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February 19, 2008

VIA E-MAIL: rule-comments@sec.gov

Nancy Morris, Secretary
Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549-1090

Re: File Number S7-29-07

Dear Ms. Morris:

We are pleased to submit this letter in response to a request of the Securities and Exchange Commission (the "Commission") for comments on its Concept Release On Possible Revisions to the Disclosure Requirements Relating to Oil and Gas Reserves (Release Nos. 33-8870; 34-56945; File No. S7-29-07) (the "Concept Release").

We believe the current oil and gas reserves disclosure rules are in need of reform and welcome the Concept Release. The need for reform in this area is based on a number of considerations and factors, which are, in our view, in addition to the technological changes in the oil and gas (and mining) industries. Reform is necessary because the current approach to disclosure regarding reserves:

- does not adopt or incorporate internationally-accepted industry terminology and, accordingly, can be confusing to investors and limit comparability of oil and gas companies;
- denies investors much valuable information concerning oil and gas resources based on the, in our view, erroneous assumption that investors cannot distinguish between varying levels of certainty with respect to underground resources; and
- does not recognize the value and importance of having reserve and resource disclosure reviewed and reported on by qualified and independent experts.

I. Need for international convergence of reserve and resource disclosure

The general approach taken in the current rules and their relative rigidity has resulted in these falling out of step with other jurisdictions and has led to an unfortunate lack of consistency and comparability of disclosure. This has had an unnecessarily adverse impact on the number of companies in the extractive industries undertaking registered offerings in

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the United States. The Commission should join in, and actively promote, international convergence by creating a 'level playing field' with other jurisdictions in this area in order to ensure the broad comparability of reserve and resource disclosure in public company filings.

In particular, we would recommend that the Commission look carefully at the regulatory framework and market experience in Australia, Canada and the United Kingdom, all jurisdictions with sophisticated capital markets and a strong connection with the extractive industries. For example, the Canadian securities administrators undertook an extensive review of reserve and resource disclosure in the mining and oil and gas areas following the Bre-X scandal (see Canadian National Instruments 51-101 and 43-101 enclosed). In the UK, the AIM rules of the London Stock Exchange applicable to oil and gas and mining companies (also enclosed) were substantially revised in early 2006 and should, in our view, be an important reference point for the Commission's review.

Furthermore, we recommend that the Commission should require the use of industry-developed terminology that is internationally accepted and for this reason we support the adoption of the Petroleum Resources Management System ("PRMS"), as published by the Society of Petroleum Engineers ("SPE") in February 2007. The SPE PRMS definitions for Reserves, Contingent Resources and Prospective Resources guidelines are, in our view, highly appropriate for use in the disclosure of oil and gas reserves and resources, regardless of source or extraction method (conventional and unconventional). Going forward, the Commission's rules should allow for the terminology and related definitions to change from time to time as appropriate to take account of technological, market and other developments. As for the UN classification system, in our experience these rules have not yet been fully accepted by private companies operating in the oil and gas sector but, rather, have generally been used by some countries to catalogue their national oil and gas and mineral resources. Nevertheless, the Commission rules should be sufficiently flexible to enable the Commission at some future date to approve the UN system and, possibly, other classification systems for use in Commission disclosure documents.

We believe it is critical that the requirements and terminology for reserve and resource disclosure are subject to detailed regulations to ensure that investors and analysts can readily understand (and compare) the reserve and resource information being disclosed. A principles-based approach alone would not be appropriate in this area.

More disclosure not less

There is inherent uncertainty surrounding underground resources. Market participants, investors and analysts are, in our view, capable of understanding this. In our view, the Commission should permit, and indeed require, the disclosure of oil and gas (and mineral) resources that are not yet capable of being characterized as reserves under the SPE definition system. The current prohibition on the disclosure of resources imposes, in our view, a significant hardship on junior and intermediate exploration companies (and their investors and analysts), which often have significant resources but few, if any, reserves. In our experience, for example, the relevant regulations in Canada and the UK permit (and actually require) the disclosure of oil and gas (and mineral) resources and reserves using the appropriate terminology.

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In our view, the Commission should consider expanding the application of any reformed rules to regulate all types of disclosures (written and oral) by companies operating in the extractive industries. Currently, much of the information which cannot be disclosed in registration statements filed with the Commission is made available through other channels (e.g., in annual reports). This information, which is largely unregulated, can create confusion among investors and often cannot easily be compared as between companies. In this regard, the Commission should consider the Canadian approach to regulation as the applicable rules apply (in varying degrees) to all forms of communication by a public company.

Proved undeveloped reserves

In our view, the current position with regards to the disclosure of proved undeveloped reserves in the Gulf of Mexico versus other deep sea deposits cannot be justified on policy or technical grounds. The current position puts oil and gas companies with offshore deposits in other geographic locations at a distinct competitive disadvantage to their (often U.S.-based) competitors. We would not generally support the imposition of time limits on the commencement of exploitation of undeveloped reserves. The critical consideration is whether such reserves are capable of being economically exploited within the relevant internationally accepted reserves definition.

Economic producibility - Price

With respect to price and other assumptions underlying reserves disclosure, the Commission rules should require companies fully to disclose the assumptions used and these should (in the view of an independent expert) be appropriate under the circumstances. However, it is unrealistic to require reserve reports to be adjusted annually to keep pace with movements in commodity prices. The Commission rules should instead require companies to provide information as to the sensitivity of their reserves to fluctuations in prevailing prices so that investors can consider the impact of current prices (which will often be different from assumed prices) or such investors' own assumptions of future commodity prices.

Current exclusions from proved reserves - Tar sands and oil shales

The position with respect to the disclosure of oil contained in tar sands and oil shales is in urgent need of reform, not because it is now possible to use oil and gas extraction techniques to recover oil from these deposits but rather because information with respect to such resources (regardless of the extraction techniques used) ought to be disclosed to investors in a manner which combines all oil and gas liquids (from every source).

One case in point is the Canadian oil sands projects, where bitumen may be recovered by two different extraction methods. Where these methods are being applied in the same lease, dependant on the burial depth of oil sands, the use of similar classification and disclosure guidance would allow the public to clearly define the total petroleum being commercially developed.

II. Independent reserves assessment

The Commission should carefully consider requiring a company's disclosed reserves and resources to be confirmed or reported on by a technical expert that meets appropriate standards of experience and independence (which standards should be set by the

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Commission). This approach has been adopted in Canada and the UK and is an integral part of the regulatory framework in those jurisdictions. A similar approach is taken in South Africa regarding mineral reserves and resources.

In our respectful opinion, the Commission staff should be less involved in conducting their own detailed review of a company's oil and gas (and mineral) reserves and resources. We do not believe it is practical for the Commission to maintain sufficient levels of internal resources and expertise to assess estimates based upon an extremely wide range of geological, operational, legal and other local and regional factors relevant to deposits increasingly located in remote parts of the world. The onus can and should be placed on registrants to ensure that their reserve and resource estimates are reviewed and reported upon by third party independent experts who have experience that is directly relevant to the deposit in question.

If the Commission accepts our recommendation that reserves and resources should be reviewed and reported upon by qualified experts, then the rules should set out clearly the required tests for independence and qualifications and experience. In this regard, we would urge the Commission to consider the approach adopted by the Canadian securities administrators. In particular, the Commission's rules should accept reports from technical experts with appropriate qualifications from foreign countries that meet certain standards and such rules should be sufficiently flexible to enable the Commission (at some future date) to accept other qualifications (see the Canadian approach to the issue of foreign "qualified persons").

III. Other Comments

We believe the Commission's review of oil and gas reserves disclosure should be expanded as soon as possible to encompass the mineral reserves disclosure rules including Industry Guide 7, where similar issues and concerns arise. In particular, the Commission should consider aligning the minerals and petroleum reserves disclosure guidelines as much as possible. Given the current high levels of global demand for mineral resources and intensive investor focus on this sector, it is vital that the Commission moves rapidly to reform these rules and facilitate capital formation in the mining sector.

In the mining area, we recommend that the Commission consider for use the terminology used in either the JORC, CIM or SAMREC mineral classifications systems (all of which have clear international acceptance).

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We appreciate the opportunity to comment on the Concept Release and would be pleased to discuss any questions the Commission or its staff may have about this letter. Please do not hesitate to contact Glen Ireland or Francis Fitzherbert-Brockholes in our London office at +44 20 7532 1000.

Very truly yours,

A handwritten signature in black ink that reads "White & Case LLP". The signature is written in a cursive, flowing style.

Enclosures: (i) Canadian National Instrument 51-101 Standards of Disclosure for Oil and Gas Activities (NI 51-101); (ii) Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101); and (iii) AIM Market of the London Stock Exchange Guidance for Mining, Oil and Gas Companies.

Chapter 5

Rules and Policies

5.1.1 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 TERMINOLOGY¹

1.1 Definitions² - In this *Instrument*:

- (a) *annual information form* means:
 - (i) 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 subparagraph (i);
- (h) "*effective date*", in respect of information, means the date as at which, or for the period ended on which, the information is provided;
- (i) "*FAS 19*" means United States Financial Accounting Standards Board Statement of Financial Accounting Standards No. 19 "Financial Accounting and Reporting by Oil and Gas Producing Companies", as amended from time to time;
- (j) "*forecast prices and costs*" means future prices and costs that are:
 - (i) generally accepted as being a reasonable outlook of the future;

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

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

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- (ii) if, and only to the extent that, there are fixed or presently determinable future prices or costs to which the *reporting issuer* is legally bound by a contractual or other obligation to supply a physical product, including those for an extension period of a contract that is likely to be extended, those prices or costs rather than the prices and costs referred to in subparagraph (i).
- (k) "*foreign geographic area*" means a geographic area outside North America within one country or including all or portions of a number of countries;
- (l) "*Form 51-101F1*" means Form 51-101F1 *Statement of Reserves Data and Other Oil and Gas Information*;
- (m) "*Form 51-101F2*" means Form 51-101F2 *Report on Reserves Data by Independent Qualified Reserves Evaluator or Auditor*;
- (n) "*Form 51-101F3*" means Form 51-101F3 *Report of Management and Directors on Oil and Gas Disclosure*;
- (o) "*independent*", in respect of the relationship between a *reporting issuer* and a *qualified reserves evaluator or auditor*, has the meaning set out in the *COGE Handbook*;
- (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*"
 - (i) include:
 - (A) the search for *crude oil or natural gas* in their natural states and original locations;
 - (B) the acquisition of property rights or *properties* for the purpose of further exploring for or removing *oil or gas* from *reservoirs* on those *properties*;
 - (C) the construction, drilling and *production* activities necessary to retrieve *oil and gas* from their natural *reservoirs*, and the acquisition, construction, installation and maintenance of *field* gathering and storage systems including lifting the *oil and gas* to the surface and gathering, treating, *field* processing and *field* storage; and
 - (D) the extraction of hydrocarbons from oil sands, shale, coal or other non-conventional sources and activities similar to those referred to in clauses (A), (B) and (C) undertaken with a view to such extraction; but
 - (ii) do not include:
 - (A) transporting, refining or marketing *oil or gas*;
 - (B) activities relating to the extraction of natural resources other than *oil and gas* and their by-products; or
 - (C) the extraction of geothermal steam or of hydrocarbons as a by-product of the extraction of geothermal steam or associated geothermal resources;
- (t) "*preparation date*", in respect of written disclosure, means the most recent date to which information relating to the period ending on the *effective date* was considered in the preparation of the disclosure;
- (u) "*production group*" means one of the following together, in each case, with associated by-products:
 - (i) light and medium *crude oil* (combined);
 - (ii) *heavy oil*;
 - (iii) *associated gas and non-associated gas* (combined); and

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- (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:

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- (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);

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- (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;

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- (ii) the filing, under section 2.1, of the report referred to in item 2 of section 2.1; and
- (iii) the content and filing, under section 2.1, of the report referred to in item 3 of section 2.1.

3.5 Reserves Committee

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

3.6 **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 change³ filed by the *reporting issuer* with the *securities regulatory authority*.

5.3 Reserves and Resources Classification - Disclosure of *reserves* or *resources* shall be consistent with 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.

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

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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*:

Rules and Policies

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

Rules and Policies

- (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 Change⁴ from Information Filed under Part 2

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

PART 7 OTHER INFORMATION

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

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

PART 1 DATE OF STATEMENT

Item 1.1 Relevant Dates

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

INSTRUCTIONS

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

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

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

PART 2 DISCLOSURE OF RESERVES DATA

Item 2.1 Reserves Data (Constant Prices and Costs)

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

Item 2.2 Reserves Data (Forecast Prices and Costs)

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

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- (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:

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- (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

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- (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;

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- (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 revisions in quantity estimates;
 - (x) accretion of discount (10 percent of discounted *future net revenue* at the beginning of the financial year);
 - (xi) net change in income taxes; and
 - (xii) any other significant factors.

INSTRUCTIONS

- (1) *For the purpose of this Part 4, compute the effects of changes in prices and costs before the effects of changes in volumes, so that, in respect of constant prices and costs, volumes are reflected at prices as at the effective date.*

Rules and Policies

- (2) Except in respect of clause 2(b)(xi) of Item 4.2, the information to be provided under this Part is pre-tax information.
- (3) For the purpose of clause 2(b)(xi) of Item 4.2, a "net change in income taxes" includes both income taxes incurred during the period and changes in estimated **future income tax expenses**.

PART 5 ADDITIONAL INFORMATION RELATING TO RESERVES DATA**Item 5.1 Undeveloped Reserves**

1. For *proved undeveloped reserves*:
 - (a) disclose for each *product type* the volumes of *proved undeveloped reserves* that were first attributed in each of the most recent five 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:

Rules and Policies

- (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:

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

INSTRUCTION

Item 6.4 supplements the information disclosed in response to clause 3(b)(v) of Item 2.1 and clause 3(b)(v) of Item 2.2. The response to paragraph (d) of Item 6.4 should enable a reader of this statement and of the reporting issuer's financial statements for the financial year ending on the effective date to understand both the reporting issuer's estimated total abandonment and reclamation costs, and what portions of that total are, and are not, reflected in the disclosed reserves data.

Item 6.5 Tax Horizon

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

Item 6.6 Costs Incurred

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

Item 6.7 Exploration and Development Activities

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

Item 6.8 Production Estimates

1. Disclose, by country, for each *product type*, the volume of *production* estimated for the first year reflected in the estimates of *future net revenue* disclosed under Items 2.1 and 2.2.

Rules and Policies

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.

Rules and Policies

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

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]

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

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

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]];
- (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.

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.

Rules and Policies

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

This Companion Policy sets out the views of the Canadian Securities Administrators (the "CSA") as to the interpretation and application of National Instrument 51-101 *Standards of Disclosure for Oil and Gas Activities* ("NI 51-101") and related forms, and how the *securities regulatory authorities* or *regulators* may exercise their discretion in respect of certain applications for exemption from provisions of NI 51-101¹.

PART 1 APPLICATION AND TERMINOLOGY

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

1.2 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*.

1.3 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.

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

Rules and Policies

The other provisions of *NI 51-101*, including requirements relating to public disclosure generally and to material change² 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.

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

- * 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*.

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)

- 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
- in respect of technical aspects of mine development and operations, National Instrument 43-101 Standards of Disclosure for Mineral Projects and Form 43-101F1 Technical Report.

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 registrants³ 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

NI 51-101) will assist other SEDAR users in finding that information. It is not necessary to make a duplicate filing of the annual information form itself under the SEDAR NI 51-101 oil and gas disclosure category.

