

Overview of NI 43-101 and Mining Disclosure Basics

Standards of Disclosure for Mineral Projects

Craig Waldie, P.Geo., Senior Geologist, Corporate Finance

Jim Whyte, P.Geo., Senior Geologist, Corporate Finance

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Caution

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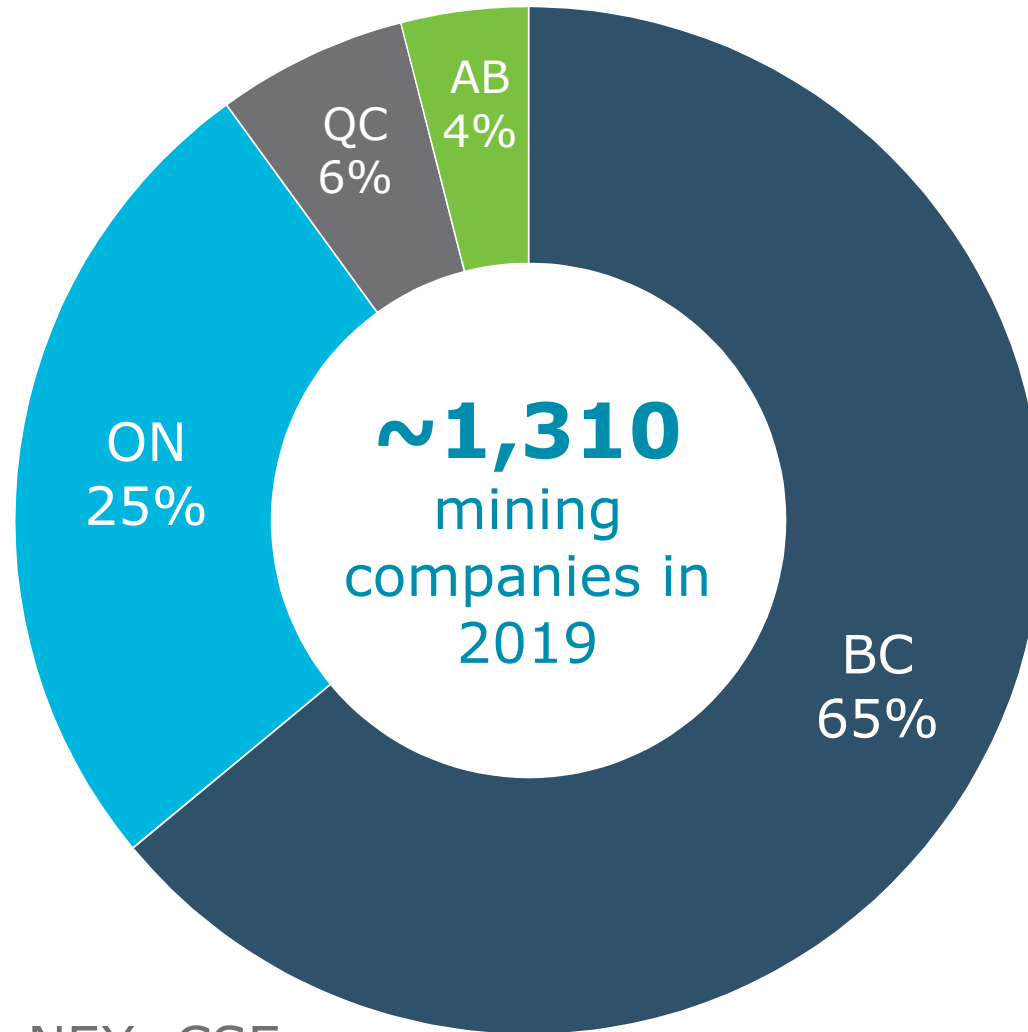
Presentation outline

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Canadian regulators

"Better the devil you know ..."

