

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3 "Material change" has the meaning ascribed to the term under securities legislation of the applicable jurisdiction.
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 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 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 - If a reporting issuer discloses anticipated results from a prospect, the reporting issuer shall also disclose in writing, in the same document or in a supporting filing, in respect of the prospect

(a) the location and basin name;

(b) the reporting issuer's gross and net interest in the property, expressed in units of area (acres or hectares);

(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;

(f) the product types reasonably expected;

(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

(o) the applicable information specified in section 5.10.

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

(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 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)

(A) a report on the estimate that does not contain

(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

(B) the professional valuator’s written consent to the disclosure of the report by the *reporting issuer* to the public.

5.11 **Net Asset Value and Net Asset Value per Share** - Written disclosure of net asset value or net asset value per share shall 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 include an explanation of the method of calculation applied.

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

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

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

(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 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 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 identify the unit, state the conversion ratio used and explain why it has been chosen; and

(d) the disclosure shall 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 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 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 Change 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

(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 in the document identified under paragraph (a).

PART 7 OTHER INFORMATION

7.1 Information to be Furnished on Request - A reporting issuer shall, 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.

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.

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4 In this Part, "material change" has the meaning ascribed to the term under securities legislation of the applicable jurisdiction.
FORM 51-101F1
STATEMENT OF RESERVES DATA
AND OTHER OIL AND GAS INFORMATION

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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 51-101F1.

(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.

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.

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, 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 2.3 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 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.

PART 3 PRICING ASSUMPTIONS

Item 3.1 Constant Prices Used in Estimates

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 2.1.

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:

      (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.

1. 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.

2. 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 terms “constant prices and costs” and “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 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 proved reserves (in total);

   (b) net probable reserves (in total); and

   (c) net proved plus probable reserves (in total).

3. 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;

   (c) separately identifying and explaining:

      (i) extensions;

      (ii) improved recovery;

      (iii) technical revisions;

      (iv) discoveries;

      (v) acquisitions;

      (vi) dispositions;
(vii) economic factors; and
(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 dispositions 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.
Except in respect of clause 2(b)(xi) of Item 4.2, the information to be provided under this Part is pre-tax information.

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 financial years and, in the aggregate, before that time; or
   (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 financial years and, in the aggregate, before that time; or
   (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;
   (ii) proved reserves (in total) estimated using forecast prices and costs; and
   (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 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:

1. how the *reporting issuer* estimates such costs;
2. the number of net wells for which the *reporting issuer* expects to incur such costs;
3. 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;
4. 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
5. 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. 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):
   1. *property acquisition costs*, separately for *proved properties* and *unproved properties*;
   2. *exploration costs*; and
   3. *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*:
   1. the number of *gross wells* and *net wells* completed in the *reporting issuer’s* most recent financial year; and
   2. 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* disclosed under Items 2.1 and 2.2.
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.
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:

   (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]:

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.
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.

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]

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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).
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"). This form does not apply in British Columbia.

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:

   (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]]; and

   (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 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 reserves data and other oil and gas information;

   (b) the filing of 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.

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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.
Because the reserves data are based on judgements regarding future events, actual results will vary and the variations may be material.

[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

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APPENDIX 2 – SAMPLE RESERVES DATA DISCLOSURE
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, and how the securities regulatory authorities or regulators may exercise their discretion in respect of certain applications for exemption from provisions of NI 51-101.

**PART 1 APPLICATION AND TERMINOLOGY**

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

2. **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 any 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.

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.

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

3. **When Does NI 51-101 First Apply to a Reporting Issuer?** - Part 9 of NI 51-101 specifies both the date on which NI 51-101 comes into force (section 9.1) and the timing of its first application to a reporting issuer (section 9.2). The two dates differ.

NI 51-101 comes into force on September 30, 2003. That does not, however, itself trigger any immediate filing or other requirements for reporting issuers.

Section 9.2 of NI 51-101 in effect establishes a transition period after NI 51-101 comes into force, during which reporting issuers are expected to prepare for compliance with NI 51-101. The date on which they first become subject to the requirements of NI 51-101 will vary depending on their financial year-ends and, in some cases, on whether or not they choose to enter the NI 51-101 disclosure system earlier than required. Reporting issuers may voluntarily comply with NI 51-101 before they are required to do so.

The first mandatory annual filings under Part 2 of NI 51-101 will be due at the same time as a reporting issuer is required to file its audited annual financial statements for its financial year that includes, or ends on, December 31, 2003. Those first annual oil and gas filings will include reserves data and other information that must be prepared as at the last day of that financial year and for that financial year. Some of this information will date back to the beginning of that financial year.

Because prospectus disclosure requirements include information relating to oil and gas activities, and because a prospectus filed between 90 and 140 days after the end of a reporting issuer's financial year can trigger an accelerated filing of annual financial statements before the usual deadline, the filing of a prospectus during that interval in 2004 could also accelerate the reporting issuer's first filing obligations under NI 51-101.

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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).
The other provisions of NI 51-101, including requirements relating to public disclosure generally and to material change\textsuperscript{2} disclosure in particular, will apply to a reporting issuer only after it has filed its first annual oil and gas disclosure under Part 2, or the deadline for that filing, whichever is earlier.

A reporting issuer may voluntarily make its first annual filing under Part 2 of NI 51-101 earlier than the deadlines noted below, and may do so in respect of a financial year earlier than noted below. The other provisions of NI 51-101 would begin to apply to the reporting issuer at the time of that voluntary early filing.

The following examples, summarized in the table below, illustrate the effect of Part 9 (assuming a 140-day annual financial statement filing deadline, and no earlier voluntary or prospectus-triggered transition to NI 51-101):

- A reporting issuer with a financial year that coincides with the calendar year, and with an annual financial statement filing period of 140 days after year-end, will be required to make its first annual oil and gas disclosure filing under Part 2 in the first 140 days of 2004, by May 19, 2004. The reserves data and other information included in that filing must be prepared as at December 31, 2003 and for the year ended on that date.

  The other provisions of NI 51-101 will begin to apply to the reporting issuer as soon as it makes its first filing under Part 2, or on May 19, 2004, whichever occurs first.

- A reporting issuer with a financial year that ends on June 30 will be required to make its first annual oil and gas disclosure filing under Part 2 within 140 days after June 30, 2004, by November 17, 2004. The reserves data and other information included in that filing must be prepared as at June 30, 2004 and for the financial year ended on that date.

  The other provisions of NI 51-101 will begin to apply to the reporting issuer as soon as it makes its first filing under Part 2, or on November 17, 2004, whichever occurs first.

<table>
<thead>
<tr>
<th>Financial Year-End</th>
<th>First Annual Filing Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 31</td>
<td>May 19, 2004 (data for the year ended December 31, 2003)</td>
</tr>
<tr>
<td>June 30</td>
<td>November 17, 2004 (data for the year ended June 30, 2004)</td>
</tr>
</tbody>
</table>

* Note that any change from the 140-day annual financial statement filing deadline would also change the filing deadline under Part 2 of NI 51-101.

Because the first annual filing must include certain information from the beginning of the financial year for which disclosure is required, as well as certain information for prior periods, reporting issuers should familiarize themselves with NI 51-101 and begin gathering information well before NI 51-101 applies to them.

1.4 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 in Appendix 1 to 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 set out, in part, in Part 2 of Appendix 1 to this Companion Policy.

Subparagraph 4.2(1)(a)(ii) of NI 51-101 requires that all filed estimates of reserves or future net revenue have been prepared or audited in accordance with the COGE Handbook. Under sections 5.2 and 5.3 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.

\textsuperscript{2} "Material change" has the meaning ascribed to the term under securities legislation in the jurisdiction.
1.5 **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 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.

(a) **Relevant Professional Qualifications and Experience**

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 the *COGE Handbook* - "Qualifications of Evaluators and Auditors, Enforcement and Discipline".

(b) **Professional Organization**

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.

Each of the following organizations in Canada is a *professional organization* as at the date *NI 51-101* comes into force:

- 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)
1.6 Oil Sands and Other Non-Conventional Activities

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

(i) 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 CSA may from time to time determine that it is appropriate to expand or revise the list of professional organizations and publish notice of such changes.

(ii) 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.

(iii) Renewal Applications Unnecessary

A successful applicant would likely have to make an application contemplated in this section 1.5 only once, and not renew it annually.

1.6 Oil Sands and Other Non-Conventional Activities - NI 51-101 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 CSA are of the view that the requirements of NI 51-101 for the preparation and disclosure of reserves data apply to oil and gas reserves 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. In particular, the CSA encourage reporting issuers engaged in oil and gas activities that involve mining to consider the following when making disclosure about those activities:

- in respect of financial disclosure, CICA Handbook guidance for mining activities; and

1.7 Use of Information - 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 registrants 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.

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

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 1.2 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. It is not necessary to identify any of the information by form name, number or title, to include the headings or numbering used in a form, or to follow the ordering of items used in the forms. (Appendix 2 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.

(a) Meaning of "Annual Information Form"

The annual information form can be in Form 44-101F1 AIF if it is a "current AIF" under National Instrument 44-101 Short Form Prospectus Distributions, or if it is filed for other purposes such as Ontario Securities Commission Rule 51-501 AIF and MD&A, section 159 of the Regulation under the Securities Act (Québec) or Multilateral Instrument 45-102 Resale of Securities. The annual information form can also be a current annual report on Form 10-K or Form 20-F under the 1934 Act, if the reporting issuer is eligible to file such a report under NI 44-101.

Some or all of the current domestic forms of annual information form may be superseded by a new form under proposed National Instrument 51-102 Continuous Disclosure Obligations. If so, such new form would likely be acceptable as an annual information form for the purposes of NI 51-101. The CSA will give public notice of such change.

(b) Option to Set Out Information in Annual Information Form

All types of domestic annual information form will likely require the inclusion of the information required under section 2.1 of NI 51-101, either by setting out the text of the information 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 notification that the information required under section 2.1 of NI 51-101 is included in the reporting issuer's filed annual information form. This notification (which could be a copy of the news release mandated by section 2.2 of
Reservations 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. As discussed in section 4.4 of this Companion Policy, 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 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.

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.