- 2.5 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.

- 2.6 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.

- 2.7 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.

- 2.8 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.

- 2.9 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.

Rules and Policies

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, but 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.

Rules and Policies

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

- 5.7 BOEs and McfGEs** - Section 5.14 of *NI 51-101* sets out requirements that apply if a *reporting issuer* chooses to make disclosure using units of equivalency such as *BOEs* or *McfGEs*. The requirements include prescribed methods of calculation and cautionary disclosure as to the possible limitations of those calculations. Section 13 of the *COGE Handbook*, under the heading "Barrels of Oil Equivalent", provides additional guidance.
- 5.8 Finding and Development Costs** - Section 5.15 of *NI 51-101* sets out requirements that apply if a *reporting issuer* chooses to make disclosure of finding and development costs.

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

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

PART 6 MATERIAL CHANGE DISCLOSURE

- 6.1 Changes from Filed Information** - Part 6 of *NI 51-101* requires the inclusion of specified information in disclosure of certain material changes.

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

Part 6 of *NI 51-101* requires that the disclosure of the material change include a discussion of the *reporting issuer's* reasonable expectation of how information that had been filed under Part 2 would differ, had the material change occurred before rather than after the *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 *oil* and *gas* information when the two are read together.

- 6.2 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 *NI 51-101* would require further discussion of *reserves data* estimated using *constant prices and costs* as at the *effective date*.

PART 7 INDEPENDENCE OF PROFESSIONALS

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

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

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

- 7.2 Unacceptable Qualified Reserves Evaluator or Auditor or Valuator** - Sections 2.1 and 3.2 of *NI 51-101* require the involvement, in connection with annual *reserves data* disclosure, of a *qualified reserves evaluator or auditor* who is *independent* (in accordance with the *COGE Handbook*) of the *reporting issuer*. Similarly, section 5.10 of *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 *bbf*) 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 takeover 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:

Location of Reserves (country or foreign geographic area)	Future Net Revenue (before income taxes, 10% discount rate)
xxx	\$ xxx
xxx	xxx
xxx	xxx
	\$ xxx

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.

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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 O15, "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 takeover 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*:

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- (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.

Defined Term	Meaning
1934 Act	The Securities Exchange Act of 1934 of the United States of America, as amended from time to time. [NI 14-101]
Annual information form	Any of the following: <ul style="list-style-type: none">(a) a "current AIF", as defined in NI 44-101;(b) in the case of a <i>reporting issuer</i> 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(c) a document prepared in Form 44-101F1 AIF and filed with the <i>securities regulatory authority</i> in the <i>jurisdiction</i> in accordance with <i>securities legislation</i> of that <i>jurisdiction</i> other than NI 44-101.
	[NI 51-101]

Associated gas	The gas cap overlying a <i>crude oil</i> accumulation in a <i>reservoir</i> . See <i>gas</i> .
Audit	<p>In relation to <i>reserves data</i>, the process whereby an <i>independent qualified reserves auditor</i> carries out procedures designed to allow the <i>independent qualified reserves auditor</i> to provide reasonable assurance, in the form of an opinion that the <i>reporting issuer's reserves data</i> (or specific parts thereof) have, in all material respects, been determined and presented in accordance with the <i>COGE Handbook</i> and are, therefore, free of material misstatement.</p> <p>Because of</p> <ul style="list-style-type: none">(a) the nature of the subject matter (estimates of future results with many uncertainties);(b) the fact that the <i>independent qualified reserves auditor</i> assesses the qualifications and experience of the <i>reporting issuer's</i> staff, assesses the <i>reporting issuer's</i> systems, procedures and controls and relies on the competence of the <i>reporting issuer's</i> staff and the appropriateness of the <i>reporting issuer's</i> systems, procedures and controls; and(c) the fact that tests and samples (involving examination of underlying documentation supporting the determination of the <i>reserves</i> and <i>future net revenue</i>) as opposed to complete <i>evaluations</i>, are involved;(d) the level of assurance is designed to be high, though not absolute. <p>The level of assurance cannot be described with numeric precision. It will usually be less than, but reasonably close to, that of an <i>independent evaluation</i> and considerably higher than that of a <i>review</i>.</p> <p>[<i>COGE Handbook</i>]</p>
Bbl	Barrel.
Bitumen	A highly viscous <i>oil</i> which is too thick to flow in its native state, and which cannot be produced without altering its viscosity. The density of <i>bitumen</i> is generally less than 10 degrees API (as that term is defined by the American Petroleum Institute).
BOEs	Barrels of <i>oil</i> equivalent. [<i>NI 51-101</i> and <i>COGE Handbook</i>]
Canadian GAAP	Generally accepted accounting principles determined with reference to the <i>CICA Handbook</i> . [<i>NI 14-101</i>]
CICA	The Canadian Institute of Chartered Accountants. [<i>NI 51-101</i>]
CICA Accounting Guideline 5	Accounting Guideline AcG-5 "Full cost accounting in the oil and gas industry" included in the <i>CICA Handbook</i> , as amended from time to time. [<i>NI 51-101</i>]
CICA Handbook	The Handbook of the <i>CICA</i> , 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	<p>Prices and costs used in an estimate that are:</p> <ul style="list-style-type: none">(a) the <i>reporting issuer's</i> prices and costs as at the <i>effective date</i> of the estimation, held constant throughout the estimated lives of the <i>properties</i> to which the estimate applies;(b) if, and only to the extent that, there are fixed or presently determinable future prices or costs to which the <i>reporting issuer</i> is legally bound by a contractual or other obligation to supply a physical product, including those for an extension period of a contract that is likely to be extended, those prices or costs rather than the prices and costs referred to in paragraph (a).

Rules and Policies

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*.

Rules and Policies

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*.

[CICA Accounting Guideline 5]

Exploratory well A well that is not a *development well*, a *service well* or a *stratigraphic test well*. [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. [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 OI5, "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".

[FASB Standard paragraph .403]

Rules and Policies

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*.

Rules and Policies

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]

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Natural gas liquids	Those hydrocarbon components that can be recovered from <i>natural gas</i> as liquids including, but not limited to, ethane, propane, butanes, pentanes plus, condensate and small quantities of non-hydrocarbons. [COGE Handbook]
Net	(a) In relation to a <i>reporting issuer's</i> interest in <i>production</i> or <i>reserves</i> , the <i>reporting issuer's</i> working interest (operating or non-operating) share after deduction of royalty obligations, plus the <i>reporting issuer's</i> royalty interests in <i>production</i> or <i>reserves</i> . [COGE Handbook] (b) In relation to a <i>reporting issuer's</i> interest in wells, the number of wells obtained by aggregating the <i>reporting issuer's</i> working interest in each of its <i>gross wells</i> . (c) In relation to a <i>reporting issuer's</i> interest in a <i>property</i> , the total area in which the <i>reporting issuer</i> has an interest multiplied by the working interest owned by the <i>reporting issuer</i> .
NI 14-101	National Instrument 14-101 <i>Definitions</i> .
NI 44-101	National Instrument 44-101 <i>Short Form Prospectus Distributions</i> .
NI 51-101 or the Instrument	National Instrument 51-101 <i>Standards of Disclosure for Oil and Gas Activities</i> .
Non-associated gas	An accumulation of <i>natural gas</i> in a <i>reservoir</i> where there is no <i>crude oil</i> . See <i>gas</i> .
Oil	<i>Crude oil</i> or <i>synthetic oil</i> . [COGE Handbook]
Oil and gas activities	" <i>Oil and gas activities</i> ": (a) include: (i) the search for <i>crude oil</i> or <i>natural gas</i> in their natural states and original locations; (ii) the acquisition of property rights or <i>properties</i> for the purpose of further exploring for or removing <i>oil</i> or <i>gas</i> from <i>reservoirs</i> on those <i>properties</i> ; (iii) the construction, drilling and <i>production</i> activities necessary to recover <i>oil</i> and <i>gas</i> from <i>reservoirs</i> , and the acquisition, construction, installation and maintenance of <i>field</i> gathering and storage systems, including lifting <i>oil</i> and <i>gas</i> to the surface and gathering, treating, <i>field</i> processing and <i>field</i> storage; and (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 <i>oil</i> or <i>gas</i> ; (ii) activities relating to the extraction of natural resources other than <i>oil</i> and <i>gas</i> 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	<i>Production costs</i> .

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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 <i>effective date</i> was considered in the preparation of the disclosure.
Probable reserves	See Part 2 of this Appendix. [COGE Handbook]
Production	<p>Recovering, gathering, treating, <i>field</i> or plant processing (for example, processing <i>gas</i> to extract <i>natural gas liquids</i>) and <i>field</i> storage of <i>oil</i> and <i>gas</i>.</p> <p>The <i>oil production</i> function is usually regarded as terminating at the outlet valve on the lease or <i>field production</i> storage tank. The <i>gas production</i> function is usually regarded as terminating at the plant gate. In some circumstances, it may be more appropriate to regard the <i>production</i> function as terminating at the first point at which <i>oil</i>, <i>gas</i> or their by-products are delivered to a main pipeline, a common carrier, a refinery or a marine terminal.</p>
Production costs (or Operating costs)	<p>Costs incurred to operate and maintain wells and related equipment and facilities, including applicable <i>operating costs</i> of <i>support equipment and facilities</i> and other costs of operating and maintaining those wells and related equipment and facilities.</p> <p>Lifting costs become part of the cost of <i>oil</i> and <i>gas</i> produced.</p> <p>Examples of <i>production costs</i> are:</p> <ul style="list-style-type: none">(a) costs of labour to operate the wells and related equipment and facilities;(b) costs of repairs and maintenance;(c) costs of materials, supplies and fuel consumed, and supplies utilized, in operating the wells and related equipment and facilities;(d) costs of workovers;(e) property taxes and insurance costs applicable to <i>properties</i> and wells and related equipment and facilities; and(f) taxes, other than income and capital taxes.
Production group	<p>One of the following together, in each case, with associated by-products:</p> <ul style="list-style-type: none">(a) light and medium <i>crude oil</i> (combined);(b) <i>heavy oil</i>;(c) <i>associated gas</i> and <i>non-associated gas</i> (combined); and(d) <i>bitumen</i>, <i>synthetic oil</i> or other products from non-conventional <i>oil and gas activities</i>.
Product type	<p>One of the following:</p> <ul style="list-style-type: none">(a) in respect of conventional <i>oil and gas activities</i>:<ul style="list-style-type: none">(i) light and medium <i>crude oil</i> (combined);(ii) <i>heavy oil</i>;(iii) <i>natural gas</i> excluding <i>natural gas liquids</i>; or(iv) <i>natural gas liquids</i>; and(b) in respect of non-conventional <i>oil and gas activities</i>:<ul style="list-style-type: none">(i) <i>synthetic oil</i>;

- (ii) 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

Rules and Policies

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]

Rules and Policies

Reserves data	<p>The following estimates, as at the last day of the <i>reporting issuer's</i> most recent financial year:</p> <ul style="list-style-type: none">(a) <i>proved reserves</i> and related <i>future net revenue</i> estimated:<ul style="list-style-type: none">(i) using <i>constant prices and costs</i> as at the last day of that financial year; and(ii) using <i>forecast prices and costs</i>; and(b) <i>probable reserves</i> and related <i>future net revenue</i> estimated using <i>forecast prices and costs</i>. <p>[NI 51-101]</p>
Reservoir	<p>A porous and permeable underground formation containing a natural accumulation of producible <i>oil</i> or <i>gas</i> that is confined by impermeable rock or water barriers and is individual and separate from other <i>reservoirs</i>. [CICA Accounting Guideline 5]</p>
Resources	<p>Those quantities of <i>oil</i> and <i>gas</i> estimated to exist originally in naturally occurring accumulations.</p> <p><i>Resources</i> are, therefore, those quantities estimated on a particular date to be remaining in known accumulations plus those quantities already produced from known accumulations plus those quantities in accumulations yet to be discovered.</p> <p><i>Resources</i> are divided into:</p> <ul style="list-style-type: none">(a) discovered <i>resources</i>, which are limited to known accumulations; and(b) undiscovered <i>resources</i>. <p>[COGE Handbook]</p>
Review	<p>In relation to the role of a <i>qualified reserves evaluator or auditor</i> in respect of <i>reserves data</i>, steps carried out by the <i>qualified reserves evaluator or auditor</i>, consisting primarily of enquiry, analytical procedures, analysis, review of historical reserves performance and discussion with <i>reserves</i> management staff related to a <i>reporting issuer's reserves data</i>, with the limited objective of assessing whether the <i>reserves data</i> is "plausible" in the sense of appearing to be worthy of belief based on the information obtained by the <i>qualified reserves evaluator or auditor</i> as a result of carrying out such steps. Examination of documentation is not required unless the information does not appear to be plausible.</p> <p>A <i>reserves review</i>, due to the limited nature of the investigation involved, does not provide the level of assurance provided by a <i>reserves audit</i>. Although <i>reserves reviews</i> can be done for specific applications, they are not a substitute for an <i>audit</i>.</p> <p>[COGE Handbook]</p>
SEC	<p>The Securities and Exchange Commission of the United States of America. [NI 14-101]</p>
Securities legislation	<p>The statute (in most cases entitled the "Securities Act") and subordinate legislation (in most cases including regulations or rules) specified, for each <i>jurisdiction</i>, in NI 14-101.</p> <p>References in NI 51-101 to <i>securities legislation</i> are to be read as references to <i>securities legislation</i> in the particular <i>jurisdiction</i>.</p>
Securities regulatory authority	<p>The securities commission or comparable body specified, for each <i>jurisdiction</i>, in NI 14-101.</p> <p>References in NI 51-101 to the <i>securities regulatory authority</i> are to be read as references to the <i>securities regulatory authority</i> in the particular <i>jurisdiction</i>.</p>
SEDAR	<p>The System for Electronic Document Analysis and Retrieval referred to in National Instrument 13-101 <i>System for Electronic Document Analysis and Retrieval (SEDAR)</i>.</p>

Rules and Policies

Senior producing issuer	<p>A reporting issuer that:</p> <ul style="list-style-type: none">(a) demonstrates capability to estimate its reserves and future net revenue in accordance with the <i>COGE Handbook</i> (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	<p>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.</p> <p>[CICA Accounting Guideline 5]</p>
Solution gas	<p>Gas dissolved in crude oil. See gas.</p>
Stratigraphic test well	<p>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.</p> <p>Stratigraphic test wells are classified as</p> <ul style="list-style-type: none">(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	<p>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.</p>
Supporting filing	<p>A document that has been filed by the reporting issuer with a securities regulatory authority. [NI 51-101]</p>
Synthetic oil	<p>A mixture of hydrocarbons derived by upgrading crude bitumen from oil sands or kerogen from oil shales or other substances such as coal.</p> <p>[COGE Handbook]</p>
Undeveloped reserves	<p>See Part 2 of this Appendix. [COGE Handbook]</p>
Unproved property	<p>A property or part of a property to which no reserves have been specifically attributed.</p>
Well abandonment costs	<p>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.</p>

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 conditions¹, 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**.