Provincial oversight of mining companies

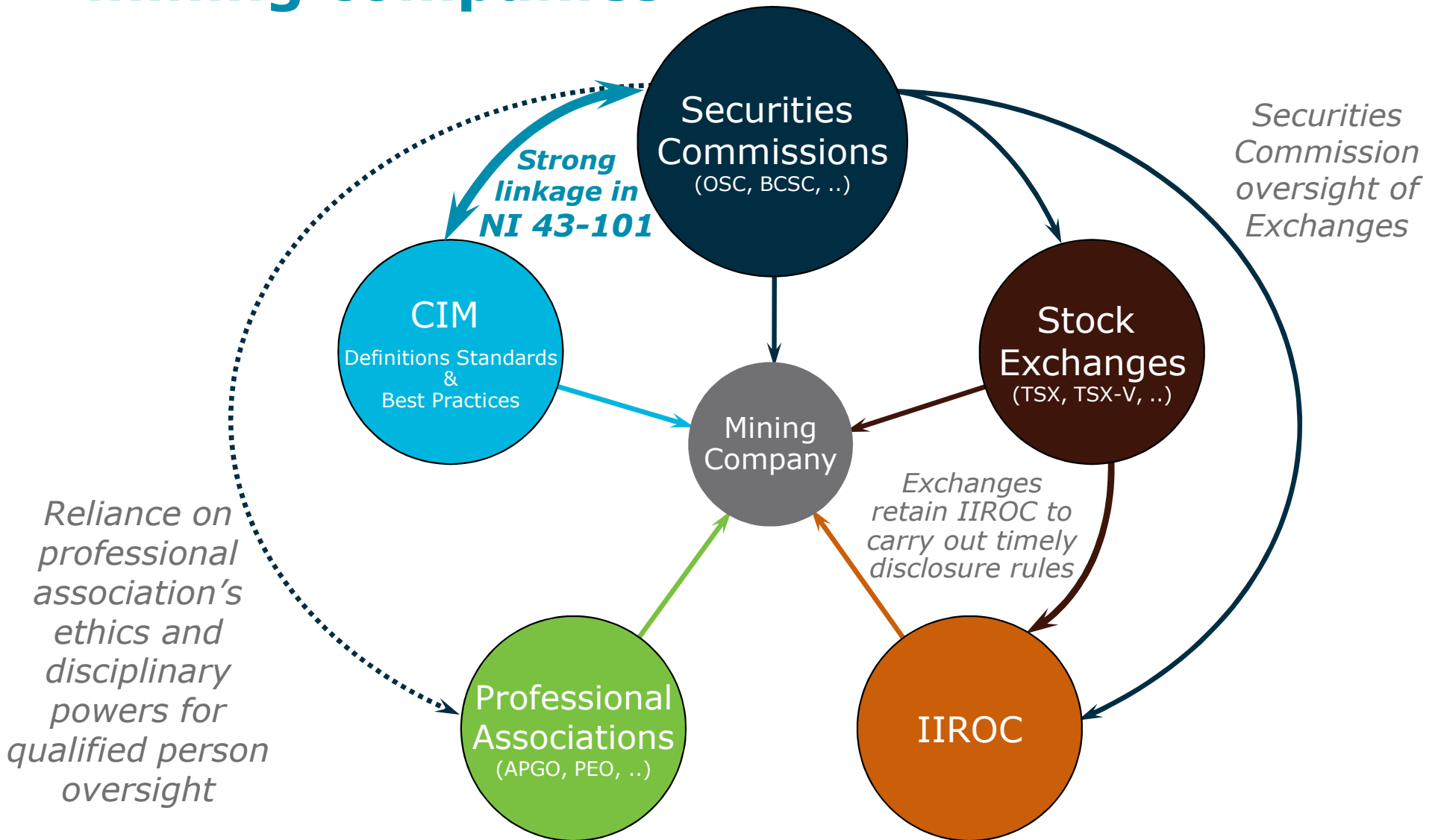


12 Technical review staff

- BCSC - 3
- OSC - 2
- AMF - 2
- TSX - 1
- TSX-V - 3
- IIROC - 1

TSX, TSXV, NEX, CSE

Canadian regulatory landscape for mining companies



Role of securities commissions

Dual Mandate: *Provide protection to investors from unfair, improper, and fraudulent practices, & foster fair and efficient capital markets, and confidence in capital markets*

- **Make rules**
 - Develop rules and policies concerning securities
- **Monitor compliance**
 - Monitor market participants for compliance with securities law
- **Enforce rules**
 - Investigate and prosecute alleged breaches of securities law

CSA/ACVMCanadian Securities
AdministratorsAutorités canadiennes
en valeurs mobilières**Big 4:**A|S|C
Alberta Securities Commission