The COGE Handbook may address the issue of negative assurance in connection with evolving standards for reviews of reserves data. The CSA will consider any such developments and may, in consequence, reassess the views expressed above.

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.

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.

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.

2.10 **Sample Reserves Data Disclosure** - Appendix 2 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 2 also illustrates how certain additional information not mandated under Form 51-101F1 might be incorporated in an annual filing.

The sample presentation in Appendix 2 is provided by way of illustration only, and is not mandatory. However, the CSA urge *reporting issuers* to review Appendix 2 and consider whether a similar presentation might be helpful for their investors.

### 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 **Forecast Prices and Costs** - *Forecast prices and costs* are discussed in the *COGE Handbook*. Except to the extent that the *reporting issuer* is legally bound by fixed or presently determinable future prices or costs, *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*.

4.2 **Constant Prices and Costs** - *Constant prices and costs* are based on the *reporting issuer’s prices* and costs as of the *effective date* of the estimate being made (generally, for the purpose of the estimates to be filed under section 2.1 of *NI 51-101*, 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); see also section 4.3 of this Companion Policy.

4.3 **Financial Instruments** - The definitions of "*constant prices and costs*" and "*forecast prices and costs*" in subsections 1.1(g) and (j) of *NI 51-101* and 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 3860 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*. 
4.4 Reserves Estimation Methods - The COGE Handbook sets out target levels of certainty for estimates of primary categories of total reserves for the reporting issuer as a whole. For example, 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. (See Part 2 of Appendix 1.)

Section 5.4.3 of the COGE Handbook states "In principle, there should be no difference between estimates prepared using probabilistic or deterministic methods".

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

4.5 Consistency of Timing - Subsection 4.2(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 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 the COGE Handbook, whether conducting a reserves evaluation or a reserves audit.

PART 5 REQUIREMENTS APPLICABLE TO ALL DISCLOSURE

5.1 Scope of Part 5 of NI 51-101 - 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.

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 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 the report under item 2 of section 2.1; making direct or indirect reference to the
conclusions of that report in the statement filed under item 1 of section 2.1 and in the report of management and directors filed under item 3 of section 2.1; and identifying the report in the mandatory news release 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.

5.3 Estimates of Fair Value - Section 5.10 of NI 51-101 sets out requirements applicable to disclosure of certain estimates of fair value -- for example, an estimate of fair value of an oil and gas prospect.

Such an estimate must, unless paragraph 5.10(2)(a) applies, satisfy the requirements of paragraph 5.10(2)(b), which among other things requires that the estimate be prepared or accepted by a professional valuator. The CSA do not consider that such an estimate would be an appropriate basis for disclosure if it is prepared or accepted as at a date more than six months before the date of the disclosure.

Under subparagraph 5.10(2)(b)(ii), the estimate must consist of at least 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) such values being estimated by a professional valuator in accordance with applicable professional standards based on the course of action that the valuator reasonably expects the reporting issuer to follow.

In circumstances in which paragraph 5.10(2)(b) applies, 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 and provide the report referred to in that paragraph.

5.4 Negative Assurance - As discussed in section 2.6 of this Companion Policy, the CSA are of the view that a report of a qualified reserves evaluator or auditor that is based on or conveys only negative assurance can be misinterpreted as providing a higher degree of assurance than is intended or warranted.

The CSA believe that reporting issuers should avoid making any public disclosure of, or based on, a report that conveys only negative assurance.

In the rare case, if any, in which there are compelling reasons for making such disclosure, 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.

The COGE Handbook may address the issue of negative assurance in connection with evolving standards for reviews of reserves data. The CSA will consider any such developments and may, in consequence, give public notice of a change in the views expressed above.

5.5 Supporting Filings - Part 5 of NI 51-101 requires that certain information, if disclosed publicly, be supported by consistent information in a supporting filing.

The definition of "supporting filing" in section 1.1 of NI 51-101 does not specify any particular type of document, nor a maximum age or an expiry date for any such document. If the information in a filed document has not been rendered inaccurate or misleading by events subsequent to its filing, the document can continue to serve as a supporting filing.

Part 6 of NI 51-101 requires that reports of material changes include, in certain circumstances, information concerning the effect that the material change would, for the timing of its occurrence, have had on information in an annual filing under Part 2.

The CSA do not consider that a document filed under Part 2 of NI 51-101 would cease to qualify as a supporting document merely by reason of the occurrence of a material change referred to in Part 6 of NI 51-101, provided that the material change disclosure satisfies applicable requirements of Part 6.

5.6 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.
In all cases, in accordance with subparagraph 4.2(1)(a)(ii), subsection 5.2(a) and section 5.3 of \textit{NI 51-101}, \textit{reporting issuers} should apply the relevant nomenclature and unit prefixes set out in the \textit{COGE Handbook}.

5.7 \textbf{BOEs and McfGEs} - Section 5.14 of \textit{NI 51-101} sets out requirements that apply if a \textit{reporting issuer} chooses to make disclosure using units of equivalency such as \textit{BOEs} or \textit{McfGEs}. The requirements include prescribed methods of calculation and cautionary disclosure as to the possible limitations of those calculations. Section 13 of the \textit{COGE Handbook}, under the heading "Barrels of Oil Equivalent", provides additional guidance.

5.8 \textbf{Finding and Development Costs} - Section 5.15 of \textit{NI 51-101} sets out requirements that apply if a \textit{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 \textit{BOEs}, section 5.14 of \textit{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.

\textit{BOEs} are based on imperial units of measurement. If the \textit{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 \textit{BOEs}.

\textbf{PART 6 MATERIAL CHANGE DISCLOSURE}

6.1 \textbf{Changes from Filed Information} - Part 6 of \textit{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 \textit{NI 51-101} is prepared as at, or for a period ended on, the \textit{reporting issuer}'s most recent financial year-end. That date is the \textit{effective date} referred to in subsection 6.1(1) of \textit{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 \textit{NI 51-101} requires that the disclosure of the material change include a discussion of the \textit{reporting issuer}'s reasonable expectation of how information that had been filed under Part 2 would differ, had the material change occurred before rather than after the \textit{effective date} of that original information.

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

6.2 \textbf{Constant Case Estimates} - To the extent that a material change referred to in section 6.1 involves a change in future prices and costs, the CSA do not consider that Part 6 of \textit{NI 51-101} would require further discussion of \textit{reserves data} estimated using \textit{constant prices and costs} as at the \textit{effective date}.

\textbf{PART 7 INDEPENDENCE OF PROFESSIONALS}

7.1 \textbf{Independence of Qualified Reserves Evaluator or Auditor} - "Independence", in respect of the relationship between a \textit{reporting issuer} and a \textit{qualified reserves evaluator or auditor} engaged to evaluate, audit, or review \textit{reserves data}, is to be determined in accordance with the \textit{COGE Handbook}. The following guidance should be read in light of the \textit{COGE Handbook}.

Under the \textit{COGE Handbook}, a \textit{qualified reserves evaluator or auditor} would not generally be considered to be \textit{independent} of a client \textit{reporting issuer} if the \textit{qualified reserves evaluator or auditor} has or expects to receive a direct or indirect interest in either a \textit{property} to be \textit{evaluated} or reported on, or in securities of the client or of an affiliate of the client.

\textit{Independence} would not ordinarily be considered to be lost only by reason of the fact that the \textit{qualified reserves evaluator or auditor}, or a \textit{reserves evaluation firm} of which he or she is a partner, shareholder or employee, also provides to the client \textit{reporting issuer}, or provides to another client in respect of a \textit{property} to be \textit{evaluated} or reported on, other services (including \textit{evaluations}, \textit{audits} or \textit{reviews}) of a type normally rendered by the petroleum engineering profession.

7.2 \textbf{Unacceptable Qualified Reserves Evaluator or Auditor or Valuator} - Sections 2.1 and 3.2 of \textit{NI 51-101} require the involvement, in connection with annual \textit{reserves data} disclosure, of a \textit{qualified reserves evaluator or auditor} who is \textit{independent} (in accordance with the \textit{COGE Handbook}) of the \textit{reporting issuer}. Similarly, section 5.10 of \textit{NI 51-101}
requires the involvement, in connection with certain disclosure of estimates of fair value, of a professional valuator who is not a "related party" (within the meaning of the term in the CICA Handbook) of the reporting issuer.

Notwithstanding that a qualified reserves evaluator or auditor or a valuator may technically satisfy these requirements concerning his or her relationship with the reporting issuer, circumstances may, or may reasonably be seen to, deprive that individual of the freedom to exercise the independent judgement that the CSA consider essential for the purposes of NI 51-101. In such circumstances, the securities regulatory authority or regulator may request the reporting issuer to engage another qualified reserves evaluator or auditor or another valuator. If a prospectus filing is involved, the securities regulatory authority or regulator may consider that a failure to comply with such a request materially impairs the quality of disclosure to an extent that could lead to a refusal to issue a prospectus receipt.

PART 8 EXEMPTIONS

8.1 Scope of Possible Exemptions - This Part discusses certain exemptive relief that the securities regulatory authority or regulator may be willing to grant in appropriate circumstances, on application by a reporting issuer under Part 8 of NI 51-101. The relief discussed in this Part is limited to relief from the requirements of NI 51-101, and would not affect other requirements of securities legislation.

(See also section 1.5 of this Companion Policy for a discussion of certain applications relating to professional qualifications.)

8.2 Exemption from Requirement for Independent Qualified Reserves Evaluator or Auditor

The CSA consider that the involvement of a qualified reserves evaluator or auditor who is independent of a reporting issuer will in most cases serve as an important measure of quality control for reserves data disclosure, which should in turn help foster and maintain confidence in oil and gas disclosure, to the benefit of all participants in Canadian capital markets.

The CSA recognize, however, that there may be limited circumstances in which the desired quality and reliability of reserves data disclosure may be achieved even without independent professional involvement.

(a) Discretionary Exemption for Senior Producing Issuer

Securities regulatory authorities or regulators would, in certain circumstances, likely be prepared, on application by a senior producing issuer, to grant an exemption from the requirements of NI 51-101 for involvement of a qualified reserves evaluator or auditor who is independent of the reporting issuer. Such an exemption would likely be subject to conditions.