- (a) **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.
- (b) **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**

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

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

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

 OPTIONAL

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**

RESERVES CATEGORY	REVENUE (M\$)	ROYALTIES (M\$)	OPERATING COSTS (M\$)	DEVELOPMENT COSTS (M\$)	WELL ABANDONMENT COSTS (M\$)	FUTURE NET REVENUE BEFORE INCOME TAXES (M\$)	INCOME TAXES (M\$)	FUTURE NET REVENUE AFTER INCOME TAXES (M\$)
Proved Reserves	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Proved Plus Probable Reserves	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

 OPTIONAL

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**

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

 OPTIONAL

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

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

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

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**

RESERVES CATEGORY	REVENUE (M\$)	ROYALTIES (M\$)	OPERATING COSTS (M\$)	DEVELOPMENT COSTS (M\$)	WELL ABANDONMENT COSTS (M\$)	FUTURE NET REVENUE BEFORE INCOME TAXES (M\$)	INCOME TAXES (M\$)	FUTURE NET REVENUE AFTER INCOME TAXES (M\$)
Proved Reserves	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Proved Plus Probable Reserves	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

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

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

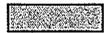
RESERVES CATEGORY	PRODUCTION GROUP	FUTURE NET REVENUE BEFORE INCOME TAXES (discounted at 10%/year) (M\$)
Proved Reserves	Light and Medium Crude Oil (including solution gas and other by-products)	xxx
	Heavy Oil (including solution gas and other by-products)	xxx
	Natural Gas (including by-products but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

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

**SUMMARY OF PRICING ASSUMPTIONS
as of December 31, 2003**

CONSTANT PRICES AND COSTS

Year	OIL ⁽¹⁾				NATURAL GAS ⁽¹⁾ AECO Gas Price (\$Cdn/MMBtu)	NATURAL GAS LIQUIDS FOB Field Gate (\$Cdn/bbl)	EXCHANGE RATE ⁽²⁾ (\$US/\$Cdn)
	WTI Cushing Oklahoma (\$US/bbl)	Edmonton Par Price 40 ^o API (\$Cdn/bbl)	Hardisty Heavy 12 ^o API (\$Cdn/bbl)	Cromer Medium 29.3 ^o API (\$Cdn/bbl)			
Historical (Year End)							
2000	xx	xx	xx	xx	xx	xx	xx
2001	xx	xx	xx	xx	xx	xx	xx
2002	xx	xx	xx	xx	xx	xx	xx
2003 (Year End)	xx	xx	xx	xx	xx	xx	xx

 OPTIONAL

- (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**

Year	OIL ⁽¹⁾				NATURAL GAS ⁽¹⁾ AECO Gas Price (\$Cdn/MMBtu)	NATURAL GAS LIQUIDS FOB Field Gate (\$Cdn/bbl)	INFLATION RATES ⁽²⁾ %/Year	EXCHANGE RATE ⁽³⁾ \$US/\$Cdn
	WTI Cushing Oklahoma \$US/bbl	Edmonton Par Price 40 ^o API \$Cdn/bbl	Hardisty Heavy 12 ^o API \$Cdn/bbl	Cromer Medium 29.3 ^o API \$Cdn/bbl				
Historical ⁽⁴⁾								
2000	xx	xx	xx	xx	xx	xx	xx	xx
2001	xx	xx	xx	xx	xx	xx	xx	xx
2002	xx	xx	xx	xx	xx	xx	xx	xx
2003	xx	xx	xx	xx	xx	xx	xx	xx
Forecast								
2004	xx	xx	xx	xx	xx	xx	xx	xx
2005	xx	xx	xx	xx	xx	xx	xx	xx
2006	xx	xx	xx	xx	xx	xx	xx	xx
2007	xx	xx	xx	xx	xx	xx	xx	xx
2008	xx	xx	xx	xx	xx	xx	xx	xx
Thereafter	xx	xx	xx	xx	xx	xx	xx	xx



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⁾

FACTORS	LIGHT AND MEDIUM OIL			HEAVY OIL			ASSOCIATED AND NON-ASSOCIATED GAS		
	Net Proved (Mbb)	Net Probable (Mbb)	Net Proved Plus Probable (Mbb)	Net Proved (Mbb)	Net Probable (Mbb)	Net Proved Plus Probable (Mbb)	Net Proved (MMcf)	Net Probable (MMcf)	Net Proved Plus Probable (MMcf)
December 31, 2002	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Extensions Improved	xx	xx	xx	xx	xx	xx	xx	xx	xx
Recovery	xx	xx	xx	xx	xx	xx	xx	xx	xx
Technical Revisions	xx	xx	xx	xx	xx	xx	xx	xx	xx
Discoveries	xx	xx	xx	xx	xx	xx	xx	xx	xx
Acquisitions	xx	xx	xx	xx	xx	xx	xx	xx	xx
Dispositions	xx	xx	xx	xx	xx	xx	xx	xx	xx
Economic Factors	xx	xx	xx	xx	xx	xx	xx	xx	xx
Production	xx	xx	xx	xx	xx	xx	xx	xx	xx
December 31, 2003	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

(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

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



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.
3. "M\$" means thousands of dollars.
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*).



5.1.2 National Instrument 43-101 - Standards of Disclosure for Mineral Projects, Form 43-101F1 and Companion Policy 43-101CP

**NATIONAL INSTRUMENT 43-101
STANDARDS OF DISCLOSURE FOR MINERAL PROJECTS**

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Appendix A Recognized Foreign Associations and Designations

**NATIONAL INSTRUMENT 43-101
STANDARDS OF DISCLOSURE FOR MINERAL PROJECTS**

PART 1 DEFINITIONS AND INTERPRETATION

1.1 Definitions - In this Instrument

"adjacent property" means a property

- (a) in which the issuer does not have an interest;
- (b) that has a boundary reasonably proximate to the property being reported on; and
- (c) that has geological characteristics similar to those of the property being reported on;

"data verification" means the process of confirming that data has been generated with proper procedures, has been accurately transcribed from the original source and is suitable to be used;

"development property" means a property that is being prepared for mineral production and for which economic viability has been demonstrated by a feasibility study;

"disclosure" means any oral statement or written disclosure made by or on behalf of an issuer and intended to be, or reasonably likely to be, made available to the public in a jurisdiction of Canada, whether or not filed under securities legislation, but does not include written disclosure that is made available to the public only by reason of having been filed with a government or agency of government pursuant to a requirement of law other than securities legislation;

"early stage exploration property" means a property that has

- (a) no current mineral resources or mineral reserves defined; and
- (b) no drilling or trenching proposed;

in a technical report being filed in a local jurisdiction;

"exploration information" means geological, geophysical, geochemical, sampling, drilling, trenching, analytical testing, assaying, mineralogical, metallurgical and other similar information concerning a particular property that is derived from activities undertaken to locate, investigate, define or delineate a mineral prospect or mineral deposit;

"feasibility study" means a comprehensive study of a mineral deposit in which all geological, engineering, legal, operating, economic, social, environmental and other relevant factors are considered in sufficient detail that it could reasonably serve as the basis for a final decision by a financial institution to finance the development of the deposit for mineral production;

"historical estimate" means an estimate of mineral resources or mineral reserves prepared prior to February 1, 2001;

"IMMM Reporting Code" means the classification system and definitions of mineral resources and mineral reserves approved by The Institution of Materials, Minerals, and Mining in the United Kingdom, as amended;

"JORC Code" means the Australasian Code for Reporting of Mineral Resources and Ore Reserves prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Mineral Council of Australia, as amended;

"mineral project" means any exploration, development or production activity, including a royalty interest or similar interest in these activities, in respect of diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals;

"NI 44-101" means National Instrument 44-101 *Short Form Prospectus Distributions*;

"preliminary assessment" means a study that includes an economic analysis of the potential viability of mineral resources taken at an early stage of the project prior to the completion of a preliminary feasibility study;

"preliminary feasibility study" and "pre-feasibility study" each mean a comprehensive study of the viability of a mineral project that has advanced to a stage where the mining method, in the case of underground mining, or the pit

Rules and Policies

configuration, in the case of an open pit, has been established and an effective method of mineral processing has been determined, and includes a financial analysis based on reasonable assumptions of technical, engineering, legal, operating, economic, social, and environmental factors and the evaluation of other relevant factors which are sufficient for a qualified person, acting reasonably, to determine if all or part of the mineral resource may be classified as a mineral reserve;

"producing issuer" means an issuer with annual audited financial statements that disclose

- (a) gross revenues, derived from mining operations, of at least \$30 million for the issuer's most recently completed financial year; and
- (b) gross revenues, derived from mining operations, of at least \$90 million in the aggregate for the issuer's three most recently completed financial years;

"professional association" means a self-regulatory organization of engineers, geoscientists or both engineers and geoscientists that

- (a) is
 - (i) given authority or recognition by statute in a jurisdiction of Canada, or
 - (ii) a foreign association listed in Appendix A;
- (b) admits individuals on the basis of their academic qualifications and experience;
- (c) requires compliance with the professional standards of competence and ethics established by the organization; and
- (d) has disciplinary powers, including the power to suspend or expel a member;

"qualified person" means an individual who

- (a) is an engineer or geoscientist with at least five years of experience in mineral exploration, mine development or operation or mineral project assessment, or any combination of these;
- (b) has experience relevant to the subject matter of the mineral project and the technical report; and
- (c) is in good standing with a professional association and, in the case of a foreign association listed in Appendix A, has the corresponding designation in Appendix A;

"quantity" means either tonnage or volume, depending on which term is the standard in the mining industry for the type of mineral;

"SAMREC Code" means the South African Code for Reporting of Mineral Resources and Mineral Reserves prepared by the South African Mineral Committee (SAMREC) under the auspices of the South African Institute of Mining and Metallurgy (SAIMM), as amended;

"SEC Industry Guide 7" means the mining industry guide entitled "Description of Property by Issuers Engaged or to be Engaged in Significant Mining Operations" contained in the Securities Act Industry Guides published by the United States Securities and Exchange Commission, as amended;

"technical report" means a report prepared and filed in accordance with this Instrument and Form 43-101F1 Technical Report that does not omit any material scientific and technical information in respect of the subject property as of the date of the filing of the report; and

"written disclosure" includes any writing, picture, map or other printed representation whether produced, stored or disseminated on paper or electronically, including websites.

- 1.2 Mineral Resource** - In this Instrument, the terms "mineral resource", "inferred mineral resource", "indicated mineral resource" and "measured mineral resource" have the meanings ascribed to those terms by the Canadian Institute of Mining, Metallurgy and Petroleum, as the CIM Definition Standards on Mineral Resources and Mineral Reserves adopted by CIM Council, as those definitions may be amended.

Rules and Policies

- 1.3 Mineral Reserve** - In this Instrument, the terms "mineral reserve", "probable mineral reserve" and "proven mineral reserve" have the meanings ascribed to those terms by the Canadian Institute of Mining, Metallurgy and Petroleum, as the CIM Definition Standards on Mineral Resources and Mineral Reserves adopted by CIM Council, as those definitions may be amended.
- 1.4 Independence** - In this Instrument, a qualified person is independent of an issuer if there is no circumstance that could, in the opinion of a reasonable person aware of all relevant facts, interfere with the qualified person's judgment regarding the preparation of the technical report.

PART 2 REQUIREMENTS APPLICABLE TO ALL DISCLOSURE

2.1 Requirements Applicable to All Disclosure - All disclosure of scientific or technical information made by an issuer, including disclosure of a mineral resource or mineral reserve, concerning a mineral project on a property material to the issuer must be based upon information prepared by or under the supervision of a qualified person.

2.2 All Disclosure of Mineral Resources or Mineral Reserves - An issuer must not disclose any information about a mineral resource or mineral reserve unless the disclosure

- (a) uses only the applicable mineral resource and mineral reserve categories set out in sections 1.2 and 1.3;
- (b) reports each category of mineral resources and mineral reserves separately, and states the extent, if any, to which mineral reserves are included in total mineral resources;
- (c) does not add inferred mineral resources to the other categories of mineral resources; and
- (d) states the grade or quality and the quantity for each category of the mineral resources and mineral reserves if the quantity of contained metal or mineral is included in the disclosure.

2.3 Prohibited Disclosure

- (1) An issuer must not make any disclosure of the
 - (a) quantity, grade, or metal or mineral content of a deposit that has not been categorized as an inferred mineral resource, an indicated mineral resource, a measured mineral resource, a probable mineral reserve or a proven mineral reserve; or
 - (b) results of an economic analysis that includes inferred mineral resources.
- (2) Despite paragraph (1)(a), an issuer may disclose in writing the potential quantity and grade, expressed as ranges, of a potential mineral deposit that is to be the target of further exploration if the disclosure
 - (a) includes a statement that the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to define a mineral resource and that it is uncertain if further exploration will result in the target being delineated as a mineral resource; and
 - (b) states the basis on which the disclosed potential quantity and grade has been determined.
- (3) Despite paragraph (1)(b), an issuer may disclose a preliminary assessment that includes inferred mineral resources if
 - (a) the results of the preliminary assessment are a material change or a material fact with respect to the issuer; and
 - (b) the disclosure
 - (i) includes a statement that the preliminary assessment is preliminary in nature, that it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary assessment will be realized; and

- (ii) states the basis for the preliminary assessment and any qualifications and assumptions made by the qualified person.
- (4) An issuer must not use the term preliminary feasibility study, pre-feasibility study or feasibility study when referring to a study unless the study satisfies the criteria set out in the definition of the applicable term in section 1.1.

2.4 Disclosure of Historical Estimates – Despite section 2.2, an issuer may disclose an historical estimate using the historical terminology if the disclosure

- (a) identifies the source and date of the historical estimate;
- (b) comments on the relevance and reliability of the historical estimate;
- (c) states whether the historical estimate uses categories other than the ones set out in sections 1.2 and 1.3 and, if so, includes an explanation of the differences; and
- (d) includes any more recent estimates or data available to the issuer.

PART 3 ADDITIONAL REQUIREMENTS FOR WRITTEN DISCLOSURE

3.1 Written Disclosure to Include Name of Qualified Person - If an issuer discloses in writing scientific or technical information about a mineral project on a property material to the issuer, the issuer must include in the written disclosure

- (a) the name; and
- (b) the relationship to the issuer

of the qualified person who prepared or supervised the preparation of the information that forms the basis for the written disclosure.

3.2 Written Disclosure to Include Data Verification - Subject to section 3.5, if an issuer discloses in writing scientific or technical information about a mineral project on a property material to the issuer, the issuer must include in the written disclosure

- (a) a statement whether a qualified person has verified the data disclosed, including sampling, analytical and test data underlying the information or opinions contained in the written disclosure;
- (b) a description of how the data was verified and any limitations on the verification process; and
- (c) an explanation of any failure to verify the data.

3.3 Requirements Applicable to Written Disclosure of Exploration Information

(1) Except as provided in section 3.5, if an issuer discloses in writing exploration information about a mineral project on a property material to the issuer, the issuer must include in the written disclosure

- (a) the results, or a summary of the material results, of surveys and investigations regarding the property;
- (b) a summary of the interpretation of the exploration information; and
- (c) a description of the quality assurance program and quality control measures applied during the execution of the work being reported on.

(2) Except as provided in section 3.5, if an issuer discloses in writing sample, analytical or test results on a property material to the issuer, the issuer must include in the written disclosure

- (a) a summary description of the geology, mineral occurrences and nature of mineralization found;
- (b) a summary description of rock types, geological controls and dimensions of mineralized zones, and the identification of any significantly higher grade intervals within a lower grade intersection;

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- (c) the location, number, type, nature and spacing or density of the samples collected and the location and dimensions of the area sampled;
- (d) any drilling, sampling, recovery or other factors that could materially affect the accuracy or reliability of the data referred to in this subsection;
- (e) a summary description of the type of analytical or testing procedures utilized, sample size, the name and location of each analytical or testing laboratory used, and any relationship of the laboratory to the issuer; and
- (f) a summary of the relevant analytical values, widths and, to the extent known to the issuer, the true widths of the mineralized zone.