OSC

The logo for the Autorité des Marchés Financiers (AMF), featuring a stylized yellow and green book-like shape to the left of the text 'AUTORITÉ DES MARCHÉS FINANCIERS' in a bold, sans-serif font.
AUTORITÉ
DES MARCHÉS
FINANCIERS

Role of professional associations

Canada

- The practice of professional geoscience and/or engineering is regulated by statute at the provincial level (EGBC, APEGA, PGO, OGQ, etc.)
- **Core legislated mandate: Protecting the public interest**
 - Admit eligible members on the basis of their academic qualifications and experience
 - Require compliance with professional standards of competence and ethics
 - Require or encourage continuing professional development
 - Able to apply disciplinary powers, including the power to suspend or expel a member

Role of CIM

- Create, maintain, and update the CIM Definition Standards for mineral resources and mineral reserves
- Develop industry-leading best practices and guidelines for the mining industry in Canada

NEW

In 2018, CIM updated their **website** for standards, best practices, and guidance

<https://mrmr.cim.org/>



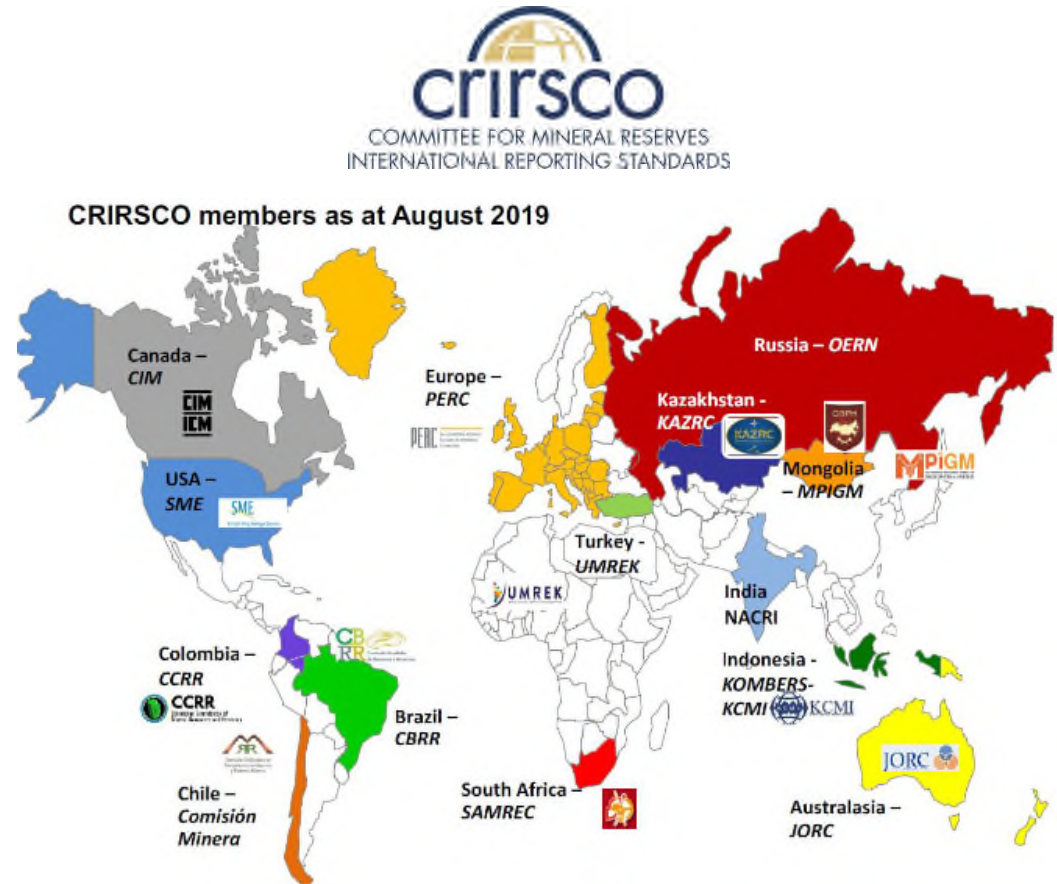
The screenshot shows the CIM website homepage. At the top, there is a header with the CIM ICM logo and the text 'Standards, Best Practices & Guidance for Mineral Resources & Mineral Reserves'. To the right of the header are social media icons for Facebook, Twitter, LinkedIn, and Email, along with a search icon. Below the header is a navigation menu with the following items: About, Standards, Best Practices, Guidance, Links, Stakeholders, Library, and Contact Us. The main content area features a large banner image of a rocky landscape with the text 'Promoting Excellence in Mineral Resource & Mineral Reserve Estimation, Reporting & Valuation'. Below the banner are four columns of content, each with a heading and a brief description:

> STANDARDS	> BEST PRACTICES	> GUIDANCE	> CRIRSCO
Definition and regulatory standards for mineral resources, mineral reserves and mineral projects	CIM best practice guidelines for exploration, mineral processing, and the estimation of mineral resources and mineral reserves	CSA, OSC, BCSC, TSX Staff Notices and Additional Guidelines	Committee for Mineral Reserves International Reporting Standards

CIM Definition Standards (2014)

10 core definitions are harmonized with CRIRSCO

- **Mineral Resource**
 - Inferred Mineral Resource
 - Indicated Mineral Resource
 - Measured Mineral Resource
- **Modifying Factors**
- **Pre-Feasibility Study**
- **Mineral Reserve**
 - Probable Mineral Reserve
 - Proven Mineral Reserve
- **Feasibility Study**

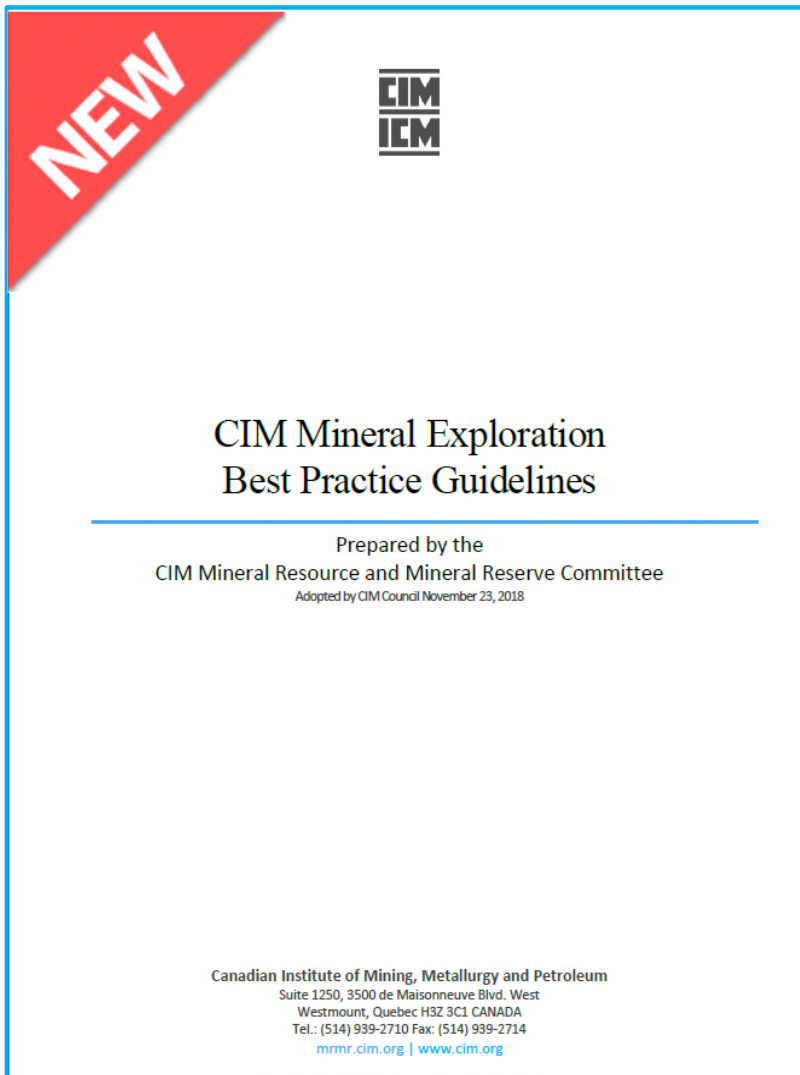


Source:
<http://www.crirSCO.com/welcome.asp>

CIM Best Practice Guidelines

- Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (2003)
COMING SOON (2019?)
 - Commodity specific guidance (2003-2012):
 - Potash
 - Industrial minerals
 - Coal
 - Uranium
 - Laterites
 - Placers
 - Rock-hosted diamonds
 - Mineral brines
- Mineral Exploration Best Practice Guidelines (2018) **NEW**
- Guidance on Commodity Pricing in Resource and Reserve Estimation (2015) **COMING SOON** (2019?)
- Best Practice Guidelines for Mineral Processing (2011)
COMING SOON (2019?)
- Guidelines for Reporting of Diamond Exploration Results (2003)