For these purposes, "senior producing issuer" means a reporting issuer that

(i) demonstrates capability to estimate its reserves and future net revenue in accordance with the COGE Handbook (other than with respect to independence); and

(ii) produced an average of more than 100,000 BOEs of oil and gas (converted in the ratio 6 Mcf :1 bbl) per day throughout its most recent financial year.

Such an exemption from the requirement for independence of a qualified reserves evaluator or auditor would likely apply in respect of requirements arising directly under NI 51-101 (notably paragraph (b) of item 2 of section 2.1 and section 3.2) or indirectly under other securities legislation (such as prospectus disclosure requirements) that applies requirements of NI 51-101.

Such an exemption would not vary the requirements of NI 51-101 in respect of the involvement of a qualified reserves evaluator, only his or her independence. Given the nature of the reserves audit function, it is unlikely that a non-independent professional could act as a qualified reserves auditor or usefully perform a review. Accordingly, for the purpose of section 2.1 of NI 51-101, the use of an audit as an alternative to an evaluation, and the use of a review of information not evaluated or audited, would not likely be alternatives available to a reporting issuer relying on such an exemption. In other words, reliance on such an exemption would likely require evaluation of all reserves data by an "in-house" qualified reserves evaluator.

Relief would likely cease to be available to a reporting issuer if it ceased to be a senior producing issuer or in the event of a failure to adhere to any undertaking provided as a condition of the exemption.
No such exemption would likely be provided in connection with an initial public offering of securities or a reverse take-over or similar transaction.

(b) Application

An application for an exemption referred to above should demonstrate that the applicant is a senior producing issuer. In considering that aspect of an application, factors taken into account by securities regulatory authorities or regulators would likely include the background and experience of the reporting issuer’s non-independent qualified reserves evaluators, the quality of its past oil and gas disclosure, and its internal disclosure, compliance, quality control and approval procedures. Demonstrated adherence to "best practice" standards of the COGE Handbook and of the relevant professional body would be expected.

An independent review of internally-generated reserves data, with satisfactory results, could be required before an exemption is granted.

An exemption, if granted, might not specify an expiry date, meaning that a successful applicant need not renew the application annually.

(c) Likely Conditions to Discretionary Exemption

A discretionary exemption described in this section 8.2 would likely be conditional on the reporting issuer furnishing and complying with the following undertakings:

(i) Internal procedures - an undertaking by the reporting issuer to implement internal procedures that will permit preparation of the modified reports described below;

(ii) Explanatory and cautionary disclosure - an undertaking by the reporting issuer to disclose:

(A) at least annually (for example, in an annual information form), its reasons for considering the reliability of internally-generated reserves data to be not materially less than would be afforded by strict adherence to the requirements of NI 51-101, including a discussion of

(I) factors supporting the involvement of independent qualified evaluators or auditors and why such factors are not considered compelling in the case of that reporting issuer; and

(II) the manner in which the reporting issuer’s internally-generated reserves data is determined, reviewed and approved, its relevant disclosure control procedures and the related role, responsibilities and composition of responsible management, the board of directors and (if applicable) the reserves committee of the board of directors; and

(B) in each document that discloses any information derived from internally-generated reserves data and reasonably proximate to that disclosure, the fact that no independent qualified reserves evaluator or auditor was involved in the preparation of the reserves data; and

(iii) Disclosure of conflicting independent reports - an undertaking by the reporting issuer to the effect that, if despite the exemption it obtains a report on reserves data from an independent qualified reserves evaluator or auditor that contains information that differs materially from corresponding information filed by the reporting issuer in reliance on the exemption or that otherwise suggests that the reporting issuer’s public disclosure record in respect of reserves data may be misleading, it will promptly file a correction of its public disclosure.

d) Modified Reports

A discretionary exemption discussed in this section 8.2 would have the effect of varying the application of section 2.1 of NI 51-101 as though the words "each of whom is independent of the reporting issuer" were omitted from paragraph (b) of item 2.

Such an exemption would also likely contemplate modifications to the texts of the reports required under items 2 and 3 of section 2.1 of NI 51-101.

(i) Modified Form 51-101F2 - The report of the independent qualified reserves evaluator or auditor in Form 51-101F2, required by item 2 of section 2.1 of NI 51-101, would likely be modified under the terms of a discretionary exemption to reflect the substance of the exemption, substituting a report consistent in all material respects with the following:
Report on Reserves Data

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

1. Our staff and I have evaluated 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:
   (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 evaluation.

3. We carried out our evaluation in accordance with standards set out in the Canadian Oil and Gas Evaluation Handbook (the "COGE Handbook"). We are not, however, independent of the Company, within the meaning of the term "independent" under those standards.

4. Those standards require that we plan and perform an evaluation to obtain reasonable assurance as to whether the reserves data are free of material misstatement. An evaluation also includes assessing whether the reserves data are in accordance with principles and definitions presented in the COGE Handbook.

5. The following sets forth the estimated future net revenue (before deducting 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 evaluated for the year ended xxx xx, 20xx:

<table>
<thead>
<tr>
<th>Location of Reserves (country or foreign geographic area)</th>
<th>Future Net Revenue (before income taxes, 10% discount rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>xxx</td>
<td>$ xxx</td>
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<tr>
<td>xxx</td>
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<tr>
<td>xxx</td>
<td>$ xxx</td>
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</tbody>
</table>

6. In our opinion, the reserves data evaluated by us have, in all material respects, been determined in accordance with the COGE Handbook.

7. We have no responsibility to update our evaluation for events and circumstances occurring after the date of this report.

8. Because the reserves data are based on judgements regarding future events, actual results will vary and the variations may be material.

[Internal Qualified Reserves Evaluator's Name, Position, Province, Date]

[signed]"

(ii) Modified Form 51-101F3 - The report of the reporting issuer's management and directors in Form 51-101F3, required by item 3 of section 2.1 of NI 51-101, would likely be modified under the terms of a discretionary exemption to reflect the substance of the exemption, substituting a report consistent in all material respects with the following:
**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:

(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.

Our [title of internal qualified reserves evaluator[s]], who [is an / are] employee[s] of the Company, [has / have] evaluated the Company's reserves data. The report of the [internal qualified reserves evaluator[s]] [is presented below / will be filed with securities regulatory authorities concurrently with this report].

The [Reserves Committee of the] Board of Directors has:

(a) reviewed the Company's procedures for providing information to the [internal qualified reserves evaluator];

(b) met with the [internal qualified reserves evaluator] to determine whether any restrictions placed by management affect the ability of the [internal qualified reserves evaluator] to report without reservation; and

(c) reviewed the reserves data with management and the [internal qualified reserves evaluator].

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 the content and filing of the reserves data and other oil and gas information, the filing of the report of the [internal qualified reserves evaluator] on the reserves data and the content and filing of this report.

In our view, the reliability of the internally generated reserves data is not materially less than would be afforded by our involving independent qualified reserves evaluators or independent qualified reserves auditors to evaluate or audit and review the reserves data. The Company is therefore relying on an exemption, which it sought and was granted by securities regulatory authorities, from the requirement under securities legislation to involve independent qualified reserves evaluators or independent qualified reserves auditors.

The primary factors supporting the involvement of independent qualified reserves evaluators or independent qualified reserves auditors apply when (i) their knowledge of, and experience with, a reporting issuer's reserves data are superior to that of the internal evaluators and (ii) the work of the independent qualified reserves evaluators or independent qualified reserves auditors is significantly less likely to be adversely influenced by self-interest or management of the reporting issuer than the work of internal reserves evaluation staff. In our view, neither of these factors applies in our circumstances.

Our view is based in large part on the following. Our reserves data were developed in accordance with standards set out in the Canadian Oil and Gas Evaluation Handbook. Our internal reserves evaluation staff includes [number] of persons with an average of [X] years of relevant experience in evaluating reserves, of whom [number of persons] are qualified reserves evaluators for purposes of securities regulatory requirements. Our internal reserves evaluation management personnel includes [number] of persons with an average of [Y] years of relevant experience in evaluating and managing the evaluation of reserves. Our procedures, records and controls relating to the accumulation of source data and preparation of reserves data by our internal reserves evaluation staff have been established, refined, documented, and subjected to review for [Z] years by our internal financial auditors who have reported directly to the [Reserves Committee of the] Board of Directors.
Because the reserves data are based on judgements regarding future events, actual results will vary and the variations may be material.

[signature, name and title of chief executive officer]

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

[signature, name and title of director]

[signature, name and title of director]

[Date]

8.3 Exemption Permitting Substitution of FASB Standards

(a) Comparable FASB Standards

The reserves data to be disclosed under NI 51-101 include proved reserves and related future net revenue estimated using constant prices and costs. The SEC requires disclosure of comparable estimates (referred to respectively as "proved oil and gas reserve quantities" and the "standardized measure of discounted future net cash flows relating to proved oil and gas reserve quantities") or, in this Companion Policy, the "standardized measure") determined in accordance with standards established by FASB. The applicable FASB terminology and disclosure standards are currently set out in the following documents (referred to in this Companion Policy as the "FASB Standard"): (i) FASB Statement of Financial Accounting Standards No. 69 "Disclosures about Oil and Gas Producing Activities -- an amendment of FASB Statements 19, 25, 33, and 39", as amended from time to time (referred to in this Companion Policy as "FAS 69"); and (ii) paragraphs .103, .106, .107, .108, .112, .160 through .167, .174 through .184, and .401 through .408 of FASB Current Text Section Oi5, "Oil and Gas Producing Activities", which also reflect FAS 69.

(b) Discretionary Exemption to Permit Substitution of FASB Standard

A key objective of the CSA in developing NI 51-101 was to enhance the comparability of oil and gas disclosure provided by reporting issuers. The CSA recognize that, in the case of some reporting issuers that are active in United States capital markets, comparability of oil and gas disclosure with that provided by US issuers, as well as with that provided by other Canadian reporting issuers, may be important for investors.

In the absence of an exemption from Part 2 of NI 51-101, a reporting issuer that is subject both to the disclosure requirements of the SEC and to NI 51-101 would be required to prepare and present two sets of estimates -- proved reserves and the related future net revenue, as well as proved oil and gas reserve quantities and the related standardized measure -- that relate to very similar concepts. In many cases, the CSA believe that the results of the two sets of estimates would not differ substantially. The CSA recognize that the requirement to prepare and disclose two similar sets of estimates could impose a burden on reporting issuers, and be confusing to investors.