3.4 Requirements Applicable to Written Disclosure of Mineral Resources and Mineral Reserves - If an issuer discloses in writing mineral resources or mineral reserves on a property material to the issuer, the issuer must include in the written disclosure

- (a) the effective date of each estimate of mineral resources and mineral reserves;
- (b) details of quantity and grade or quality of each category of mineral resources and mineral reserves;
- (c) details of the key assumptions, parameters and methods used to estimate the mineral resources and mineral reserves;
- (d) a general discussion of the extent to which the estimate of mineral resources or mineral reserves may be materially affected by any known environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues; and
- (e) a statement that mineral resources that are not mineral reserves do not have demonstrated economic viability, if the results of an economic analysis of mineral resources are included in the disclosure.

3.5 Exception for Written Disclosure Already Filed - Sections 3.2 and 3.3 and paragraphs 3.4 (a), (c) and (d) do not apply if the issuer includes in the written disclosure a reference to the title and date of a previously filed document that complies with those requirements.

PART 4 OBLIGATION TO FILE A TECHNICAL REPORT

4.1 Obligation to File a Technical Report Upon Becoming a Reporting Issuer

- (1) Upon becoming a reporting issuer in a jurisdiction of Canada an issuer must file in that jurisdiction a technical report for a mineral project on each property material to the issuer.
- (2) Subsection (1) does not apply if the issuer is a reporting issuer in a jurisdiction of Canada and subsequently becomes a reporting issuer in another jurisdiction of Canada.

4.2 Obligation to File a Technical Report in Connection with Certain Written Disclosure About Mineral Projects on Material Properties

- (1) An issuer must file a technical report to support scientific or technical information in any of the following documents filed or made available to the public in a jurisdiction of Canada describing a mineral project on a property material to the issuer, or in the case of paragraph (c) below, the resulting issuer:
 - (a) a preliminary prospectus, other than a preliminary short form prospectus filed in accordance with NI 44-101;
 - (b) a preliminary short form prospectus filed in accordance with NI 44-101 that includes material scientific or technical information about a mineral project on a property material to the issuer but not contained in
 - (i) an annual information form, prospectus, or material change report filed before February 1, 2001; or

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- (ii) a previously filed technical report;
 - (c) an information or proxy circular concerning a direct or indirect acquisition of a mineral property where the issuer or resulting issuer issues securities as consideration;
 - (d) an offering memorandum, other than an offering memorandum delivered solely to accredited investors as defined under securities legislation;
 - (e) for a reporting issuer, a rights offering circular;
 - (f) an annual information form that includes material scientific or technical information about a mineral project on a property material to the issuer but not contained in
 - (i) an annual information form, prospectus, or material change report filed before February 1, 2001; or
 - (ii) a previously filed technical report;
 - (g) a valuation required to be prepared and filed under securities legislation;
 - (h) an offering document that complies with and is filed in accordance with the TSX Venture Exchange policy;
 - (i) a take-over bid circular that discloses a preliminary assessment or mineral resources or mineral reserves on a property material to the offeror if securities of the offeror are being offered in exchange on the take-over bid; and
 - (j) a news release or directors' circular that contains
 - (i) first time disclosure of a preliminary assessment or mineral resources or mineral reserves on a property material to the issuer that constitutes a material change in respect of the affairs of the issuer; or
 - (ii) a change in a preliminary assessment or in mineral resources or mineral reserves from the most recently filed technical report that constitutes a material change in respect of the affairs of the issuer.
- (2) Subsection (1) does not apply for disclosure of an historical estimate in a document referred to in paragraph (j) of that subsection if the disclosure
- (a) is in accordance with section 2.4; and
 - (b) includes a statement that
 - (i) a qualified person has not done sufficient work to classify the historical estimate as current mineral resources or mineral reserves;
 - (ii) the issuer is not treating the historical estimate as current mineral resources or mineral reserves as defined in sections 1.2 and 1.3 of this Instrument; and
 - (iii) the historical estimate should not be relied upon.
- (3) If there has been a material change to the information in the technical report filed under paragraph (a) or (b) of subsection (1) before the filing of the final version of a prospectus or short form prospectus, the issuer must file an updated technical report or an addendum to the technical report with the final version of the prospectus or short form prospectus.
- (4) Subject to subsections (5), (6), and (7), the technical report referred to in subsection (1) must be filed not later than the time the document listed in subsection (1) that it supports is filed or made available to the public.
- (5) Despite subsection (4), a technical report about mineral resources or mineral reserves that supports a news release must
- (a) be filed not later than 45 days after the news release; and

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- (b) if there are any material differences in the mineral resources or mineral reserves between the technical report filed and the news release, be accompanied by a news release that reconciles those differences.
- (6) Despite subsection (4), if a property referred to in an annual information form first becomes material to the issuer less than 30 days before the filing deadline for the annual information form, the issuer must file the technical report within 45 days of the date that the property first became material to the issuer.
- (7) Despite subsection (4), a technical report that supports a directors' circular must be filed not less than 3 business days prior to the expiry of the take-over bid.
- (8) Subsection (1) does not apply if
 - (a) the issuer has a technical report filed that supports the scientific or technical information contained in the disclosure and there has been no material change in the scientific and technical information concerning the property since the date of the filing of the technical report; and
 - (b) the issuer files an updated certificate in accordance with subsection 8.1 and consent in accordance with subsection 8.3 of each qualified person who has been responsible for preparing or supervising the preparation of each portion of the technical report.

4.3 Required Form of Technical Report - A technical report that is required to be filed under this Part must be prepared in accordance with Form 43-101F1.

PART 5 AUTHOR OF TECHNICAL REPORT

5.1 Prepared by a Qualified Person - A technical report must be prepared by or under the supervision of one or more qualified persons.

5.2 Execution of Technical Report - A technical report must be dated, signed and, if the qualified person has a seal, sealed by

- (a) each qualified person who is responsible for preparing or supervising the preparation of all or part of the report; or
- (b) a person or company whose principal business is providing engineering or geoscientific services if each qualified person responsible for preparing or supervising the preparation of all or part of the report is an employee, officer or director of that person or company.

5.2 Independent Technical Report

- (1) Subject to subsection (2), a technical report required under any of the following provisions of this Instrument must be prepared by or under the supervision of a qualified person that is, at the date of the technical report, independent of the issuer:
 - (a) section 4.1;
 - (b) paragraphs (a) and (g) of subsection 4.2(1); or
 - (c) paragraphs (b), (c), (d), (e), (f), (h), (i), (j) of subsection 4.2(1) if the document discloses
 - (i) for the first time a preliminary assessment or mineral resources or mineral reserves on a property material to the issuer, or
 - (ii) a 100 percent or greater change, from the most recently filed technical report prepared by a qualified person who is independent of the issuer, in total mineral resources or total mineral reserves on a property material to the issuer.
- (2) A technical report required to be filed by a producing issuer under paragraph (c) of subsection (1) is not required to be prepared by or under the supervision of an independent qualified person.
- (3) A technical report required to be filed by an issuer that is or has contracted to become a joint venture participant, concerning a property which is or will be the subject of the joint venture's activities, is not required

to be prepared by or under the supervision of an independent qualified person if the qualified person preparing or supervising the preparation of the report relies on scientific and technical information prepared by or under the supervision of a qualified person that is an employee or consultant of a producing issuer that is a participant in the joint venture.

PART 6 PREPARATION OF TECHNICAL REPORT

6.1 The Technical Report - A technical report must be prepared on the basis of all available data relevant to the disclosure that it supports.

6.2 Current Personal Inspection

- (1) Subject to subsections (2) and (3), before an issuer files a technical report, the issuer must have at least one qualified person who is responsible for preparing or supervising the preparation of all or part of the technical report complete a current inspection on the property that is the subject of the technical report.
- (2) Subsection (1) does not apply to an issuer provided that
 - (a) the property that is the subject of the technical report is an early stage exploration property;
 - (b) seasonal weather conditions prevent a qualified person from accessing any part of the property or obtaining beneficial information from it; and
 - (c) the issuer discloses in the technical report, and in the disclosure that the technical report supports, that a personal inspection by a qualified person was not conducted, the reasons why, and the intended time frame to complete the personal inspection.
- (3) If an issuer relies on subsection (2), the issuer must
 - (a) as soon as practical, have at least one qualified person who is responsible for preparing or supervising the preparation of all or part of the technical report complete a current inspection on the property that is the subject of the technical report; and
 - (b) promptly file a technical report and the certificates and consents required under Part 8 of this Instrument.

6.3 Maintenance of Records - An issuer must keep for 7 years copies of assay and other analytical certificates, drill logs and other information referenced in the technical report or used as a basis for the technical report.

6.4 Limitation on Disclaimers - An issuer must not file a technical report that contains a disclaimer by any qualified person responsible for preparing or supervising the preparation of the report that

- (a) disclaims responsibility for, or reliance on, that portion of the report the qualified person prepared or supervised the preparation of; or
- (b) limits the use or publication of the report in a manner that interferes with the issuer's obligation to reproduce the report by filing it on SEDAR.

PART 7 USE OF FOREIGN CODE

7.1 Use of Foreign Code - Despite section 2.2, an issuer that

- (a) is incorporated or organized in a foreign jurisdiction; or
- (b) is incorporated or organized under the laws of Canada or a jurisdiction of Canada, for its properties located in a foreign jurisdiction;

may make disclosure and file a technical report that utilizes the mineral resource and mineral reserve categories of the JORC Code, the SEC Industry Guide 7, the IMMM Reporting Code or the SAMREC Code if a reconciliation to the mineral resource and mineral reserve categories set out in sections 1.2 and 1.3 is disclosed in the technical report.

PART 8 CERTIFICATES AND CONSENTS OF QUALIFIED PERSONS FOR TECHNICAL REPORTS

8.1 Certificates of Qualified Persons

- (1) An issuer must, when filing a technical report, file a certificate of each qualified person responsible for preparing or supervising the preparation of each portion of the technical report and the certificate must be dated, signed and, if the signatory has a seal, sealed.
- (2) A certificate under subsection (1) must state
 - (a) the name, address and occupation of the qualified person;
 - (b) the title and date of the technical report to which the certificate applies;
 - (c) the qualified person's qualifications, including a brief summary of relevant experience, the name of all professional associations to which the qualified person belongs, and that the qualified person is a "qualified person" for purposes of this Instrument;
 - (d) the date and duration of the qualified person's most recent personal inspection of each property, if applicable;
 - (e) the item or items of the technical report for which the qualified person is responsible;
 - (f) whether the qualified person is independent of the issuer as described in section 1.4;
 - (g) what prior involvement, if any, the qualified person has had with the property that is the subject of the technical report;
 - (h) that the qualified person has read this Instrument and the technical report has been prepared in compliance with this Instrument; and
 - (i) that, as of the date of the certificate, to the best of the qualified person's knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

8.2 Addressed to Issuer - All technical reports must be addressed to the issuer.

8.3 Consents of Qualified Persons - An issuer must, when filing a technical report, file a statement of each qualified person responsible for preparing or supervising the preparation of each portion of the technical report, addressed to the securities regulatory authority, dated, and signed by the qualified person

- (a) consenting to the public filing of the technical report and to extracts from, or a summary of, the technical report in the written disclosure being filed; and
- (b) confirming that the qualified person has read the written disclosure being filed and that it fairly and accurately represents the information in the technical report that supports the disclosure.

PART 9 EXEMPTIONS

9.1 Authority to Grant Exemptions

- (1) The regulator or the securities regulatory authority may, on application, grant an exemption from this Instrument, in whole or in part, subject to such conditions or restrictions as may be imposed in the exemption in response to an application.
- (2) Despite subsection (1), in Ontario, only the regulator may grant such an exemption.
- (3) Except in Ontario, an exemption referred to in subsection (1) is granted under the statute referred to in Appendix B of National Instrument 14-101 *Definitions* opposite the name of the local jurisdiction.

9.2 Limited Exemption for Royalty Interests or Similar Interests

- (1) Subject to subsection (2), an issuer that has only a royalty interest or similar interest in a mineral project and is required to file a technical report in accordance with section 4.3 is not required to
 - (a) comply with section 6.2; and
 - (b) complete those items under Form 43-101F1 that require data verification, inspection of documents, or personal inspection of the property to complete those items.
- (2) Paragraphs (1)(a) and (b) only apply if the issuer
 - (a) has requested but has not received access to the necessary data from the operating company and is not able to obtain the necessary information from the public domain;
 - (b) under Item 3 of Form 43-101F1, states the issuer has requested but has not received access to the necessary data from the operating company and is not able to obtain the necessary information from the public domain and describes the content referred to under each item of Form 43-101F1 that the issuer did not complete; and
 - (c) includes in all scientific and technical disclosure a statement that the issuer has an exemption from completing certain items under Form 43-101F1 in the technical report required to be filed and includes a reference to the title and date of that technical report.

9.3 Exemption for Certain Types of Filings - This Instrument does not apply if the only reason an issuer files written disclosure of scientific or technical information is to comply with the requirement under securities legislation to file a copy of a record or disclosure material that was filed with a securities commission, exchange or regulatory authority in another jurisdiction.