CIM Mineral Exploration Best Practice Guidelines (Nov 23, 2018)



CIM Mineral Exploration Guidelines:

- Principle-based guidance only
- Additional guidance in reference documents
- Purpose is to assist exploration practitioners in the planning, supervising, and executing of mineral exploration programs in a high-quality manner in order to maintain public confidence

Exploration guideline topics include:

- Project management
- Records and documentation
- Geological surveys
- Geophysical surveys
- Geochemical surveys
- Drilling programs
- Sample prep., analysis, security, & QA/QC

What does NI 43-101 say about using best practice guidelines?

- **General Guidance (6) of Companion Policy 43-101CP**
 - Qualified person is not specifically required to follow best practice guidelines
 - However, a qualified person acting as a “professional”, will generally respect best practices as established by CIM or similar organizations in other jurisdictions
 - Companies that disclose technical information not conforming to best practices could be making misleading disclosure
 - Misleading disclosure is an offence under securities legislation

Note:

Regulators may challenge a company’s disclosure if it appears to deviate from published industry best practice guidelines

In defense of NI 43-101:

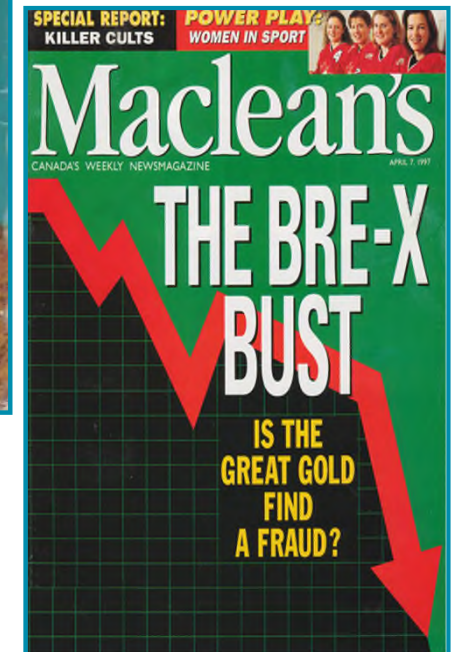
A misunderstood teenager

Why do we need mining disclosure rules?

- **Investor confidence**
 - It is critical for exploration and mining companies to access large amounts of risk capital over a long period of time
- **Control disclosure**
 - Need to deal with potentially misleading information to protect investors
- **Perception of the mining industry**
 - “A gold mine is a hole in the ground with a liar at the top”



1970
(JORC)



1997
(NI 43-101)