In light of these considerations, securities regulatory authorities or regulators would likely be prepared, on application by a reporting issuer that has securities registered in the US under the 1934 Act, to grant a limited exemption from certain requirements of Part 2 (and the forms referred to in that Part) and section 5.3 of NI 51-101.

Such a discretionary exemption could permit a reporting issuer to substitute disclosure of "proved oil and gas reserve quantities" and the "standardized measure" for disclosure of proved reserves and related future net revenue estimated using constant prices and costs. The exemption could also permit the applicant to apply the FASB Standard (despite any indication to the contrary in the FASB Standard) to disclosure relating to non-conventional oil and gas activities (the extraction of hydrocarbons from oil sands, shale, coal or other non-conventional sources).

In the absence of a further exemption, this discretionary exemption would not otherwise affect the reporting issuer's disclosure and other obligations under NI 51-101. For example, requirements for the reporting of other elements of reserves data, notably proved reserves and proved plus probable reserves together with the related estimates of future net revenue estimated using forecast prices and costs, would be unchanged.
With this exemption, a reporting issuer that discloses reserves estimates and related information in both Canada and the US would be able to file, in both countries, the information required by the SEC (proved oil and gas reserve quantities and the standardized measure) in the same manner as US peer issuers, facilitating comparison with those peers. At the same time the reporting issuer would present other disclosure not required by the SEC (including estimates of proved and probable reserves and related future net revenue estimated using forecast prices and costs) in accordance with NI 51-101, facilitating comparison with Canadian peer issuers.

Such an exemption might not specify an expiry date so that renewal applications would not be required.

It is unlikely that any such exemption would alter the requirements of Parts 3, 4, 5 or 6 of NI 51-101 in respect of the role and responsibilities of directors, measurement and estimation standards, requirements relating to certain voluntary disclosure, or material change reporting. Thus, for example, in the absence of applicable SEC requirements, relevant provisions of Part 5 of NI 51-101 relating to the use of BOEs, or to disclosure of an estimate of fair value of a prospect, would still apply.

(c) Likely Conditions to Discretionary Exemption

A discretionary exemption described in this section 8.3 would likely be conditional on the reporting issuer furnishing and complying with an undertaking to include in all its written disclosure of proved oil and gas reserve quantities and the standardized measure (which the reporting issuer has substituted for otherwise mandatory disclosure of proved reserves and related future net revenue estimated using constant prices and costs) a statement, reasonably proximate to that disclosure

(i) of the reporting issuer’s reliance on the exemption;

(ii) that explains generally the nature of the estimates being disclosed and the source of the underlying standards (the FASB Standards); and

(iii) to the effect that the disclosed estimates may differ from corresponding estimates of proved reserves and related future net revenue estimated using constant prices and costs prepared in accordance with NI 51-101.

8.4 Exemption Permitting US-Style Disclosure

As noted in section 8.3, the CSA recognize that for some reporting issuers that are active in US capital markets, comparability of their oil and gas disclosure with that provided by US issuers may be important for investors. In some cases, a Canadian reporting issuer may consider that comparability of disclosure to US peer issuers is of primary relevance to its investors.

The CSA acknowledge that there may be circumstances in which such an assessment is valid. At the same time, the CSA consider that the public interest requires, at minimum, clarity as to what standards are being applied in public disclosure and consistency of annual disclosure.

The CSA believe that these considerations can be addressed in appropriate cases by a discretionary exemption that builds on the exemption discussed in section 8.3. The discretionary exemption discussed in this section 8.4 could enable a reporting issuer to substitute, for much of the disclosure ordinarily required by NI 51-101, disclosure that is consistent with the FASB Standards and other relevant requirements of the SEC, provided that the reporting issuer makes clear in its disclosure that it is departing from NI 51-101 requirements and makes clear which standards are being applied.

(a) Scope of Possible Exemption

On application by a reporting issuer that has securities registered in the US under the 1934 Act, securities regulatory authorities or regulators may be prepared to grant a limited exemption from certain requirements of NI 51-101 to permit

(i) the substitution, as discussed in section 8.3, of disclosure of estimates of proved oil and gas reserve quantities and the related standardized measure, for the disclosure of proved reserves and related future net revenue estimated using constant prices and costs otherwise required by NI 51-101; and

(ii) relief from requirements of NI 51-101 for disclosure of other elements of reserves data, or other information concerning oil and gas activities contemplated in Form 51-101F1, to the extent that these elements or information exceed or differ from SEC requirements;
provided that the *reporting issuer* files, within the time prescribed in section 2.1 of *NI 51-101*, the information relating to its *oil and gas activities* contemplated by, and consistent with, the *FASB Standard* and relevant requirements of the *SEC*.

Such an exemption might not specify an expiry date so that renewal applications would not be required.

As discussed in section 8.3, the exemption could also likely permit the applicant to apply the *FASB Standard* (despite any indication to the contrary in the *FASB Standard*) to disclosure relating to non-conventional *oil and gas activities*.

No such exemption would likely affect the principle that all disclosed *reserves* and related estimates must be prepared by a *qualified reserves evaluator or auditor*. A *reporting issuer* that wishes to substitute other *evaluation or audit* standards would likely have to demonstrate that such other standards are clearly identifiable and not less comprehensive than those set out in the *COGE Handbook*.

It is also unlikely that any such exemption would alter the requirements of Parts 3, 5 or 6 of *NI 51-101* in respect of the role and responsibilities of directors, requirements relating to certain voluntary disclosure, or material change reporting. For example, in the absence of applicable *SEC* requirements, relevant provisions of Part 5 of *NI 51-101* relating to the use of *BOEs* or to disclosure of an estimate of fair value of a prospect would still apply to the extra disclosure.

Such a discretionary exemption would likely contemplate modifications of the reports of the *qualified reserves evaluator or auditor* and of management and directors, prescribed respectively by items 2 and 3 of section 2.1 of *NI 51-101*, to the extent necessary to reflect the substance of the exemption. It is unlikely that such an exemption would waive the requirement to file these reports.

No such exemption would likely be provided in connection with an initial public offering of securities or a reverse take-over or similar transaction.

**(b) Likely Conditions to Discretionary Exemption**

An exemption contemplated in this section 8.4 would likely be conditional on the *reporting issuer* furnishing and adhering to undertakings substantially as follows:

(i) **Disclosure of exemption and effect** - an undertaking to include, reasonably proximate to all written disclosure that the *reporting issuer* makes in reliance on the exemption, a statement

(A) of the *reporting issuer's* reliance on the exemption;

(B) that explains generally the nature of the information being disclosed and identifies the standards and the source of the standards being applied (if it is not otherwise readily apparent); and

(C) to the effect that the information disclosed may differ from corresponding information prepared in accordance with *NI 51-101* standards (if that is the case), and explains the difference (if any);

(ii) **Specified disclosure standards to be applied** - an undertaking to disclose, for the purpose of item 1 of section 2.1 of *NI 51-101*:

(A) the information required by the *FASB Standard*;

(B) the information required by *SEC Industry Guide 2 "Disclosure of Oil and Gas Operations"*, as amended from time to time;

(C) any other information concerning matters addressed in *Form 51-101F1* that is required by *FASB* or by the *SEC*; and

(D) if the *reporting issuer* is engaged in extracting, by mining, *bitumen or oil* from oil sands, shale or coal, the information required by *SEC Industry Guide 7 "Description of Property by Issuers Engaged or to be Engaged in Significant Mining Operations"*, as amended from time to time;

(iii) **Voluntary extra disclosure not required by *SEC or FASB*** - an undertaking that, if the *reporting issuer* (despite its exemption) makes public disclosure of a type contemplated in *NI 51-101* or *Form 51-101F1* but not required by the *SEC*:
(A) if the disclosure is of a nature and subject matter referred to in Part 5 of NI 51-101, and if there are no applicable SEC requirements or restrictions specific to that type of disclosure, the disclosure will be made in compliance with Part 5; and

(B) if the disclosure includes estimates of reserves or related future net revenue in categories not required by the SEC:

(I) the disclosure will

a. apply the reserves categories set out in the COGE Handbook; or

b. set out the reserves categories being used in enough detail to make them understandable to a reader, identify the source of those reserves categories, state that those reserves categories differ from the reserves categories set out in the COGE Handbook (if that is the case) and explain the differences (if any);

(II) if the disclosure includes an estimate of future net revenue, it will also include the corresponding estimate of reserves (although disclosure of an estimate of reserves might not have to be accompanied by an estimate of the related future net revenue).

(III) if the disclosure includes an estimate of reserves for a category other than proved reserves or proved oil and gas reserve quantities, it will also include an estimate of proved reserves (or proved oil and gas reserve quantities) based on the same price and cost assumptions, with the price assumptions disclosed;

(IV) unless the extra disclosure is made involuntarily, the reporting issuer will include disclosure of the same type in its subsequent annual filings under Part 2 of NI 51-101 for as long as the information is material; and

(V) for the purpose of clause (IV) above, if the triggering disclosure was an estimate for a particular property, unless that property is highly material for the reporting issuer its subsequent annual disclosure of that type of estimate will also include aggregate estimates for the reporting issuer and by country (or, if appropriate and not misleading, by foreign geographic area), not only estimates for that property.

Although the exemption might not require that an estimate of reserves be accompanied by an estimate of related future net revenue, the CSA would generally expect disclosure of reserves alone to be supplemented by information such as the development and production status of the reserves and the reporting issuer's plans for the development of the reserves, so that disclosure of reserves volume alone is not misleading.

For the purpose of this undertaking, disclosure would be considered to be made involuntarily if, for example:

• it was made not by or at the instigation of the reporting issuer but instead by the operator of a joint venture of which the reporting issuer is a member but not the operator, for and on behalf of all the joint venturers; or

• it was made by the reporting issuer solely in compliance with its material change disclosure obligations under securities legislation.

Although the exemption might permit a reporting issuer to apply definitions and standards other than those presented in the COGE Handbook, the CSA would expect consistency in a reporting issuer's use and disclosure of other standards within and between reporting periods.