PART 10 EFFECTIVE DATE

10.1 Effective Date - This Instrument comes into force on December 30, 2005.

APPENDIX A

RECOGNIZED FOREIGN ASSOCIATIONS AND DESIGNATIONS

Foreign Association	DESIGNATION
American Institute of Professional Geologists (AIPG)	Certified Professional Geologist
Any state in the United States of America	Licensed or certified as a professional engineer
Mining and Metallurgical Society of America (MMSA)	Qualified Professional
European Federation of Geologists (EFG)	European Geologist
Australasian Institute of Mining and Metallurgy (AusIMM)	Fellow or member
Institute of Materials, Minerals and Mining (IMMM)	Fellow or professional member
Australian Institute of Geoscientists (AIG)	Fellow or member
South African Institute of Mining and Metallurgy (SAIMM)	Fellow
South African Council for Natural Scientific Professions (SACNASP)	Professional Natural Scientist
Institute of Geologists of Ireland (IGI)	Professional Member
Geological Society of London (GSL)	Chartered Geologist
National Association of State Boards of Geology (ASBOG)	Licensed or certified in: Alabama, Arizona, Arkansas, California, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Kansas, Kentucky, Maine, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, North Carolina, Oregon, Pennsylvania, Puerto Rico, South Carolina, Texas, Utah, Virginia, Washington, Wisconsin or Wyoming

FORM 43-101F1
TECHNICAL REPORT

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**FORM 43-101F1
TECHNICAL REPORT**

INSTRUCTIONS

- (1) *The objective of the technical report is to provide a summary of scientific and technical information concerning mineral exploration, development and production activities on a mineral property that is material to an issuer. This Form sets out specific requirements for the preparation and contents of a technical report.*
- (2) *Terms used in this Form that are defined or interpreted in National Instrument 43-101 Standards of Disclosure for Mineral Projects (the "Instrument") will bear that definition or interpretation. In addition, a general definition instrument has been adopted as National Instrument 14-101 Definitions that contains definitions of certain terms used in more than one national instrument. Readers of this Form should review both these national instruments for defined terms.*
- (3) *The qualified person preparing the technical report must use all of the headings of the items in this Form and may create sub-headings. If unique or infrequently used technical terms are required, clear and concise explanations must be included.*
- (4) *No disclosure need be given in respect of inapplicable items and, unless otherwise required by this Form, negative answers to items may be omitted. Disclosure included under one heading is not required to be repeated under another heading.*
- (5) *The technical report is not required to include the information required in Items 6 through 11 of this Form to the extent that the required information has been previously filed in a technical report for the property being reported on, the previous technical report is referred to in the technical report and there has not been any material change in the information.*
- (6) *The technical report for development properties and production properties may summarize the information required in the items of this Form, except for Item 25, provided that the summary includes the material information necessary to understand the project at its current stage of development or production.*
- (7) *The technical report may only contain disclaimers that are in accordance with section 6.4 of the Instrument and Item 5 of this Form.*

CONTENTS OF THE TECHNICAL REPORT

- Item 1:** **Title Page** - Include a title page setting out the title of the technical report, the general location of the mineral project, the name and professional designation of each qualified person and the effective date of the technical report.
- Item 2:** **Table of Contents** - Provide a table of contents listing the contents of the technical report, including figures and tables.
- Item 3:** **Summary** - Provide a summary that briefly describes the property, its location, ownership, geology and mineralization, the exploration concept, the status of exploration, development and operations and the qualified person's conclusions and recommendations.
- Item 4:** **Introduction** - Include a description of
- (a) who the technical report is prepared for;
 - (b) the purpose for which the technical report was prepared;
 - (c) the sources of information and data contained in the technical report or used in its preparation, with citations if applicable; and
 - (d) the scope of the personal inspection on the property by each qualified person and author or, if applicable, the reason why a personal inspection has not been completed.
- Item 5:** **Reliance on Other Experts** - If a qualified person preparing or supervising the preparation of all or a portion of the technical report is relying on a report, opinion or statement of a legal or other expert, who is not a qualified person, for information concerning legal, environmental, political or other issues and factors relevant to the technical report, the qualified person may include a disclaimer of responsibility in which the qualified person identifies the report, opinion or statement relied upon, the maker of that report, opinion or statement, the extent of reliance and the portions of the technical report to which the disclaimer applies.
- Item 6:** **Property Description and Location** - To the extent applicable, with respect to each property reported on, describe
- (a) the area of the property in hectares or other appropriate units;
 - (b) the location, reported by an easily recognizable geographic and grid location system;
 - (c) the type of mineral tenure (eg. claim, license, lease) and the identifying name or number of each;
 - (d) the nature and extent of the issuer's title to, or interest in, the property including surface rights, the obligations that must be met to retain the property, and the expiration date of claims, licences or other property tenure rights;
 - (e) how the property boundaries were located;
 - (f) the location of all known mineralized zones, mineral resources, mineral reserves and mine workings, existing tailing ponds, waste deposits and important natural features and improvements, relative to the outside property boundaries;
 - (g) to the extent known, the terms of any royalties, back-in rights, payments or other agreements and encumbrances to which the property is subject;
 - (h) to the extent known, all environmental liabilities to which the property is subject; and
 - (i) to the extent known, the permits that must be acquired to conduct the work proposed for the property, and if the permits have been obtained.
- Item 7:** **Accessibility, Climate, Local Resources, Infrastructure and Physiography** - With respect to each property reported on, describe
- (a) topography, elevation and vegetation;

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- (b) the means of access to the property;
- (c) the proximity of the property to a population centre, and the nature of transport;
- (d) to the extent relevant to the mineral project, the climate and the length of the operating season; and
- (e) to the extent relevant to the mineral project, the sufficiency of surface rights for mining operations, the availability and sources of power, water, mining personnel, potential tailings storage areas, potential waste disposal areas, heap leach pad areas and potential processing plant sites.

Item 8: History - To the extent known, with respect to each property reported on, describe

- (a) the prior ownership of the property and ownership changes;
- (b) the type, amount, quantity and general results of exploration and development work undertaken by any previous owners or operators;
- (c) historical mineral resource and mineral reserve estimates in accordance with section 2.4 of the Instrument, including the reliability of the historical estimates and whether the estimates are in accordance with the categories set out in sections 1.2 and 1.3 of the Instrument; and
- (d) any production from the property.

Item 9: Geological Setting - Include a concise description of the regional, local and property geology.

Item 10: Deposit Types - Describe the mineral deposit type(s) being investigated or being explored for and the geological model or concepts being applied in the investigation and on the basis of which the exploration program is planned.

Item 11: Mineralization - Describe the mineralized zones encountered on the property, the surrounding rock types and relevant geological controls, detailing length, width, depth and continuity, together with a description of the type, character and distribution of the mineralization.

Item 12: Exploration - Describe the nature and extent of all relevant exploration work conducted by, or on behalf of, the issuer on each property being reported on, including

- (a) results of surveys and investigations, and the procedures and parameters relating to the surveys and investigations;
- (b) an interpretation of the exploration information; and
- (c) a statement as to whether the surveys and investigations have been carried out by the issuer or by a contractor and, if the latter, identifying the contractor.

INSTRUCTION: *If exploration results from previous operators are included, the qualified person or author must clearly identify the work conducted by, or on behalf of, the issuer.*

Item 13: Drilling - Describe the type and extent of drilling including the procedures followed and a summary and interpretation of all results. The relationship between the sample length and the true thickness of the mineralization must be stated, if known, and if the orientation of the mineralization is unknown, state this.

Item 14: Sampling Method and Approach - Provide

- (a) a brief description of sampling methods and relevant details of location, number, type, nature and spacing or density of samples collected, and the size of the area covered;
- (b) a description of any drilling, sampling or recovery factors that could materially impact the accuracy and reliability of the results;
- (c) a discussion of the sample quality, including whether the samples are representative, and any factors that may have resulted in sample biases;

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- (d) a description of rock types, geological controls, widths of mineralized zones and other parameters used to establish the sampling interval and identification of any significantly higher grade intervals within a lower grade intersection; and
- (e) a summary of relevant samples or sample composites with values and estimated true widths.

Item 15: Sample Preparation, Analyses and Security - Describe sample preparation methods and quality control measures employed before dispatch of samples to an analytical or testing laboratory, the method or process of sample splitting and reduction, and the security measures taken to ensure the validity and integrity of samples taken. Include

- (a) a statement whether any aspect of the sample preparation was conducted by an employee, officer, director or associate of the issuer;
- (b) details regarding sample preparation, assaying and analytical procedures used, the name and location of the analytical or testing laboratories and whether the laboratories are certified by any standards association and the particulars of any certification;
- (c) a summary of the nature and extent of all quality control measures employed and check assay and other check analytical and testing procedures utilized, including the results and corrective actions taken; and
- (d) a statement of the author's opinion on the adequacy of sample preparation, security and analytical procedures.

Item 16: Data Verification - Include

- (a) a discussion of quality control measures and data verification procedures applied;
- (b) a statement as to whether the qualified person has verified the data referred to or relied upon;
- (c) a discussion of the nature of and any limitations on such verification; and
- (d) the reasons for any failure to verify the data.

Item 17: Adjacent Properties - A technical report may include information concerning an adjacent property if

- (a) such information was publicly disclosed by the owner or operator of the adjacent property;
- (b) the source of the information is identified;
- (c) the technical report states that its qualified person has been unable to verify the information and that the information is not necessarily indicative of the mineralization on the property that is the subject of the technical report;
- (d) the technical report clearly distinguishes between mineralization on the adjacent property and mineralization on the property being reported on; and
- (e) if any historical estimates of resources or reserves are included in the technical report, they are disclosed in accordance with section 2.4 of the Instrument.

Item 18: Mineral Processing and Metallurgical Testing - If mineral processing or metallurgical testing analyses have been carried out, include the results of the testing, details of the testing and analytical procedures, and discuss whether the samples are representative.

Item 19: Mineral Resource and Mineral Reserve Estimates - A technical report disclosing mineral resources or mineral reserves must

- (a) use only the applicable mineral resource and mineral reserve categories set out in sections 1.2 and 1.3 of the Instrument;

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- (b) report each category of mineral resources and mineral reserves separately and if both mineral resources and mineral reserves are disclosed, state the extent, if any, to which mineral reserves are included in total mineral resources;
- (c) not add inferred mineral resources to the other categories of mineral resources;
- (d) disclose the name, qualifications and relationship, if any, to the issuer of the qualified person who estimated mineral resources and mineral reserves;
- (e) include appropriate details of quantity and grade or quality for each category of mineral resources and mineral reserves;
- (f) include details of the key assumptions, parameters and methods used to estimate the mineral resources and mineral reserves;
- (g) include a general discussion on the extent to which the estimate of mineral resources and mineral reserves may be materially affected by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant issues;
- (h) identify the extent to which the estimates of mineral resources and mineral reserves may be materially affected by mining, metallurgical, infrastructure and other relevant factors;
- (i) use only indicated mineral resources, measured mineral resources, probable mineral reserves and proven mineral reserves when referring to mineral resources or mineral reserves in an economic analysis that is used in a preliminary feasibility study or a feasibility study of a mineral project;
- (j) if inferred mineral resources are used in an economic analysis, state the required disclosure set out in subsection 2.3(3) of the Instrument;
- (k) when the results of an economic analysis of mineral resources are reported, state "mineral resources that are not mineral reserves do not have demonstrated economic viability";
- (l) state the grade or quality, quantity and category of the mineral resources and mineral reserves if the quantity of contained metal or mineral is reported; and
- (m) when the grade for a polymetallic mineral resource or mineral reserve is reported as metal equivalent, report the individual grade of each metal, and consider and report the recoveries, refinery costs and all other relevant conversion factors in addition to metal prices and the date and sources of such prices.

INSTRUCTION: *A statement of quantity and grade or quality is an estimate and should be rounded to reflect the fact that it is an approximation.*

Item 20: **Other Relevant Data and Information** - Include any additional information or explanation necessary to make the technical report understandable and not misleading.

Item 21: **Interpretation and Conclusions** - Summarize the results and interpretations of all field surveys, analytical and testing data and other relevant information. Discuss the adequacy of data density and the data reliability as well as any areas of uncertainty. A technical report concerning exploration information must include the conclusions of the qualified person. The qualified person must discuss whether the completed project met its original objectives.

Item 22: **Recommendations** - Provide particulars of the recommended work programs and a breakdown of costs for each phase. If successive phases of work are recommended, each phase must culminate in a decision point. The recommendations must not apply to more than two phases of work. The recommendations must state whether advancing to a subsequent phase is contingent on positive results in the previous phase.

Item 23: **References** - Include a detailed list of all references cited in the technical report.

Item 24: **Date and Signature Page** - The technical report must have a signature page at the end, signed in accordance with section 5.2 of the Instrument. The effective date of the technical report and date of signing must be on the signature page.

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Item 25: Additional Requirements for Technical Reports on Development Properties and Production Properties
- Technical reports on development properties and production properties must include

- (a) Mining Operations - information and assumptions concerning the mining method, metallurgical processes and production forecast;
- (b) Recoverability - information concerning all test and operating results relating to the recoverability of the valuable component or commodity and amenability of the mineralization to the proposed processing methods;
- (c) Markets - information concerning the markets for the issuer's production and the nature and material terms of any agency relationships;
- (d) Contracts - a discussion of whether the terms of mining, concentrating, smelting, refining, transportation, handling, sales and hedging and forward sales contracts or arrangements, rates or charges are within industry norms;
- (e) Environmental Considerations - a discussion of bond posting, remediation and reclamation;
- (f) Taxes - a description of the nature and rates of taxes, royalties and other government levies or interests applicable to the mineral project or to production, and to revenues or income from the mineral project;
- (g) Capital and Operating Cost Estimates - capital and operating cost estimates, with the major components being set out in tabular form;
- (h) Economic Analysis - an economic analysis with cash flow forecasts on an annual basis using proven mineral reserves and probable mineral reserves only, and sensitivity analyses with variants in metal prices, grade, capital and operating costs;
- (i) Payback - a discussion of the payback period of capital with imputed or actual interest; and
- (j) Mine Life - a discussion of the expected mine life and exploration potential.

Item 26: Illustrations

- (a) Technical reports must be illustrated by legible maps, plans and sections, which may be located in the appropriate part of the report. All technical reports must be accompanied by a location or index map and more detailed maps showing all important features described in the text. In addition, technical reports must include a compilation map outlining the general geology of the property and areas of historical exploration. The location of all known mineralization, anomalies, deposits, pit limits, plant sites, tailings storage areas, waste disposal areas and all other significant features must be shown relative to property boundaries. If information is used, from other sources, in preparing maps, drawings, or diagrams, disclose the source of the information.
- (b) If adjacent or nearby properties have an important bearing on the potential of the property under consideration, their location and any mineralized structures common to two or more such properties must be shown on the maps.
- (c) If the potential merit of a property is predicated on geophysical or geochemical results, maps showing the results of surveys and their interpretations must be included in the technical report.
- (d) Maps must include a scale in bar form and an arrow indicating north.

INSTRUCTION: *Illustrations should be sufficiently summarized and simplified so that they are not oversized and are suitable for electronic filing.*

**COMPANION POLICY 43-101CP
TO NATIONAL INSTRUMENT 43-101
STANDARDS OF DISCLOSURE FOR MINERAL PROJECTS**

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**COMPANION POLICY 43-101CP
TO NATIONAL INSTRUMENT 43-101
STANDARDS OF DISCLOSURE FOR MINERAL PROJECTS**

This companion policy sets out the views of the Canadian Securities Administrators (the "CSA") as to the manner in which the CSA interprets and applies certain provisions of National Instrument 43-101 and Form 43-101F1 (the "Instrument"), and how the securities regulatory authorities or regulators (the "Securities Regulatory Authorities") may exercise their discretion in respect of certain applications for exemption from provisions of the Instrument.

PART 1 APPLICATION AND TERMINOLOGY

- 1.1 Supplements Other Requirements** – The Instrument supplements other continuous disclosure requirements of securities legislation that apply to reporting issuers in all business sectors.
- 1.2 Evolving Industry Standards and Modifications to the Instrument** - Mining industry practice and professional standards are evolving in Canada and internationally. The Securities Regulatory Authorities will monitor developments in these fields and will solicit and consider recommendations from their staff and external advisers as to whether modifications to the Instrument are appropriate.
- 1.3 Application of the Instrument** - The definition of "disclosure" under the Instrument includes oral and written disclosure. The Instrument establishes standards for disclosure of scientific and technical information regarding mineral projects and requires that the disclosure be based on a technical report or other information prepared by or under the supervision of a qualified person. The Instrument does not apply to disclosure concerning petroleum, natural gas, bituminous sands or shales, groundwater, coal bed methane or other substances that do not fall within the meaning of the term "mineral project" in section 1.1 of the Instrument.
- 1.4 Mineral Resources and Mineral Reserves Definitions** - The Instrument incorporates by reference the definitions and categories of mineral resources and mineral reserves as set out in the Canadian Institute of Mining, Metallurgy and Petroleum (the "CIM") Definition Standards on Mineral Resources and Mineral Reserves (the "CIM Definition Standards") adopted by the CIM Council on November 14, 2004, as amended.
- 1.5 Best Practices Guidelines for Mineral Resources and Mineral Reserves** - A qualified person classifying a mineral deposit as a mineral resource or mineral reserve should follow the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines adopted by CIM on November 23, 2003, as amended. These guidelines are posted on www.cim.org.

A qualified person estimating mineral resources or mineral reserves for coal may follow the guidelines of Paper 88-21 of the Geological Survey of Canada: A Standardized Coal Resource/Reserve Reporting System for Canada, as amended ("Paper 88-21"). However, for all disclosure of mineral resources or mineral reserves for coal, issuers are required by section 2.2 of the Instrument to use the equivalent mineral resource or mineral reserve categories set out in the CIM Definition Standards and not the categories set out in Paper 88-21. The CSA believes it is not reasonable to apply Paper 88-21 to foreign coal properties.