The conditions set out above are designed to ensure that the extra disclosure applies clearly identified standards and definitions and that, if the information is material to the reporting issuer, similar information is provided in the subsequent annual filings, to enable investors to assess and compare that information from year to year.

Consequence of Voluntary Extra Disclosure: Examples

Following are examples of key consequences that would likely follow, under such undertakings, for a reporting issuer that voluntarily makes extra disclosure.

• If the reporting issuer discloses probable reserves (without related future net revenue) estimated using constant prices and costs, its subsequent annual filings would have to include estimates of probable reserves...
estimated using constant prices and costs in addition to SEC-mandated disclosure of proved oil and gas reserve quantities and the standardized measure.

- If the reporting issuer discloses probable reserves and related future net revenue estimated using constant prices and costs, its subsequent annual filings would have to include estimates of probable reserves and related future net revenue using constant prices and costs in addition to the SEC-mandated disclosure.

- If the reporting issuer discloses probable reserves (with or without related future net revenue) estimated using forecast prices and costs, its subsequent annual filings would have to include such estimates as well as estimates of proved reserves and related future net revenue, estimated using forecast prices and cost, in addition to the SEC-mandated disclosure.

8.5 Stacking of Exemptions - The possible discretionary exemptions discussed in this Part are not necessarily mutually exclusive.

In appropriate circumstances, securities regulatory authorities or regulators would likely be prepared to consider granting, on application by reporting issuers that fall within the classes contemplated in both sections 8.2 and 8.3 or in both sections 8.2 and 8.4, exemptions that combine the elements contemplated in those respective sections.

8.6 Exemption not Conferring Immunity - A discretionary exemption from any part of NI 51-101 would not imply a lesser scope or degree of regulatory review of the reporting issuer’s disclosure. The reporting issuer would still be subject to regulatory review of its filings and other disclosure, and enforcement of its disclosure obligations, whether the obligations are as set out in securities legislation or modified by the terms of an exemption.
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.

Part 1 of this Appendix sets out, in alphabetical order, certain terms and their meanings. Part 2 sets out certain reserves definitions derived from the COGE Handbook.

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 5 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, FAS 69 and the FASB Standard can be obtained from FASB, the United States Financial Accounting Standards Board.
- SEC Industry Guide 7 "Description of Property by Issuers Engaged or to be Engaged in Significant Mining Operations" can be obtained from the SEC.
- NI 14-101 can be viewed on the websites of a number of securities regulatory authorities.

PART 1 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.

<table>
<thead>
<tr>
<th>Defined Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1934 Act</strong></td>
<td>The Securities Exchange Act of 1934 of the United States of America, as amended from time to time. [NI 14-101]</td>
</tr>
<tr>
<td><strong>Annual information form</strong></td>
<td>Any of the following:</td>
</tr>
<tr>
<td>(a) a &quot;current AIF&quot;, as defined in NI 44-101;</td>
<td></td>
</tr>
<tr>
<td>(b) in the case of a reporting issuer that is eligible to file, for the purpose of Part 3 of NI 44-101, a current annual report on Form 10-K or Form 20-F under the 1934 Act, such a current annual report so filed; or</td>
<td></td>
</tr>
<tr>
<td>(c) a document prepared in Form 44-101F1 AIF and filed with the securities regulatory authority in the jurisdiction in accordance with securities legislation of that jurisdiction other than NI 44-101.</td>
<td></td>
</tr>
<tr>
<td>[NI 51-101]</td>
<td></td>
</tr>
</tbody>
</table>
**Associated gas**
The gas cap overlying a crude oil accumulation in a reservoir. See gas.

**Audit**
In relation to reserves data, the process whereby an independent qualified reserves auditor carries out procedures designed to allow the independent qualified reserves auditor to provide reasonable assurance, in the form of an opinion that the reporting issuer’s reserves data (or specific parts thereof) have, in all material respects, been determined and presented in accordance with the COGE Handbook and are, therefore, free of material misstatement.

Because of
(a) the nature of the subject matter (estimates of future results with many uncertainties);
(b) the fact that the independent qualified reserves auditor assesses the qualifications and experience of the reporting issuer’s staff, assesses the reporting issuer’s systems, procedures and controls and relies on the competence of the reporting issuer’s staff and the appropriateness of the reporting issuer’s systems, procedures and controls; and
(c) the fact that tests and samples (involving examination of underlying documentation supporting the determination of the reserves and future net revenue) as opposed to complete evaluations, are involved;
(d) the level of assurance is designed to be high, though not absolute.

The level of assurance cannot be described with numeric precision. It will usually be less than, but reasonably close to, that of an independent evaluation and considerably higher than that of a review.

[COGE Handbook]

**Bbl**
Barrel.

**Bitumen**
A highly viscous oil which is too thick to flow in its native state, and which cannot be produced without altering its viscosity. The density of bitumen is generally less than 10 degrees API (as that term is defined by the American Petroleum Institute).

**BOEs**
Barrels of oil equivalent. [NI 51-101 and COGE Handbook]

**Canadian GAAP**
Generally accepted accounting principles determined with reference to the CICA Handbook. [NI 14-101]

**CICA**
The Canadian Institute of Chartered Accountants. [NI 51-101]

**CICA Accounting Guideline 5**
Accounting Guideline AcG-5 "Full cost accounting in the oil and gas industry" included in the CICA Handbook, as amended from time to time. [NI 51-101]

**CICA Handbook**
The Handbook of the CICA, as amended from time to time.

**COGE Handbook**
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).

**Constant prices and costs**
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.

[COGE Handbook]

**Crude oil**

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 reservoir and that is liquid at the conditions under which its volume is measured or estimated. It does not include solution gas or natural gas liquids.

[COGE Handbook]

**CSA**

The Canadian Securities Administrators, an association consisting of the thirteen securities regulatory authorities in Canada.

**Developed non-producing reserves**

See Part 2 of this Appendix.  [COGE Handbook]

**Developed producing reserves**

See Part 2 of this Appendix.  [COGE Handbook]

**Developed reserves**

See Part 2 of this Appendix.  [COGE Handbook]

**Development costs**

Costs incurred to obtain access to reserves and to provide facilities for extracting, treating, gathering and storing the oil and gas from the reserves.

More specifically, development costs, including applicable operating costs of support equipment and facilities and other costs of development activities, are costs incurred to:

(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, gas lines and power lines, to the extent necessary in developing the reserves;

(b) drill and equip development wells, development type stratigraphic test wells and service wells, including the costs of platforms and of well equipment such as casing, tubing, pumping equipment and the wellhead assembly;

(c) acquire, construct and install production facilities such as flow lines, separators, treaters, heaters, manifolds, measuring devices and production storage tanks, natural gas cycling and processing plants, and central utility and waste disposal systems; and

(d) provide improved recovery systems. [CICA Accounting Guideline 5]

**Development well**

A well drilled inside the established limits of an oil or gas reservoir, or in close proximity to the edge of the reservoir, to the depth of a stratigraphic horizon known to be productive. [CICA Accounting Guideline 5]

**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 reserves data, the process whereby an economic analysis is made of a property to arrive at an estimate of a range of net present values of the estimated future net revenue resulting from the production of the reserves associated with the property.  [COGE Handbook]

**Exploration costs**

Costs incurred in identifying areas that may warrant examination and in examining specific areas that are considered to have prospects that may contain oil and gas reserves, including costs of drilling exploratory wells and exploratory type stratigraphic test wells.
Exploration costs may be incurred both before acquiring the related property (sometimes referred to in part as "prospecting costs") and after acquiring the property. Exploration costs, which include applicable operating costs of support equipment and facilities and other costs of exploration activities, are:

(a) costs of topographical, geochemical, geological and geophysical studies, rights of access to properties 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 properties, such as delay rentals, taxes (other than income and capital taxes) on properties, legal costs for title defence, and the maintenance of land and lease records;

(c) dry hole contributions and bottom hole contributions;

(d) costs of drilling and equipping exploratory wells; and

(e) costs of drilling exploratory type stratigraphic test wells.

[\text{CICA Accounting Guideline 5}]

**Exploratory well**

A well that is not a development well, a service well or a stratigraphic test well. \[\text{[CICA Accounting Guideline 5]}\]

**FAS 19**

FASB Statement of Financial Accounting Standards No. 19 "Financial Accounting and Reporting by Oil and Gas Producing Companies", as amended from time to time. \[\text{[NI 51-101]}\]

**FAS 69**

FASB Statement of Financial Accounting Standards No. 69 "Disclosure about Oil and Gas Producing Activities - an amendment of FASB Statements 19, 25, 33 and 39", as amended from time to time.

**FASB**

United States Financial Accounting Standards Board.

**FASB Standard**

The following:

(a) FAS 69; and

(b) paragraphs .103, .106, .107, .108, .112, .160 through .167, .174 through .184, and .401 through .408 of FASB Current Text Section 015, "Oil and Gas Producing Activities", which also reflects FAS 69.

**Field**

An area consisting of a single reservoir or multiple reservoirs all grouped on or related to the same individual geological structural feature and/or stratigraphic condition.

There may be two or more reservoirs in a field that are separated vertically by intervening impervious strata or laterally by local geologic barriers, or both. Reservoirs that are associated by being in overlapping or adjacent fields may be treated as a single or common operational field. 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".

[\text{FASB Standard paragraph .403}]
Forecast prices and costs

Future prices and costs that are:

(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 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).

Foreign geographic area

A geographic area outside North America within one country or including all or portions of a number of countries.

Form 51-101F1

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

Form 51-101F2

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

Form 51-101F3

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

Future income tax expenses

Future income tax expenses estimated (generally, year-by-year):

(a) making appropriate allocations of estimated unclaimed costs and losses carried forward for tax purposes, between oil and gas activities 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 net cash flows relating to the reporting issuer’s oil and gas activities the appropriate year-end statutory tax rates, taking into account future tax rates already legislated.

Future net revenue

The estimated net amount to be received with respect to the development and production of reserves (including synthetic oil, coal bed methane and other non-conventional reserves) estimated using:

(a) constant prices and costs; or

(b) forecast prices and costs.

This net amount is computed by deducting, from estimated future revenues:

- estimated amounts of future royalty obligations;

- costs related to the development and production of reserves;

- well abandonment costs; and

- future income tax expenses, unless otherwise specified in NI 51-101, Form 51-101F1 or Form 51-101F2.

Corporate general and administrative expenses and financing costs are not deducted. Net present values of future net revenue may be calculated using a discount rate or without discount.

Gas (or natural gas)

The lighter hydrocarbons and associated non-hydrocarbon substances occurring naturally in an underground reservoir, which under atmospheric conditions are essentially gases but which may contain natural gas liquids.
Gas can exist in a reservoir either
(a) dissolved in crude oil (solution gas); or
(b) in a gaseous phase (associated gas or non-associated gas).

Non-hydrocarbon substances may include hydrogen sulphide, carbon dioxide and nitrogen. [COGE Handbook]

**Gross**
(a) In relation to a reporting issuer's interest in production or reserves, its "company gross reserves", which are the reporting issuer's working interest (operating or non-operating) share before deduction of royalties and without including any royalty interests of the reporting issuer. [COGE Handbook]

(b) In relation to wells, the total number of wells in which a reporting issuer has an interest.

(c) In relation to properties, the total area of properties in which a reporting issuer has an interest.

**Heavy oil**
In respect of reserves or production:
(a) in a jurisdiction that has a royalty regime specific to heavy oil, "heavy oil" is oil that qualifies for royalties specific to heavy oil; or

(b) in a jurisdiction that has no royalty regime specific to heavy oil, "heavy oil" is oil with a density between 10 to 22.3 degrees API (as that term is defined by the American Petroleum Institute). [COGE Handbook]

**Independent**
In respect of the relationship between a reporting issuer and a qualified reserves evaluator or auditor, the term has the meaning set out in the COGE Handbook.

**Instrument** (or NI 51-101)
NI 51-101 Standards of Disclosure for Oil and Gas Activities.

**Jurisdiction**
For the purposes of NI 51-101, a province or territory of Canada. [NI 14-101]

**Lease**
An agreement granting to the lessee rights to explore, develop and exploit a property.

**Marketable**
In respect of reserves or sales of oil, gas or associated by-products, the volume of oil, gas 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 gas, this may occur either before or after removal of natural gas liquids. For heavy oil or bitumen, this is before the addition of diluent.

**Material (or materiality)**
For the purposes of NI 51-101, 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.

This meaning differs from the definitions of "material change" and "material fact" in securities legislation, but is consistent with the meaning of the term as used, for accounting purposes, in the CICA Handbook. [NI 51-101]

**Mcf**
Thousand cubic feet.

**McfGE**
Thousand cubic feet of gas equivalent. [NI 51-101 and COGE Handbook]

**Natural gas**
Gas. [COGE Handbook]
Natural gas liquids  Those hydrocarbon components that can be recovered from natural gas as liquids including, but not limited to, ethane, propane, butanes, pentanes plus, condensate and small quantities of non-hydrocarbons.  

[COGE Handbook]

Net  (a)  In relation to a reporting issuer's interest in production or reserves, the reporting issuer's working interest (operating or non-operating) share after deduction of royalty obligations, plus the reporting issuer's royalty interests in production or reserves.  

[COGE Handbook]

(b)  In relation to a reporting issuer's interest in wells, the number of wells obtained by aggregating the reporting issuer's working interest in each of its gross wells.

(c)  In relation to a reporting issuer's interest in a property, the total area in which the reporting issuer has an interest multiplied by the working interest owned by the reporting issuer.


NI 51-101 or the Instrument  National Instrument 51-101 Standards of Disclosure for Oil and Gas Activities.

Non-associated gas  An accumulation of natural gas in a reservoir where there is no crude oil. See gas.  

Oil  Crude oil or synthetic oil.  

[COGE Handbook]

Oil and gas activities  "Oil and gas activities":  

(a)  include:  

(i)  the search for crude oil or natural gas in their natural states and original locations;  

(ii)  the acquisition of property rights or properties for the purpose of further exploring for or removing oil or gas from reservoirs on those properties;  

(iii)  the construction, drilling and production activities necessary to recover oil and gas from reservoirs, and the acquisition, construction, installation and maintenance of field gathering and storage systems, including lifting oil and gas to the surface and gathering, treating, field processing and field storage; and  

(iv)  the extraction of hydrocarbons from oil 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  

(b)  do not include:  

(i)  transporting, refining or marketing oil or gas;  

(ii)  activities relating to the extraction of natural resources other than oil and gas and their by-products; or  

(iii)  the extraction of geothermal steam or of hydrocarbons as a by-product of the extraction of geothermal steam or associated geothermal resources.  

[NI 51-101]

Operating costs  Production costs.
Possible reserves: See Part 2 of this Appendix. [COGE Handbook]

Preparation date: In respect of written disclosure, the most recent date to which information relating to the period ending on the effective date was considered in the preparation of the disclosure.

Probable reserves: See Part 2 of this Appendix. [COGE Handbook]

Production: Recovering, gathering, treating, field or plant processing (for example, processing gas to extract natural gas liquids) and field storage of oil and gas.

The oil production function is usually regarded as terminating at the outlet valve on the lease or field production storage tank. The gas production function is usually regarded as terminating at the plant gate. In some circumstances, it may be more appropriate to regard the production function as terminating at the first point at which oil, gas or their by-products are delivered to a main pipeline, a common carrier, a refinery or a marine terminal.

Production costs (or Operating costs): Costs incurred to operate and maintain wells and related equipment and facilities, including applicable operating costs of support equipment and facilities and other costs of operating and maintaining those wells and related equipment and facilities.

Lifting costs become part of the cost of oil and gas produced.

Examples of production costs are:

(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) property taxes and insurance costs applicable to properties and wells and related equipment and facilities; and
(f) taxes, other than income and capital taxes.

Production group: One of the following together, in each case, with associated by-products:

(a) light and medium crude oil (combined);
(b) heavy oil;
(c) associated gas and non-associated gas (combined); and
(d) bitumen, synthetic oil or other products from non-conventional oil and gas activities.

Product type: One of the following:

(a) in respect of conventional oil and gas activities:
   (i) light and medium crude oil (combined);
   (ii) heavy oil;
   (iii) natural gas excluding natural gas liquids; or
   (iv) natural gas liquids; and
(b) in respect of non-conventional oil and gas activities:
   (i) synthetic oil;
Rules and Policies

(ii) bitumen;

(iii) coal bed methane; or

(iv) hydrates.

[NI 51-101]

Professional organization A self-regulatory organization of engineers, geologists, other geoscientists or other professionals whose professional practice includes reserves evaluations or reserves audits, that:

(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, evaluation, review or audit of reserves data;

(c) has disciplinary powers, including the power to suspend or expel a member; and

(d) is either:

(i) given authority or recognition by statute in a Canadian jurisdiction; or

(ii) accepted for this purpose by the securities regulatory authority or the regulator.

[NI 51-101]

Property A property includes:

(a) fee ownership or a lease, concession, agreement, permit, licence or other interest representing the right to extract oil or gas subject to such terms as may be imposed by the conveyance of that interest;

(b) royalty interests, production payments payable in oil or gas, and other non-operating interests in properties operated by others; and

(c) an agreement with a foreign government or authority under which a reporting issuer participates in the operation of properties or otherwise serves as "producer" of the underlying reserves (in contrast to being an independent purchaser, broker, dealer or importer).

A property does not include supply agreements, or contracts that represent a right to purchase, rather than extract, oil or gas.

[CICA Accounting Guideline 5]

Property acquisition costs Costs incurred to acquire a property (directly by purchase or lease, or indirectly by acquiring another corporate entity with an interest in the property), including:

(a) costs of lease bonuses and options to purchase or lease a property;

(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 properties.

[CICA Accounting Guideline 5]

Prospect A geographic or stratigraphic area, in which the reporting issuer owns or intends to own one or more oil and gas interests, which is geographically defined on the basis of geological data.
and which is reasonably anticipated to contain at least one reservoir or part of a reservoir of oil and gas.

**Proved property**

A property or part of a property to which reserves have been specifically attributed.

**Proved reserves**

See Part 2 of this Appendix. [COGE Handbook]

**Qualified reserves auditor**

An individual who:

(a) in respect of particular reserves data or related information, possesses professional qualifications and experience appropriate for the estimation, evaluation, review and audit of the reserves data and related information; and

(b) is a member in good standing of a professional organization.

[NI 51-101]

**Qualified reserves evaluator**

An individual who:

(a) in respect of particular reserves data or related information, possesses professional qualifications and experience appropriate for the estimation, evaluation and review of the reserves data and related information; and

(b) is a member in good standing of a professional organization.

[NI 51-101]

**Qualified reserves evaluator or auditor**

A qualified reserves auditor or a qualified reserves evaluator.

[NI 51-101]

**Regulator**

The securities regulatory authority or a person who holds a specified position with the securities regulatory authority (in several instances, its Executive Director or Director) in each jurisdiction.

[NI 14-101]

**Reporting issuer**

(a) A "reporting issuer" as defined in securities legislation; or

(b) in a jurisdiction in which the term is not defined in securities legislation, an issuer of securities that is required to file financial statements with the securities regulatory authority.

**Reservation**

In relation to a report on reserves data, a modification of the standard report of an independent qualified reserves evaluator or auditor on reserves data set out in Form 51-101F2, caused by a departure from the COGE Handbook or by a limitation in the scope of work that the independent qualified reserves evaluator or auditor considers necessary. A modification may take the form of a qualified or adverse opinion or a denial of opinion.

**Reserves**

See Part 2 of this Appendix. [COGE Handbook]
Reserves data
The following estimates, as at the last day of the reporting issuer’s most recent financial year:

(a) proved reserves and related future net revenue estimated:
   (i) using constant prices and costs as at the last day of that financial year; and
   (ii) using forecast prices and costs; and

(b) probable reserves and related future net revenue estimated using forecast prices and costs.

[Ni 51-101]

Reservoir
A porous and permeable underground formation containing a natural accumulation of producible oil or gas that is confined by impermeable rock or water barriers and is individual and separate from other reservoirs. [CICA Accounting Guideline 5]

Resources
Those quantities of oil and gas estimated to exist originally in naturally occurring accumulations.

Resources 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.

Resources are divided into:

(a) discovered resources, which are limited to known accumulations; and

(b) undiscovered resources.