- 1.6 Best Practices Guidelines for Mineral Exploration** - Issuers and qualified persons should follow the Mineral Exploration Best Practices Guidelines adopted by CIM, published in June 2000, as amended.

Disclosure regarding the reporting of diamond exploration sampling results should conform to the CIM Guidelines for Reporting of Diamond Exploration Results adopted by CIM in March 2003, as amended.

These guidelines are posted on www.cim.org.

- 1.7 Preliminary Assessments** - The term "preliminary assessment", commonly referred to as a scoping study, is defined in the Instrument. A preliminary assessment may be based on measured, indicated, or inferred mineral resources, or a combination of any of these. The CSA considers these types of economic analyses to include disclosure of forecast mine production rates that may contain capital costs to develop and sustain the mining operation, operating costs, and projected cash flows. A preliminary assessment must be either in the form of a technical report or be supported by a technical report. In some cases the technical report must be independent.

Although preliminary assessments can provide important information to the market, because of the early stage of the project the information has a high degree of uncertainty. An issuer may mislead investors if it does not disclose this information properly. Under general securities laws, an issuer must disclose a preliminary assessment that is a material change in its affairs. In so doing, an issuer may trigger a technical report under section 4.2(1)(j) of the Instrument. When an issuer discloses the results of a preliminary assessment, section 3.4(e) of the Instrument requires a

cautionary statement. If the preliminary assessment includes inferred mineral resources, an issuer must provide the cautionary statement required by section 2.3(3)(b) of the Instrument. The purpose of these cautionary statements is to alert investors to the limitations of the information. We expect the issuer to include these cautionary statements in the same paragraph as, or immediately following, the disclosure of the preliminary assessment.

- 1.8 Objective Standard of Reasonableness** - Issuers should apply an objective standard of reasonableness in making a determination about the definitions or application of a requirement in the Instrument. Where a determination turns on reasonableness, the test is what a person acting reasonably would conclude. It is not sufficient for an officer of an issuer or a qualified person to determine that he or she personally believes the matter under consideration. The person must form an opinion as to what a reasonable person would believe in the circumstances. Formulating definitions using an objective test strengthens the basis upon which the Securities Regulatory Authority may object to a person's unreasonable application of a definition.
- 1.9 Improper Use of Terms in the French Language** - An issuer that prepares its disclosure using the French language must ensure that it uses the proper terms when referring to a mineral deposit. In the French language, an issuer must not use the words "gisement" and "gîte" interchangeably. The word "gisement" means a mineral deposit that is a continuous, well-defined mass of material containing a sufficient volume of mineralized material that can be or has been mined legally and economically. The word "gîte" means a mineral deposit that is a continuous, defined mass of material containing a volume of mineralized material that has had no demonstration of economic viability. An issuer must use these terms properly so that investors understand whether the deposit has demonstrated economic viability.
- 1.10 Royalty Interests and Other Similar Interests** - The definition of "mineral project" under the Instrument includes a royalty interest or other similar interest. Scientific and technical disclosure regarding all types of royalty interests in a mineral project is subject to NI 43-101. "Royalty interest or other similar interest" includes gross overriding royalty, net smelter return, net profit interest, free carried interest, and a product tonnage royalty.

A company that holds any such interest in a mineral project and has triggered one of the requirements to file a technical report under section 4.2(1) of the Instrument may rely on the limited relief under section 9.2 of the Instrument. Section 9.2 exempts the royalty holder from having to complete a personal inspection of the property and those items under Form 43-101F1 that the royalty holder is unable to complete because it meets the condition specified in section 9.2(2)(a). It must also comply with the disclosure requirements under section 9.2(2)(b) and (c). Generally, the CSA considers a company with a royalty interest or similar interest would meet the condition in section 9.2(2)(a) if the arrangements or agreements between the royalty holder and the operating company limit the royalty holder to auditing the production or financial records, without the ability to participate in decisions to expend funds on the mineral project. If the royalty holder's arrangements or agreements involve the sharing of capital costs or operating losses, the CSA expects the royalty holder will make arrangements to access the necessary data from the operating company.

PART 2 DISCLOSURE

- 2.1 Disclosure is the Responsibility of the Issuer** - Primary responsibility for public disclosure remains with the issuer and its directors and officers. The qualified person is responsible for preparing or supervising the preparation of the technical report and providing scientific and technical advice in accordance with applicable professional standards. The proper use, by or on behalf of the issuer, of the technical report and other scientific and technical information provided by the qualified person is the responsibility of the issuer and its directors and officers. The onus is on the issuer and its directors and officers and, in the case of a document filed with a Securities Regulatory Authority, each signatory to the document, to ensure that disclosure in the document is consistent with the related technical report or advice. Issuers are strongly urged to have the qualified person review disclosure that summarizes or restates the technical report or the technical advice or opinion to ensure that the disclosure is accurate.
- 2.2 Use of Plain Language** - Disclosure made by or on behalf of an issuer regarding mineral projects on properties material to the issuer should be understandable. Issuers should present written disclosure in an easy to read format using clear and unambiguous language. Wherever possible, issuers should present data in table format. The CSA recognizes that the technical report does not lend itself well to plain language and therefore urge issuers to consult the responsible qualified person when restating the data and conclusions from a technical report in plain language in its public disclosure.
- 2.3 Prohibited Disclosure**
- (1) Section 2.3(1) of the Instrument prohibits the disclosure of the quantity, grade, or metal or mineral content of a deposit that has not been categorized as required. It also prohibits the disclosure of the results of an economic analysis, including a preliminary assessment, preliminary feasibility study, and a feasibility study, that includes inferred resources. However, pursuant to section 2.3(2) and (3), respectively, these prohibitions are excepted for quantity and grade of exploration targets expressed as ranges and for preliminary assessments that

include inferred mineral resources if the disclosure is accompanied by the cautionary statements required in those sections. Also, this disclosure must be based on information prepared by or under the supervision of a qualified person. For preliminary assessments, the cautionary statement under section 3.4(e) is also required. We expect the issuer to include these cautionary statements in the same paragraph as, or immediately following, the disclosure permitted by these exceptions.

- (2) An issuer may only rely on the exemption under section 2.3(3) to disclose an economic analysis that includes inferred resources if the project has not reached the preliminary feasibility study stage. If a project is in or has advanced past the preliminary feasibility study stage, the CSA considers that any economic analysis done later anywhere on the project is not a preliminary assessment. The CSA also considers a mine plan on a developed mine to have advanced past the preliminary feasibility study stage.

2.4 Materiality

- (1) Management of the issuer should determine materiality. It should be determined in the context of the issuer's overall business and financial condition taking into account qualitative and quantitative factors, assessed in respect of the issuer as a whole.
- (2) In assessing materiality, issuers should refer to the definition of material fact in securities legislation, which in most jurisdictions means a fact that significantly affects or would reasonably be expected to have a significant effect on the market price or value of the securities of the issuer. In making materiality judgements, issuers should take into account a number of factors that cannot be captured in a simple bright-line standard or test. An issuer must consider the effect on both the market price and value of the issuer's securities in light of the current market activity. An assessment of materiality depends on the context. Information that is immaterial today may be material tomorrow; an item of information that is immaterial alone may be material if it is aggregated with other items.

For example:

- (a) materiality of a property should be assessed in light of the extent of the interest in the property held, or to be acquired, by the issuer. A small interest in a sizeable property may, in the circumstances, not be material to the issuer;
- (b) in assessing whether interests represented by multiple claims or other documents of title constitute a single property for the purpose of the Instrument, issuers should consider that several non-material properties in a contiguous cluster may, when taken as a whole, be a property material to the issuer; and
- (c) when disclosing results of a drilling program the results from a single hole may not be material in itself. However, the results of several holes, in aggregate, could be material to the issuer.

2.5 Material Information not yet Confirmed by a Qualified Person - Issuers are reminded that they have an obligation under securities legislation to disclose material facts and to make timely disclosure of material changes. The CSA recognizes that there may be circumstances in which the issuer expects that certain information concerning a mineral project may be material notwithstanding the fact that a qualified person has not prepared or supervised the preparation of the information. In this situation the CSA suggests that issuers file a confidential material change report concerning this information while a qualified person reviews the information. Once a qualified person has confirmed the information, the issuer should issue a news release and the basis of confidentiality will end. Issuers are also reminded that during the period of confidentiality, prohibitions against tipping and trading by persons in a special relationship to the issuer apply until the information is disclosed to the public. Issuers should also refer to National Policy 51-201 Disclosure Standards for further guidance about materiality and timely disclosure obligations.

2.6 Exception for Disclosure Previously Filed - Section 3.5 of the Instrument provides that the disclosure requirements of sections 3.2, 3.3, and 3.4 (a), (c), and (d) of the Instrument may be satisfied by referring to a previously filed document that includes the required disclosure. Issuers relying on this exception are reminded that all disclosure should provide sufficient information to permit market participants to make informed investment decisions and should not present or omit information in a manner that is misleading.

2.7 Meaning of Technical Report - A report may constitute a technical report, even if prepared considerably before the date the technical report is required to be filed, provided the information in the technical report remains accurate and there has been no material change in the scientific and technical information prior to the required filing date. A change to mineral resources or mineral reserves due to mining depletion from a producing property generally will not be

considered to be a material change to the property as it should be reasonably predictable based on a company's continuous disclosure record.

- 2.8 Exception from Requirement to File Technical Report if Information Previously Filed in a Technical Report -** The Instrument contains relief under section 4.2(1)(b), (f), and (8) from the technical report filing requirement in certain instances. If an issuer has disclosed scientific and technical information on a mineral property in any of the documents enumerated under section 4.2(1) of the Instrument, the issuer will not be required to prepare and file a technical report with that disclosure unless the disclosure contains new, material scientific and technical information about that mineral property not supported by a previously filed technical report. In order to rely on the exception to the requirement to re-file a previously filed technical report under section 4.2(8) of the Instrument, the issuer must file updated qualified persons' certificates and consents required under Part 8 of the Instrument with that disclosure.

For a preliminary short form prospectus and an annual information form, the issuer will not be required to file a technical report with the disclosure unless the disclosure contains new, material scientific and technical information about that mineral property not contained in an annual information form, prospectus, or material change report filed before February 1, 2001.

2.9 Use of Historical Estimates

- (1) An issuer can disclose an estimate of resources or reserves made before February 1, 2001 using the historical terminology of the estimate provided the issuer complies with the conditions set out in section 2.4 of the Instrument. An issuer will trigger the filing of a technical report if it makes disclosure of the historical estimate as if it is a current estimate.
- (2) Under section 2.4(a), we expect disclosure of historical estimates from third party reports, including government databases, to identify the original source and date of the estimates.
- (3) Under section 2.4(b), when commenting on relevance and reliability, we expect an issuer to discuss the key assumptions and parameters that were used for the historical estimate. An issuer should consider whether the estimates are suitable for public disclosure.
- (4) The announcement of an acquisition of a mineral project that includes the disclosure of an historical estimate will not trigger the requirement to file a technical report under section 4.2(1)(j) of the Instrument if the issuer makes the cautionary statements required under section 4.2(2)(b)(i) to (iii). We expect the issuer to include the cautionary statements required under this section in the same paragraph as, or immediately following, the disclosure of the historical estimate.
- (5) The CSA will conclude the issuer is treating the historical estimate as a current resource or reserve in its disclosure when, for example, it states it will be adding on or building on that resource or reserve base, includes them in an economic analysis, or adds them to current resource or reserve estimates. In that case, the issuer will have triggered the requirement to file a technical report within the 45-day period set out under section 4.2(5) of the Instrument if:
 - (a) the property, or interest in the property, is material to the issuer, and
 - (b) the acquisition of the resources or reserves is a material change in the affairs of the issuer.
- (6) If the issuer has not signed a formal agreement at the time of the disclosure, but is conducting its day to day operations in reliance on the terms of a letter of intent or memorandum of understanding, then the 45-day period will begin to run from the time the issuer first discloses the historical estimate as a current resource or reserve.
- (7) If the agreement is subject to conditions such as the approval of a third party or the completion of a due diligence review, the technical report is still required to be filed within 45 days after the issuer discloses the historical estimate as a current resource or reserve. However, the issuer may apply for relief to extend the 45-day period. Whether or not the securities regulators will grant such relief will depend on the circumstances.

- 2.10 Use of Other Foreign Codes -** Issuers are prohibited from disclosing mineral resources or mineral reserves using foreign codes other than those permitted under Part 7 of the Instrument. If an issuer wishes to announce an acquisition or proposed acquisition of a property that contains estimates of quantity and grade that are not historical and are not in accordance with the CIM Definition Standards or the alternative codes under Part 7, the issuer may apply for an exemption under section 9.1 of the Instrument.

Issuers are reminded that they have an obligation under securities legislation to disclose material facts and to make timely disclosure of material changes. Therefore, the issuer should arrange its affairs in advance to comply with those requirements and the requirements in the Instrument if it is considering the acquisition of a foreign property and wishes to disclose estimates using foreign codes not permitted under the Instrument. Issuers that have difficulty doing this should consider filing a confidential material change report and maintain a period of confidentiality until they obtain an exemption or convert the estimates and disclose them in accordance with the Instrument. Issuers should also refer to section 2.5 of this Companion Policy for further guidance about timely disclosure obligations.

Issuers may also consider disclosing the quantity and grade of mineralization as an exploration target as provided under section 2.3(2) of the Instrument.

PART 3 AUTHOR OF THE TECHNICAL REPORT

- 3.1 Selection of Qualified Person** - It is the responsibility of the issuer and its directors and officers to retain a qualified person who meets the criteria listed under the definition in the Instrument of qualified person, including having the relevant experience and competence for the subject matter of the technical report.
- 3.2 Assistance of non-Qualified Persons** - A person who is not a qualified person may work on a project. If a qualified person relies on the work of a person who is not a qualified person to prepare a technical report or to provide information or advice to the issuer, the qualified person must take responsibility for that work, information or advice and must take whatever steps are appropriate, in his or her professional judgement, to ensure that the work, information or advice that he or she relies upon is sound.
- 3.3 More than One Qualified Person** - Section 5.1 of the Instrument provides that a technical report must be prepared by or under the supervision of one or more qualified persons. Several qualified persons may author different portions of the report. In that case, each of them must provide a certificate and consent required under Part 8 of the Instrument.

When one or more qualified persons prepare a technical report that includes a mineral resource or mineral reserve estimate prepared by another qualified person for a previously filed technical report, one of the qualified persons preparing the new technical report must take responsibility for those estimates. In doing this, that qualified person should make whatever investigations are necessary to reasonably rely on that information.

3.4 Exemption from Qualified Person Requirement

- (1) The CSA recognizes that certain individuals who currently provide technical expertise to issuers will not be considered qualified persons for purposes of the Instrument. An issuer may apply under section 9.1 of the Instrument for an exemption from the requirement for involvement of a qualified person and the acceptance of another person. The application should demonstrate the person's experience, competence and qualification to prepare the technical report or other information in support of the disclosure despite the fact that he or she does not meet the requirements set out in the definition in the Instrument of qualified person.
- (2) Requests for exemption from the requirement that the qualified person belong to a professional association will rarely be granted. Where an issuer wishes to retain a person who is well qualified and who does not belong to a professional association because no association exists in his or her jurisdiction or because it is not a requirement for members of his or her profession to be registered in the jurisdiction, Securities Regulatory Authorities will consider granting an exemption. However, if there is any other qualified person available to the issuer who has been or can get to the site and is able to co-author the report, then an exemption will not likely be granted.