[COGE Handbook]

Review
In relation to the role of a qualified reserves evaluator or auditor in respect of reserves data, steps carried out by the qualified reserves evaluator or auditor, consisting primarily of enquiry, analytical procedures, analysis, review of historical reserves performance and discussion with reserves management staff related to a reporting issuer's reserves data, with the limited objective of assessing whether the reserves data is "plausible" in the sense of appearing to be worthy of belief based on the information obtained by the qualified reserves evaluator or auditor as a result of carrying out such steps. Examination of documentation is not required unless the information does not appear to be plausible.

A reserves review, due to the limited nature of the investigation involved, does not provide the level of assurance provided by a reserves audit. Although reserves reviews can be done for specific applications, they are not a substitute for an audit.

[COGE Handbook]

SEC
The Securities and Exchange Commission of the United States of America. [Ni 14-101]

Securities legislation
The statute (in most cases entitled the "Securities Act") and subordinate legislation (in most cases including regulations or rules) specified, for each jurisdiction, in Ni 14-101.

References in Ni 51-101 to securities legislation are to be read as references to securities legislation in the particular jurisdiction.

Securities regulatory authority
The securities commission or comparable body specified, for each jurisdiction, in Ni 14-101.

References in Ni 51-101 to the securities regulatory authority are to be read as references to the securities regulatory authority in the particular jurisdiction.

SEDAR
Senior producing issuer  A reporting issuer that:

(a) demonstrates capability to estimate its reserves and future net revenue in accordance with the COGE Handbook (other than with respect to independence); and

(b) produced an average of more than 100,000 BOEs of oil and gas (converted in the ratio 6 Mcf : 1 bbl) per day throughout its most recent financial year.

Service well  A well drilled or completed for the purpose of supporting production in an existing field. Wells in this class are drilled for the following specific purposes: gas injection (natural gas, propane, butane or flue gas), water injection, steam injection, air injection, salt-water disposal, water supply for injection, observation, or injection for combustion.

Solution gas  Gas dissolved in crude oil. See gas.

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 production. They include wells for the purpose of core tests and all types of expendable holes related to hydrocarbon exploration.

Stratigraphic test wells are classified as

(a) "exploratory type" if not drilled into a proved property; or

(b) "development type", if drilled into a proved property. Development type stratigraphic wells are also referred to as "evaluation wells". [CICA Accounting Guideline 5]

Support equipment and facilities  Equipment and facilities used in oil and gas activities, including seismic equipment, drilling equipment, construction and grading equipment, vehicles, repair shops, warehouses, supply points, camps, and division, district or field offices.

Supporting filing  A document that has been filed by the reporting issuer with a securities regulatory authority. [NI 51-101]

Synthetic oil  A mixture of hydrocarbons derived by upgrading crude bitumen from oil sands or kerogen from oil shales or other substances such as coal.

[COGE Handbook]

Undeveloped reserves  See Part 2 of this Appendix. [COGE Handbook]

Unproved property  A property or part of a property to which no reserves have been specifically attributed.

Well abandonment costs  Costs of abandoning a well (net 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.

PART 2 DEFINITIONS OF RESERVES

This Part is derived from Section 5.4 of Volume 1 of the COGE Handbook (First Edition, June 30, 2002). Consult the COGE Handbook for additional explanation and guidance.

The following definitions and guidelines have been prepared by the Standing Committee on Reserves Definitions of the CIM (Petroleum Society) after many years of consultations and deliberations. These definitions and guidelines must be used by qualified evaluators when evaluating and reporting oil and gas reserves and related substances.

The definitions and guidelines are designed to assist:

- evaluators in making reserves estimates on a reasonably consistent basis;
users of evaluation reports in understanding what such reports contain and, if necessary, in judging whether evaluators have followed generally accepted standards.

The guidelines outline

- general criteria for classifying reserves,
- procedures and methods for estimating reserves,
- confidence levels of individual entity and aggregate reserves estimates,
- verification and testing of reserves estimates.

The determination of oil and gas reserves involves the preparation of estimates that have an inherent degree of associated uncertainty. Categories of proved, probable, and possible reserves have been established to reflect the level of these uncertainties and to provide an indication of the probability of recovery.

The estimation and classification of reserves requires the application of professional judgement combined with geological and engineering knowledge to assess whether or not specific reserves classification criteria have been satisfied. Knowledge of concepts including uncertainty and risk, probability and statistics, and deterministic and probabilistic estimation methods is required to properly use and apply reserves definitions. These concepts are presented and discussed in greater detail within the guidelines in Section 5.5 [of the COGE Handbook].

The following definitions apply to both estimates of individual reserves entities and the aggregate of reserves for multiple entities.

**Reserves Categories**

Reserves are estimated remaining quantities of oil and natural gas and related substances anticipated to be recoverable from known accumulations, from a given date forward, based on

- analysis of drilling, geological, geophysical and engineering data;
- the use of established technology; and
- specified economic conditions\(^1\), which are generally accepted as being reasonable, and shall be disclosed.

Reserves are classified according to the degree of certainty associated with the estimates

(a) **Proved reserves** are those reserves 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 reserves.

(b) **Probable reserves** are those additional reserves that are less certain to be recovered than proved reserves. It is equally likely that the actual remaining quantities recovered will be greater or less than the sum of the estimated proved plus probable reserves.

(c) **Possible reserves** are those additional reserves that are less certain to be recovered than probable reserves. It is unlikely that the actual remaining quantities recovered will exceed the sum of the estimated proved plus probable plus possible reserves.

Other criteria that must also be met for the categorization of reserves are provided in [Section 5.5 of the COGE Handbook].

**Development and Production Status**

Each of the reserves categories (proved, probable and possible) may be divided into developed and undeveloped categories:

---

\(^1\) For the purposes of NI 51-101, the key economic assumptions will be the prices and costs used in the estimate, namely:

(a) **constant prices and costs** as at the last day of a reporting issuer's financial year; or

(b) **forecast prices and costs**.
Developed reserves are those reserves 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 reserves on production. The developed category may be subdivided into producing and non-producing.

(i) Developed producing reserves are those reserves that are expected to be recovered from completion intervals open at the time of the estimate. These reserves may be currently producing or, if shut-in, they must have previously been on production, and the date of resumption of production must be known with reasonable certainty.

(ii) Developed non-producing reserves are those reserves that either have not been on production, or have previously been on production, but are shut-in, and the date of resumption of production is unknown.

Undeveloped reserves are those reserves 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 production. They must fully meet the requirements of the reserves classification (proved, probable, possible) to which they are assigned.

In multi-well pools it may be appropriate to allocate total pool reserves between the developed and undeveloped categories or to subdivide the developed reserves for the pool between developed producing and developed non-producing. This allocation should be based on the estimator’s assessment as to the reserves that will be recovered from specific wells, facilities and completion intervals in the pool and their respective development and production status.

Levels of Certainty for Reported Reserves

The qualitative certainty levels referred to in the definitions above are applicable to individual reserves entities (which refers to the lowest level at which reserves calculations are performed) and to reported reserves (which refers to the highest-level sum of individual entity estimates for which reserves estimates are presented). Reported reserves should target the following levels of certainty under a specific set of economic conditions:

- at least a 90 percent probability that the quantities actually recovered will equal or exceed the estimated proved reserves;
- at least a 50 percent probability that the quantities actually recovered will equal or exceed the sum of the estimated proved plus probable reserves; and
- at least a 10 percent probability that the quantities actually recovered will equal or exceed the sum of the estimated proved plus probable plus possible reserves.

A quantitative measure of the certainty levels pertaining to estimates prepared for the various reserves categories is desirable to provide a clearer understanding of the associated risks and uncertainties. However, the majority of reserves estimates will be prepared using deterministic methods that do not provide a mathematically derived quantitative measure of probability. In principle, there should be no difference between estimates prepared using probabilistic or deterministic methods.

Additional clarification of certainty levels associated with reserves estimates and the effect of aggregation is provided in Section 5.5.3 [of the COGE Handbook].
APPENDIX 2
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 1.2, 2.2, 2.3 and 2.9 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
AND NET PRESENT VALUES OF FUTURE NET REVENUE
as of December 31, 2003
CONSTANT PRICES AND COSTS

<table>
<thead>
<tr>
<th>RESERVES CATEGORY</th>
<th>LIGHT AND MEDIUM OIL</th>
<th>HEAVY OIL</th>
<th>NATURAL GAS (1)</th>
<th>NATURAL GAS LIQUIDS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gross (Mbbl)</td>
<td>Net (Mbbl)</td>
<td>Gross (Mbbl)</td>
<td>Net (Mbbl)</td>
</tr>
<tr>
<td>PROVED</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developed Producing</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Developed Non-Producing</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Undeveloped</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>TOTAL PROVED</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
</tr>
<tr>
<td>PROBABLE</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>TOTAL PROVED PLUS PROBABLE</td>
<td>xxxxxx</td>
<td>xxxxxx</td>
<td>xxxxxx</td>
<td>xxxxxx</td>
</tr>
</tbody>
</table>

(1) Estimates of reserves of natural gas may be reported separately for (i) associated and non-associated gas (combined) and (ii) solution gas.