3.5 Independence of Qualified Person

- (1) Section 1.4 of the Instrument provides the test an issuer and a qualified person should apply to determine whether a qualified person is independent of the issuer. When an independent qualified person is required, an issuer must always apply the test in section 1.4 of the Instrument to confirm that the requirement is met.

Applying this test, the following are examples of when the CSA would consider that a qualified person is not independent. These examples are not a complete list of non-independence situations.

We consider a qualified person is not independent when the qualified person:

- (a) is an employee, insider, or director of the issuer,
- (b) is an employee, insider, or director of a related party of the issuer,

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- (c) is a partner of any person or company in paragraph (a) or (b),
- (d) holds or expects to hold securities, either directly or indirectly, of the issuer or a related party of the issuer,
- (e) holds or expects to hold securities, either directly or indirectly, in another issuer that has a direct or indirect interest in the property that is the subject of the technical report or an adjacent property,
- (f) has or expects to have, directly or indirectly, an ownership, royalty, or other interest in the property that is the subject of the technical report or an adjacent property, or
- (g) has received the majority of their income, either directly or indirectly, in the three years preceding the date of the technical report from the issuer or a related party of the issuer.

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

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

If the issuer applies for relief, the Securities Regulatory Authorities may consider granting an exemption under section 9.1 of the Instrument if the issuer demonstrates why the involvement of an independent qualified person is not necessary in a particular circumstance.

- (2) There may be circumstances in which the Securities Regulatory Authorities question the objectivity of the author of the technical report. In order to ensure the requirement for independence of the qualified person has been preserved, the issuer may be asked to provide further information, additional disclosure or the opinion of another qualified person to address concerns about possible bias or partiality on the part of the author of the technical report.

PART 4 PREPARATION OF TECHNICAL REPORT

- 4.1 Addendums not Permitted** - Anytime an issuer is required to file a technical report, that report must be complete and current. If an issuer has a technical report previously filed, and is required to file another technical report because it triggered one of the circumstances listed under Part 4 of the Instrument, the issuer must update the outdated sections of the previously filed report and file a new, complete, current technical report if the contents of the previously filed technical report are no longer current. It is not sufficient for the issuer to only file the updated portions of the technical report. If an issuer gets a new qualified person to update a previously filed technical report prepared by a different qualified person, we expect the new qualified person to take responsibility for the whole technical report and certify that in his or her certificate required under section 8.1 of the Instrument.

The only exception to the requirement to file a complete technical report is under section 4.2(3) of the Instrument. An issuer may file an addendum if it is for a technical report that originally was filed with a preliminary short form prospectus or preliminary long form prospectus and there is a material change in the information before the issuance of the final receipt. In this case, the addendum must be attached to and filed with the previously filed technical report. The technical report and addendum must also have an updated certificate and consent of the qualified person filed with it.

- 4.2 Filing on SEDAR** - If an issuer is required under National Instrument 13-101 *System for Electronic Document Analysis and Retrieval* (SEDAR) to be an electronic filer, then all technical reports must be prepared so that the issuer can file them on SEDAR. Issuers are reminded that figures required in the technical report must be included in the technical report filed on SEDAR and therefore should be prepared in electronic format.

The qualified person must date, sign and, if the qualified person has a seal, seal the technical report, certificate and consent. If a person's name appears in an electronic document with (signed by) and (sealed) next to the person's name or there is a similar indication in the document, the Securities Regulatory Authorities will consider that the document has been signed and sealed by that person. Although not required, maps and drawings may be signed and sealed in the same manner.

- 4.3 Technical Documents Filed with Other Securities Regulatory Authorities or Exchanges** - Securities Regulatory Authorities in most CSA jurisdictions require an issuer to file, if not already filed with it, any record or disclosure material that the issuer files with another securities regulatory authority, agency, or body, or exchange, wherever situate. If an

issuer must complete such filing, and the record or disclosure material is not a technical report required by the Instrument, then the exemption provided under section 9.3 of the Instrument permits an issuer to do this without breaching the Instrument. The filing should be made by the issuer on SEDAR under the "Other" category.

PART 5 USE OF INFORMATION

5.1 Use of Information in Technical Reports - The Instrument requires that technical reports be prepared and filed in local jurisdictions to support certain disclosure of mineral exploration, development and production activities and results in order to permit the public and analysts to have access to information that will assist them in making investment decisions and recommendations. Persons and companies, including registrants, who wish to make use of information concerning mineral exploration, development and production activities and results, including mineral resource and mineral reserve estimates, are encouraged to review the technical reports that will be on the public file for the issuer. If they are summarizing or referring to this information they are strongly encouraged to use the applicable mineral resource and mineral reserve categories and terminology found in the technical report.

5.2 Disclaimers in Technical Reports - Section 6.4 of the Instrument prohibits certain disclaimers in technical reports. The types of disclaimers prohibited by section 6.4 of the Instrument include blanket disclaimers that purport to disclaim responsibility for, or reliance on, that portion of the report that the qualified person prepared. Disclaimers are also prohibited when they create limitations on the use or publication of the report that would interfere with an issuer's obligation to reproduce the report by filing it on SEDAR.

The CSA considers blanket disclaimers potentially misleading. In certain circumstances, securities legislation provides investors with a statutory right of action against a qualified person for a misrepresentation in disclosure that is based upon the qualified person's technical report. That right of action exists despite any disclaimer to the contrary that appears in the technical report.

The Securities Regulatory Authorities will expect the issuer to have its qualified person remove any blanket disclaimers in a technical report that the issuer uses to support its public offering document.

Item 5 of the Form permits a qualified person to insert a disclaimer of responsibility if he or she relied on other experts who are not qualified persons for legal, environmental, political, or other issues relevant to the technical report that are not within the qualified person's area of expertise.

PART 6 PERSONAL INSPECTION

6.1 Meaning of Current Personal Inspection - The current personal inspection referred to in section 6.2(1) of the Instrument is the most recent personal inspection of the property, provided that there has been no material change to the scientific and technical information about the property since that personal inspection. A personal inspection may constitute a current personal inspection even if the qualified person conducted the personal inspection considerably before the filing date of the technical report, if there has been no material change in the scientific and technical information about the property at the filing date.

6.2 Personal Inspection - The CSA considers current personal inspection particularly important because it enables the qualified person to become familiar with conditions on the property, to observe the geology and mineralization, to verify the work done and, on that basis, to design or review and recommend to the issuer an appropriate exploration or development program. A personal inspection is required even for properties with poor exposure. In such cases, it may be relevant for a qualified person to observe the depth and type of the overburden and cultural effects that could interfere with the results of the geophysics. It is the responsibility of the issuer to arrange its affairs so that a current personal inspection can be carried out by a qualified person. A qualified person, or where required an independent qualified person, must visit the site and cannot delegate the personal inspection requirement.

6.3 Delay of Personal Inspection Requirement - Section 6.2(2) of the Instrument permits an issuer to delay conducting a personal inspection in very limited circumstances. An issuer does not need to apply for this relief. The exemption applies automatically only where the issuer's mineral project is located on an early stage exploration property, as defined in the Instrument, provided the issuer complies with all conditions listed in section 6.2(2) of the Instrument. The exemption recognizes that there may be situations where an issuer is unable to access an early stage exploration property or obtain beneficial information on it because seasonal weather conditions prevent it from doing so by the time the issuer is required to file a technical report. Examples of such situations would include an early stage exploration property that is inaccessible because of seasonal flooding or it is completely covered in snow for an extended period of time.

Other than circumstances permitted by the exemption under section 6.2(2) of the Instrument, there may be circumstances in which it is not possible for a qualified person to inspect the property. In such instances the qualified

person or the issuer should apply in writing to the Securities Regulatory Authorities for relief, stating the reasons why a personal inspection is considered impossible. It would likely be a condition of any such relief that the technical report state that no inspection was carried out by a qualified person and the reasons why it was not done.

- 6.4 More than One Qualified Person** - Section 6.2(1) of the Instrument requires at least one qualified person who is responsible for preparing or supervising the preparation of the technical report to inspect the property. This is a minimum standard for personal inspection. There may be cases in advanced mineral projects where the issuer should have personal inspections of the property conducted by more than one qualified person, taking into account the work being carried out on the property and the technical report being prepared by the qualified person or persons.

For example, for an advanced stage property with mineral resource and mineral reserve estimates, if several qualified persons prepare a different portion of the technical report because of their particular expertise in geology or mining engineering, then the Securities Regulatory Authorities expect that expertise makes each of them responsible for the preparation of the technical report and each of them relevant for a proper personal inspection of the property.

PART 7 REGULATORY REVIEW

7.1 Review

- (1) Disclosure and technical reports filed under the Instrument may be subject to review by Securities Regulatory Authorities.
- (2) If an issuer that is required to file a technical report under the Instrument files a technical report that does not meet the requirements of the Instrument, the issuer may be in breach of securities legislation. The issuer may be required to issue or file corrected disclosure, file a revised technical report or file revised consents, and may be subject to other sanctions.



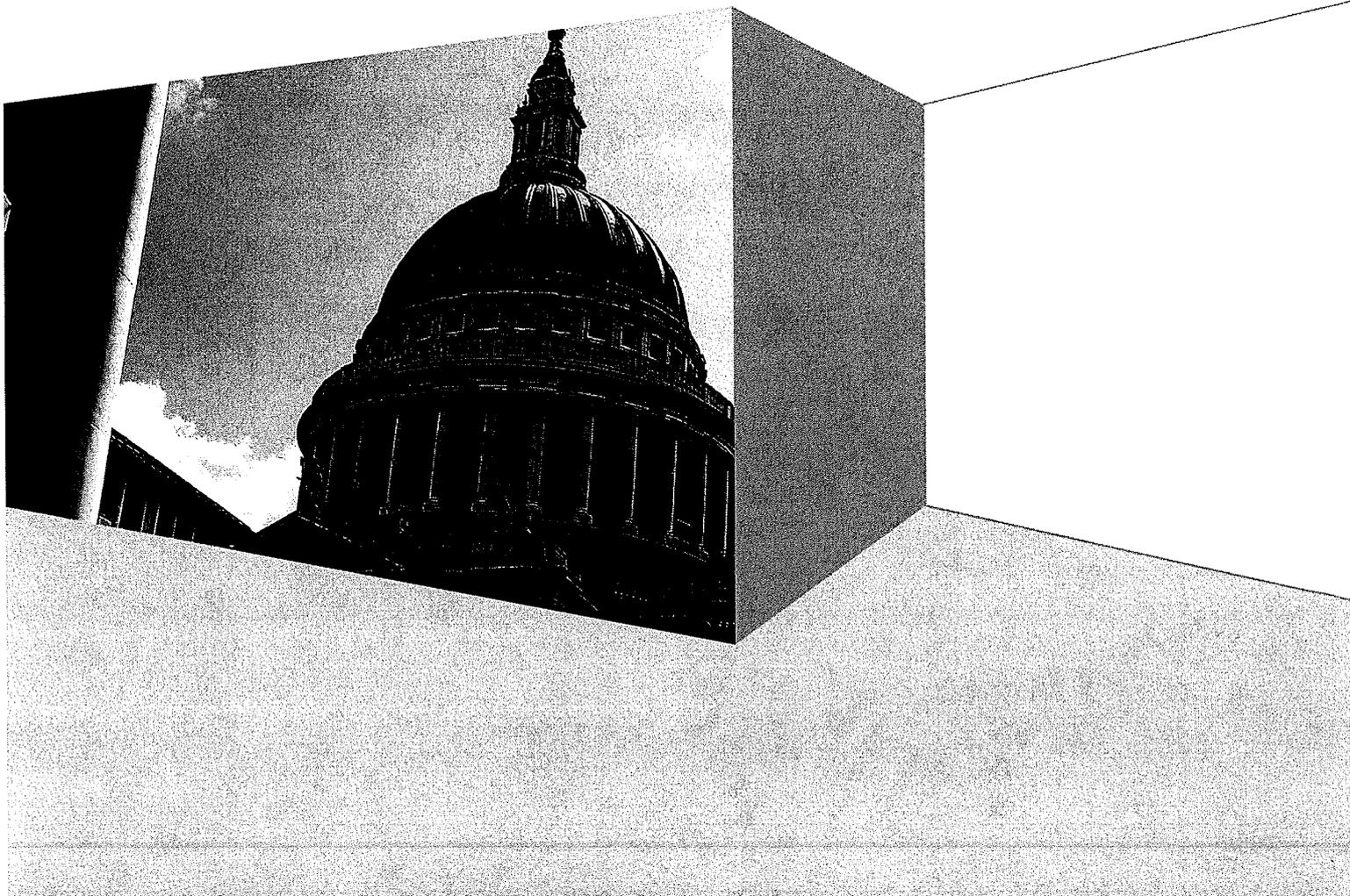


London
STOCK EXCHANGE

GUIDANCE NOTE FOR MINING, OIL AND GAS COMPANIES

MARCH 2006

AJM



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Introduction

This **Guidance** sets out specific guidelines relating to **resource companies**. This **Guidance** is effective immediately and sets out the minimum expectations of the **Exchange** in relation to companies in such sectors.

AIM companies and **nominated advisers** should note that when interpreting the **AIM Rules** (including the requirement for a **nominated adviser** to act with due skill and care pursuant to **AIM Rule 39** and compliance by an **AIM company** with **AIM Rules 10, 11** and **31** and compliance with the provisions of paragraph 2(k) of Schedule 2 of the **AIM Rules**) the **Exchange** would expect this **Guidance** to be followed where applicable.

For the avoidance of doubt where an **applicant** is issuing a **Prospectus**, if this **Guidance** conflicts with the **Prospectus Rules**, the **Prospectus Rules** take precedence.

If a **nominated adviser** believes that provisions set out in this **Guidance** are not applicable or appropriate to a particular **AIM company** e.g. if the requirements of the **AIM company's** home exchange conflict with this **Guidance**, they should contact the AIM regulation team: aimregulation@londonstockexchange.com

Terms used in this **Guidance** shall have the meanings set out in the **AIM Rules** and at the end of this note.

Companies to which this Guidance applies

This **Guidance** applies to **resource companies**, such as exploration, development and production companies but it does not apply to companies which purely invest in or provide consultancy, advice or other such services to **resource companies**.

Part One

Admission to AIM

Competent Person's Report (CPR)

Inclusion of a CPR

A **CPR** should be prepared on all material **assets** and **liabilities** of the **applicant** and reproduced, in full and without adjustment, in the **admission document**.

Where a **CPR** has been prepared on the **assets** and **liabilities** of the **applicant** within 12 months of the current **CPR**, an explanation as to why this was not used and its conclusions should be included in the **admission document**.

Competent Person (CP)

The **Exchange** considers that, as a minimum, the **CP** should:

- be professionally qualified and a member in good standing of an appropriate recognised **professional association**;
- have at least five years *relevant* experience in the estimation, assessment and evaluation of the type of mineral or fluid deposit under consideration;
- be independent of the **applicant**, its **directors**, senior management and advisers;
- not be remunerated by way of a fee that is linked to the **admission** or value of the **applicant**; and
- not be a sole practitioner.

It is the **nominated adviser's** responsibility to ensure that the **CP** producing the **CPR** has the relevant and appropriate qualifications, experience and technical knowledge to professionally and independently appraise the **assets** and **liabilities** being reported upon and that the work performed by the **CP** will be subject to an internal review.