<table>
<thead>
<tr>
<th>RESERVES CATEGORY</th>
<th>BEFORE INCOME TAXES DISCOUNTED AT (%/year)</th>
<th>AFTER INCOME TAXES DISCOUNTED AT (%/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 (MM$)</td>
<td>5 (MM$)</td>
</tr>
<tr>
<td>PROVED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developed Producing</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Developed Non-Producing</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Undeveloped</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>TOTAL PROVED</td>
<td>xxx</td>
<td>xxx</td>
</tr>
<tr>
<td>PROBABLE</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>TOTAL PROVED PLUS PROBABLE</td>
<td>xxxxxx</td>
<td>xxxxxx</td>
</tr>
</tbody>
</table>

Reference: Item 2.1(1) and (2) of Form 51-101F1
### TOTAL FUTURE NET REVENUE (UNDISCOUNTED)
as of December 31, 2003
CONSTANT PRICES AND COSTS

<table>
<thead>
<tr>
<th>RESERVES CATEGORY</th>
<th>REVENUE (M$)</th>
<th>ROYALTIES (M$)</th>
<th>OPERATING COSTS (M$)</th>
<th>DEVELOPMENT COSTS (M$)</th>
<th>WELL ABANDONMENT COSTS (M$)</th>
<th>FUTURE NET REVENUE BEFORE INCOME TAXES (M$)</th>
<th>INCOME TAXES (M$)</th>
<th>FUTURE NET REVENUE AFTER INCOME TAXES (M$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proved Reserves</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
</tr>
<tr>
<td>Proved Plus Probable Reserves</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
</tr>
</tbody>
</table>

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

### FUTURE NET REVENUE BY PRODUCTION GROUP
as of December 31, 2003
CONSTANT PRICES AND COSTS

<table>
<thead>
<tr>
<th>RESERVES CATEGORY</th>
<th>PRODUCTION GROUP</th>
<th>FUTURE NET REVENUE BEFORE INCOME TAXES (discounted at 10%/year) (M$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proved Reserves</td>
<td>Light and Medium Crude Oil (including solution gas and other by-products) Heavy Oil (including solution gas and other by-products) Natural Gas (including by-products but excluding solution gas from oil wells)</td>
<td>xxx</td>
</tr>
<tr>
<td>Proved Plus Probable Reserves</td>
<td>Light and Medium Crude Oil (including solution gas and other by-products)</td>
<td>xxx</td>
</tr>
<tr>
<td></td>
<td>Heavy Oil (including solution gas and other by-products) Natural Gas (including by-products but excluding solution gas from oil wells)</td>
<td>xxx</td>
</tr>
</tbody>
</table>

Reference: Item 2.1(3)(c) of Form 51-101F1
## SUMMARY OF OIL AND GAS RESERVES
AND NET PRESENT VALUES OF FUTURE NET REVENUE
as of December 31, 2003
FORECAST PRICES AND COSTS

### RESERVES

<table>
<thead>
<tr>
<th>RESERVES CATEGORY</th>
<th>LIGHT AND MEDIUM OIL</th>
<th>HEAVY OIL</th>
<th>NATURAL GAS</th>
<th>NATURAL GAS LIQUIDS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gross (Mbbl)</td>
<td>Net (Mbbl)</td>
<td>Gross (Mbbl)</td>
<td>Net (Mbbl)</td>
</tr>
<tr>
<td>PROVED</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developed Producing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developed Non-Producing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undeveloped</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL PROVED</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROBABLE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL PROVED PLUS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROBABLE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) Estimates of reserves of natural gas may be reported separately for (i) associated and non-associated gas (combined) and (ii) solution gas.

### NET PRESENT VALUES OF FUTURE NET REVENUE

<table>
<thead>
<tr>
<th>RESERVES CATEGORY</th>
<th>BEFORE INCOME TAXES DISCOUNTED AT (%/year)</th>
<th>AFTER INCOME TAXES DISCOUNTED AT (%/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 (MM$)</td>
<td>5 (MM$)</td>
</tr>
<tr>
<td>PROVED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developed Producing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developed Non-Producing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undeveloped</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL PROVED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROBABLE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL PROVED PLUS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reference: Item 2.2(1) and (2) of Form 51-101F1
### TOTAL FUTURE NET REVENUE
(UNDISCOUNTED)
as of December 31, 2003
FORECAST PRICES AND COSTS

<table>
<thead>
<tr>
<th>RESERVES CATEGORY</th>
<th>REVENUE (M$)</th>
<th>ROYALTIES (M$)</th>
<th>OPERATING COSTS (M$)</th>
<th>DEVELOPMENT COSTS (M$)</th>
<th>WELL ABANDONMENT COSTS (M$)</th>
<th>FUTURE NET REVENUE BEFORE INCOME TAXES (M$)</th>
<th>INCOME TAXES (M$)</th>
<th>FUTURE NET REVENUE AFTER INCOME TAXES (M$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proved Reserves</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
</tr>
<tr>
<td>Proved Plus Probable Reserves</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
</tr>
</tbody>
</table>

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

### FUTURE NET REVENUE
BY PRODUCTION GROUP
as of December 31, 2003
FORECAST PRICES AND COSTS

<table>
<thead>
<tr>
<th>RESERVES CATEGORY</th>
<th>PRODUCTION GROUP</th>
<th>FUTURE NET REVENUE BEFORE INCOME TAXES (discounted at 10%/year) (M$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proved Reserves</td>
<td>Light and Medium Crude Oil (including solution gas and other by-products)</td>
<td>xxx</td>
</tr>
<tr>
<td></td>
<td>Heavy Oil (including solution gas and other by-products)</td>
<td>xxx</td>
</tr>
<tr>
<td></td>
<td>Natural Gas (including by-products but excluding solution gas and by-products from oil wells)</td>
<td>xxx</td>
</tr>
<tr>
<td>Proved Plus Probable Reserves</td>
<td>Light and Medium Crude Oil (including solution gas and other by-products)</td>
<td>xxx</td>
</tr>
<tr>
<td></td>
<td>Heavy Oil (including solution gas and other by-products)</td>
<td>xxx</td>
</tr>
<tr>
<td></td>
<td>Natural Gas (including by-products but excluding solution gas from oil wells)</td>
<td>xxx</td>
</tr>
</tbody>
</table>

Reference: Item 2.2(3)(c) of Form 51-101F1
# SUMMARY OF PRICING ASSUMPTIONS

as of December 31, 2003

## CONSTANT PRICES AND COSTS

<table>
<thead>
<tr>
<th>Year</th>
<th>OIL(1)</th>
<th>NATURAL GAS(1)</th>
<th>NATURAL GAS LIQUIDS FOB</th>
<th>EXCHANGE RATE(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WTI Cushing Oklahoma ($US/bbl)</td>
<td>Edmonton Par Price 40° API ($Cdn/bbl)</td>
<td>Hardisty Heavy 12° API ($Cdn/bbl)</td>
<td>Cromer Medium 29.3° API ($Cdn/bbl)</td>
</tr>
<tr>
<td>Historical (Year End)</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>2000</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>2001</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>2002</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>2003 (Year End)</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
</tbody>
</table>

(1) This summary table identifies benchmark reference pricing schedules that might apply to a reporting issuer.

(2) 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, 2003**

**FORECAST PRICES AND COSTS**

<table>
<thead>
<tr>
<th>Year</th>
<th>Year</th>
<th><strong>OIL</strong>(1)</th>
<th><strong>NATURAL GAS</strong>(1)</th>
<th><strong>NATURAL GAS LIQUIDS FOB Field Gate</strong></th>
<th><strong>INFLATION RATES</strong>(2)</th>
<th><strong>EXCHANGE RATE</strong>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>WTI Cushing</td>
<td>Edmonton Par Price</td>
<td>Cromer Medium</td>
<td>AECO Gas Price</td>
<td>($Cdn/MMBtu)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oklahoma $US/bbl</td>
<td>40° API $Cdn/bbl</td>
<td>29.3° API $Cdn/bbl</td>
<td>12° API $Cdn/bbl</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$US/bbl</td>
<td>$Cdn/bbl</td>
<td>$Cdn/bbl</td>
<td>$Cdn/bbl</td>
<td></td>
</tr>
<tr>
<td>Historical(4)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2000</td>
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</tr>
<tr>
<td>2001</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>2002</td>
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<td>Thereafter</td>
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<td>xx</td>
<td>xx</td>
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</tr>
</tbody>
</table>

---

**OPTIONAL**

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 (2003, in this example).

Reference: Item 3.2 of Form 51-101 F1
## RECONCILIATION OF
COMPANY NET RESERVES
BY PRINCIPAL PRODUCT TYPE

[FORECAST/CONSTANT] PRICES AND COSTS (1)

<table>
<thead>
<tr>
<th>FACTORS</th>
<th>LIGHT AND MEDIUM OIL</th>
<th>HEAVY OIL</th>
<th>ASSOCIATED AND NON-ASSOCIATED GAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 31, 2002</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
</tr>
<tr>
<td>Extensions</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Improved Recovery</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Technical Revisions</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Discoveries</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Acquisitions</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Dispositions</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Economic Factors</td>
<td>xx</td>
<td>xx</td>
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</tr>
<tr>
<td>Production</td>
<td>xx</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>December 31, 2003</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
</tr>
</tbody>
</table>

(1) A reconciliation of reserves estimates may be presented using either constant prices and costs or forecast prices and costs provided that the price and cost case is indicated in the disclosure of the reserves reconciliation.

Reference: Item 4.1 of Form 51-101F1
# RECONCILIATION OF CHANGES IN NET PRESENT VALUES OF FUTURE NET REVENUE DISCOUNTED AT 10% PER YEAR

## PROVED RESERVES

### CONSTANT PRICES AND COSTS

<table>
<thead>
<tr>
<th>PERIOD AND FACTOR</th>
<th>2003 (M$)</th>
<th>2002 (M$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated Future Net Revenue at Beginning of Year</td>
<td>xxx</td>
<td>xxx</td>
</tr>
<tr>
<td>Sales and Transfers of Oil and Gas Produced, Net of Production Costs and Royalties</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Net Change in Prices, Production Costs and Royalties Related to Future Production</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Changes in Previously Estimated Development Costs Incurred During the Period</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Changes in Estimated Future Development Costs</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Extensions and Improved Recovery</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Discoveries</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Acquisitions of Reserves</td>
<td>xx</td>
<td>xx</td>
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<tr>
<td>Dispositions of Reserves</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Net Change Resulting from Revisions in Quantity Estimates</td>
<td>xx</td>
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<tr>
<td>Accretion of Discount</td>
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<td>xx</td>
</tr>
<tr>
<td>Net Change in Income Taxes</td>
<td>xx</td>
<td>xx</td>
</tr>
<tr>
<td>Estimated Future Net Revenue at End of Year</td>
<td>xxx</td>
<td>xxx</td>
</tr>
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</table>

## OPTIONAL

Reference: Item 4.2 of Form 51-101F1

### NOTES TO SAMPLE TABLES

1. 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, with no non-conventional oil and gas activities.

2. 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 that this information is optional.


4. The estimates of future net revenue presented in the sample tables do not represent fair market value. (Reference: Section 5.6 of NI 51-101).