Scope of CPR

It is the **nominated adviser's** responsibility to ensure that the scope of the **CPR** is appropriate, given the **applicant's assets** and **liabilities**.

In addition, the **Exchange** considers that, as a minimum, the **CPR** should be prepared no more than 6 months prior to the date of the **admission document**, be addressed to the **applicant** and the **nominated adviser** and should:

- include a summary table of assets set out in **Appendix 1**;
- include the disclosures set out in **Appendix 2**;
- include the relevant tables set out in **Appendix 3**;
- set out what **Standard** has been used in preparing the **CPR**;
- include an up to date no material change statement; and
- report on any existing **reserves** and **resources** statements, stating clearly what work was undertaken or include a derivation of any **reserve** or **resource** estimates.

Admission document disclosure

Appropriate summarisation

The 'front end' of the **admission document** (usually the section entitled 'Key Information' and/or 'Part I'), must provide a balanced view of all of the information contained within the rest of the **admission document** so as to not be misleading, e.g. due to the omission of information that is otherwise included in other sections of the **admission document**.

Extraction of information

Where information contained elsewhere in the **admission document** is extracted from the **CPR** it should be extracted directly and presented in a manner which is not misleading and provides a balanced view of the **CPR**. The location of such information in the **CPR** should also be set out next to such extraction. Where information is extracted from a third party source, a reference or attribution to such source should be set out next to such extraction.

Review by Competent Person

The **CP** should review the information contained elsewhere in the **admission document** which relates to information contained in the **CPR** and confirm in writing to the **applicant** and **nominated adviser** that the information presented is accurate, balanced and complete and not inconsistent with the **CPR**.

Material assets of the applicant

Material contracts

In relation to **resource companies**, the meaning of material contracts in paragraph 22 of **Annex I** (of the **Prospectus Rules**) should be deemed to include all material subsisting agreements which are included within, or which relate to, the **assets** and **liabilities** of the **applicant** (notwithstanding whether such agreements are (i) within the ordinary course or (ii) were entered into outside of the two years immediately preceding the publication of the **admission document**) and a summary of these agreements should be included in the **admission document**.

Due diligence

The **Exchange** expects that the **nominated adviser** will conduct full due diligence on the **applicant** and its **assets** prior to **admission** and where an **applicant's assets** exist outside of the United Kingdom, as well as performing usual due diligence, a formal opinion letter should be obtained from an appropriate legal adviser authorised to practice in the jurisdiction in which the **assets** are located and in the law under which they are governed. Such opinion should deal with matters including (i) issues of jurisdiction such as the proper incorporation and good standing of any incorporated subsidiary or interest and (ii) the title to or validity and enforceability of any **assets** (including for the avoidance of doubt licences and agreements), as is appropriate to the **applicant**.

The **Exchange** would usually expect that details of the adviser providing such opinion should be included in the advisers section of the **admission document**.

Site visit

The **Exchange** would generally expect that the **nominated adviser** should, as far as it is practical to do so, undertake a site visit and physical inspection of the **applicant's physical assets**, as part of its overall assessment of the suitability of the **applicant for admission**.

Where inspection of material mineral or petroleum assets or tenements are likely to reveal information or data that is material to a **CPR**, the **CP** should, at their discretion and as far as it is practical to do so, inspect the site.

Payments

The **admission document** should disclose any payments aggregating over £10,000 made to any government or regulatory authority or similar body made by the **applicant** or on behalf of it, with regard to the acquisition of, or maintenance of, its **assets**.

Risk factors

Risk factors should address both the specific and general risk factors affecting the **applicant**. Risk factors that are specific to the **applicant** should be set out ahead of any general risks applicable to the **applicant** or **resource companies** within the risk factors section of the **admission document**.

Lock-ins for new businesses

Exploration and development companies who have not been independent and earning revenue for at least two years will need to ensure that all **related parties** and **applicable employees** comply with the lock-in requirements of **AIM Rule 7**.

Part Two

Ongoing obligations

Notifications

Use of a Standard

An **AIM company** should state in each **resource update** the **Standard** they have used in reporting such information.

Where it is not possible to ensure a **Standard** has been adhered to because the **AIM company** is under an obligation under **AIM Rule 11** to issue a **notification without delay** it must make sure that any estimate as to its **reserves** and/or **resources** that are **notified** are accurate and not false or misleading. Such estimates must then be **notified** according to a **Standard** as soon as practicable thereafter.

Each **resource update notification** must also contain a glossary of the key terms used in the **notification** and use a similar format to the **reserve** and/or **resource** disclosures made in the **admission document**.

Drilling update

For the avoidance of doubt, exploration drilling updates are required under **AIM Rule 11** and, as a minimum, should include information on:

Minerals & Ore Updates

- depth of zone tested
- drilling intervals
- average grades of mineralisation

Oil & Gas Updates

- depth of zone tested
- rock formation encountered
- any liquids/gases recovered.

Review by qualified person

A **qualified person** from the **AIM company** or an appointed adviser, which may include the **CP**, should review and sign off on each **resource** or **drilling update** and include their name, position and qualifications within the **notification** together with a statement to the effect that they have reviewed the information contained therein.

Review by nominated adviser

The **Exchange** expects that, in addition to the above, an appropriate person from the **nominated adviser** of an **AIM company** will review, prior to its release (as part of its regulatory obligations owed solely to the Exchange) all **notifications** made by its client **AIM company**.

Nominated advisers

In order to comply with **AIM Rule 39**, a **nominated adviser** acting for any **resource companies** should ensure that it has appropriate access to suitably experienced and qualified individual(s) in the sector(s) in which its **AIM companies** operate. These individuals need not necessarily be full-time employees of the **nominated adviser** and may be engaged on a consultancy basis.

Dual-listed resource companies

AIM companies and **nominated advisers** are reminded that where an **AIM company** is also admitted to trading on another exchange, the **AIM Rules** need to be complied with irrespective of the regulatory requirements of the other exchange. Any specific issues in relation to an **AIM company's** ability to comply with the **AIM Rules** or this **Guidance** as a result of the rules of the other exchange should be referred to the AIM regulation team.

For the avoidance of doubt **quoted applicants** taking advantage of the Designated Market Route will be required to comply with the contents of this **Guidance**.

Definitions used in this Guidance

AIM Rules	The ' <i>AIM Rules for Companies</i> ' as issued from time to time
applicant	Shall have the meaning set out in the AIM Rules , however, for the avoidance of doubt, for the purposes of this Guidance it shall include all subsidiaries and interests of the applicant and shall also include a quoted applicant .
assets	All assets, licences, joint ventures or other arrangements owned by the applicant or AIM company or proposed to be exploited or utilised by it
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
CP	Competent Person
CPR	Competent Person's Report
Guidance	This Guidance Note for Mining and Oil & Gas companies as may be amended and/or updated from time to time by the Exchange
IMMM	Institute of Materials, Minerals and Mining
JORC	The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, as published by the Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia
liabilities	All liabilities, royalty payments, contractual agreements and minimum funding requirements relating to the applicant or AIM company's work programme and assets
professional association	Self-regulatory organisation of engineers and/or geoscientists
qualified person	Professionally qualified and a member in good standing of an appropriate recognised professional association and have at least five years <i>relevant</i> experience within the sector
reserves	Mineral and Ore – Probable and Proven reserves (or equivalent depending on the Standard used) Oil & Gas – Proved, Proved + Probable and Proved + Probable + Possible reserves <i>except</i> when referring to net present value calculations when reserves should only include Proved and Proved + Probable reserves
resource companies	Companies operating in the mining and oil & gas sectors which are admitted or are seeking admission to AIM

resource update	Any notification that contains a statement on reserves and/or resources
resources	Mineral and Ore – Inferred, Indicated and Measured Resources (or equivalent depending on the Standard used) Oil & Gas – Contingent and Prospective Resources
Russian	Gosstandart of Russia (GOST), the national Russian standard on mining and minerals as published by the National Certification Body of the Russian Federation For data to be included under this standard it must have been approved by the Russian State or Federal body
SAMREC	The South African Code for Reporting of Mineral Resources and Mineral Reserves, as published by the South African Mineral Committee under the auspices of the South African Institute of Mining and Metallurgy
SME	The Society for Mining, Metallurgy, and Exploration
SPE	The Society of Petroleum Engineers
Standard	An Internationally recognised standard that is acceptable under the following codes and/or organisations: Mineral resources and reserves – CIM, IMMM, JORC, Russian, SAMREC and SME. Oil & Gas resources and reserves – CIM and SPE. Submissions can be made to AIM Regulation to consider other codes that may be comparable with any of the above

**Appendix 1
SUMMARY TABLE OF ASSETS**

Minerals & Ore

Asset⁽¹⁾	Holder	Interest (%)	Status⁽²⁾	Licence expiry date	Licence area	Comments
1. Asset A	Holders name	50%	Exploration	16 March 2006	km ²	Commencement of sampling in x months
2. Asset B	Holders name	100%	Development	16 March 2006	km ²	Drill hole and sample grades obtained to date
3. Asset C	Holders name	30%	Production	16 March 2006	km ²	Annual current production (tonnes per annum)

(1) Asset – Country and asset/project name

(2) Status – Exploration, Development or Production only

Oil & Gas

Asset⁽¹⁾	Operator	Interest (%)	Status⁽²⁾	Licence expiry date	Licence area	Comments
1. Asset A	Operators name	50%	Exploration	16 March 2006	km ²	Commencement of exploration in x months
2. Asset B	Operators name	100%	Development	16 March 2006	km ²	Development drilling programme to commence in Y months
3. Asset C	Operators name	30%	Production	16 March 2006	km ²	Current production (barrels or cubic feet per day) and estimated peak production

(1) Asset – Country, licence and block

(2) Status – Exploration, Development or Production only

Appendix 2 CONTENT OF CPR

The **CPR** should cover (as a minimum) the following:

Executive summary

Table of contents

Introduction

- explanation of the sources of all information on which the **CPR** is based (for example any site visits (including details of who undertook such visit and when), drilling results, seismic data, reservoir or well data, sample analysis, interviews with directors, details of desktop research)
- description of **reserves** and/or **resources**, where applicable detailing characteristics, type, dimensions and grade distribution, and the methods to be employed for their exploration and extraction (including **Appendix 1** disclosure)

Overview of the region, location and assets

- description of the **applicant's assets and liabilities**, the rights in relation to them and a description of the economic conditions for the working of those licences, concessions or similar including any environmental, land access, planning and obligatory closure costs
- details of any interest (current or past) any director, **CP** or promoter has in any of the **assets**
- appropriate maps, some background on the country and location plans demonstrating the major properties comprising the **assets**, their workings and geographical characteristics and wells, platforms, pipelines, bore holes, sample pits, trenches and similar, to the extent they exist

Reserves & resources (separately disclosed)

- statement of **reserves** (if any), and where applicable **resources** including an estimate of volume, tonnage and grades, (in accordance with a **Standard**, which should be consistently applied and disclosed in line with the tables in **Appendix 3**), method of estimation, expected recovery and dilution factor, expected extraction and processing tonnage or volume, as appropriate, depending on whether the **reserves** and/or **resources** are of minerals or oil and/or gas. Where there are resources that have not been sufficiently appraised in order to provide the previous information, a separate statement of such resources together with any other quantified information which has been appraised in accordance with a **Standard**
- estimate of net present value (post tax) at a discount rate of 10% of **reserves** (or equivalent depending on **Standard** used) analysed separately and the principal assumptions (including cost assumptions, effective date, constant and or forecast prices, forex rates) on which valuation is based together with a sensitivities analysis. Additional valuations may be included within the **CPR** and should include an explanation of the basis of such a valuation and the method used

Other assets

- any other assets material to the **applicant**.
- commentary on the plant and equipment which are or will be significant to the **applicant's** operations, bearing in mind any forecasted rates of extraction included within the **admission document**

Conclusions

Qualifications and basis of opinion

- full details and qualifications of the **CP** (company and individual(s)) and a statement of the **CP's** independence

Appendices – Glossary and definitions of any terms used

Appendix 3

SUMMARY OF RESERVES AND RESOURCES BY STATUS

Minerals & Ore

Category	Gross			Net attributable			Operator
	Tonnes (millions)	Grade (g/t)	Contained metal	Tonnes (millions)	Grade (g/t)	Contained metal	
Ore/Mineral reserves per asset							
Proved							
Probable							
Sub-total							
Mineral resources per asset							
Measured							
Indicated							
Inferred							
Sub-total							
Total							

Source: [name of person providing the above estimates, regarded as competent]

Note: "Operator" is name of the company that operates the asset
 "Gross" are 100% of the **reserves** and/or **resources** attributable to the licence whilst "Net attributable" are those attributable to the **AIM company**
 Metal equivalent grades are not acceptable and should not be used in reporting

Appendix 3 continued
SUMMARY OF RESERVES AND RESOURCES BY STATUS

Oil & Gas - Reserves

(all figures in bbls or scf)	Gross			Net attributable			Operator
	Proved	Proved & Probable	Proved, Probable & Possible	Proved	Proved & Probable	Proved, Probable & Possible	
Oil & Liquids reserves per asset							
From production to planned for development							
Total for Oil & Liquids							
Gas reserves per asset							
From production to planned for development							
Total for Gas							

Source: [name of competent person providing the above estimates]

Note: "Operator" is name of the company that operates the asset

"Gross" are 100% of the **reserves** and/or **resources** attributable to the licence whilst "Net attributable" are those attributable to the **AIM company**

bbls – Barrels

scf – Standard Cubic Feet

Appendix 3 continued
SUMMARY OF RESERVES AND RESOURCES BY STATUS

Oil & Gas – Contingent Resources

(all figures in bbls or scf)	Gross			Net attributable			Risk Factor	Operator
	Low Estimate	Best Estimate	High Estimate	Low Estimate	Best Estimate	High Estimate		
Oil & Liquids Contingent Resources per asset								
From development pending to development not viable								
Total for Oil & Liquids								
Gas Contingent Resources per asset								
From development pending to development not viable								
Total for Gas								

Source: [name of competent person providing the above estimates]

Note: "Risk Factor" for Contingent Resources means the estimated chance, or probability, that the volumes will be commercially extracted
 "Operator" is name of the company that operates the asset
 "Gross" are 100% of the **reserves** and/or **resources** attributable to the licence whilst "Net attributable" are those attributable to the **AIM company**

bbls – Barrels
 scf – Standard Cubic Feet

Appendix 3 continued
SUMMARY OF RESERVES AND RESOURCES BY STATUS

Oil & Gas – Prospective Resources

(all figures in bbls or scf)	Gross			Net attributable			Risk Factor	Operator
	Low Estimate	Best Estimate	High Estimate	Low Estimate	Best Estimate	High Estimate		
Oil & Liquids Prospective Resources per asset								
From prospect to play								
Total for Oil & Liquids								
Gas Prospective Resources per asset								
From prospect to play								
Total for Gas								

Source: [name of competent person providing the above estimates]

Note: "Risk Factor" for Prospective Resources, means the chance or probability of discovering hydrocarbons in sufficient quantity for them to be tested to the surface. This, then, is the chance or probability of the Prospective Resource maturing into a Contingent Resource

"Operator" is name of the company that operates the asset

"Gross" are 100% of the **reserves** and/or **resources** attributable to the licence whilst "Net attributable" are those attributable to the **AIM company**

bbls – Barrels

scf – Standard Cubic Feet