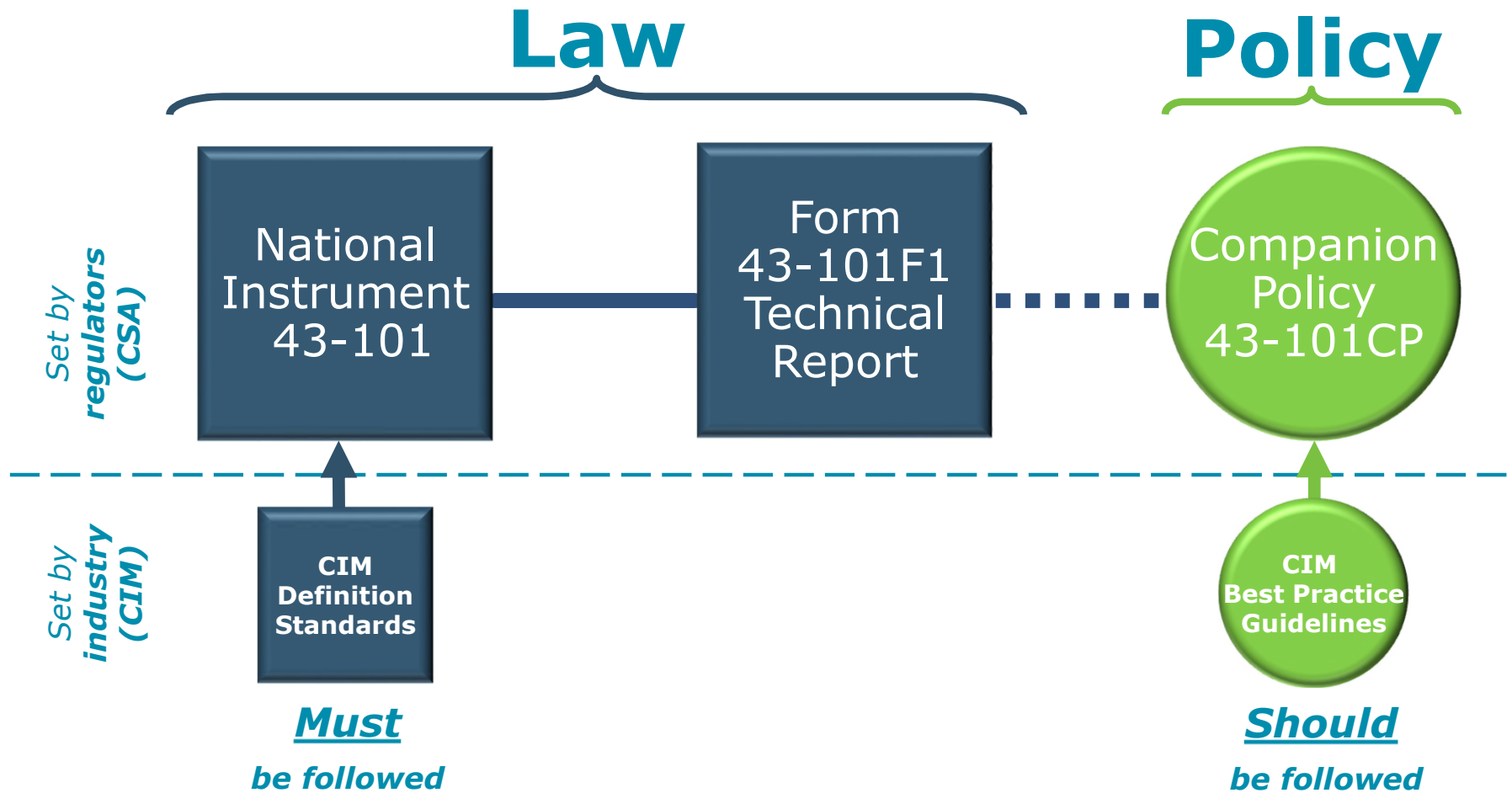
Role of NI 43-101 (“Mining Rule”)

- **Requires that public disclosure of technical information is:**
 - Based on reliable and verified data
 - Derived from professional judgements which consider industry best practices
 - Based on reasonable assumptions which are defensible and clearly explained
 - Consistent in its use of standard industry terms and definitions
 - Balanced in the way it conveys material issues and potential risks
 - Reported in a manner which is understandable to a reasonable investor
 - Signed off by a qualified person who is responsible for the information

Note:

*NI 43-101 sets minimum standards for “**DISCLOSURE**” of technical information
It does **NOT** set standards for “**professional practice**” by the qualified person*

NI 43-101 – CSA and CIM partnership



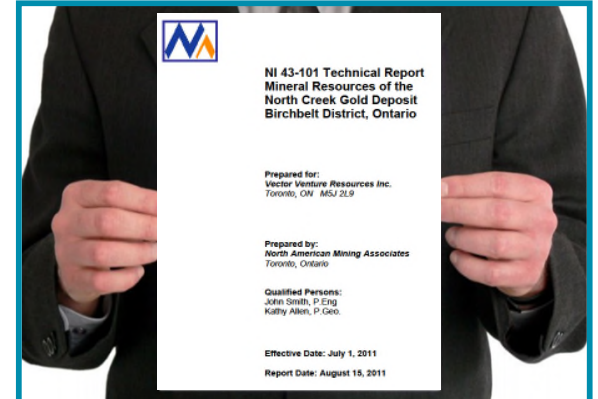
What are the core principles of NI 43-101?



**Qualified
Person**



**Standards &
Best Practices**



**Technical
Report**

“Disclosure with professional accountability”

Sources:
<https://www.geologyforinvestors.com>
<https://www.cim.org>
<https://archive.macleans.ca>

3 “E”s of a qualified person (plus 1)

+ *Expertise*

Proficient with the disclosure rules and obligations of NI 43-101 and awareness of the CIM Best Practice Guidelines

Education

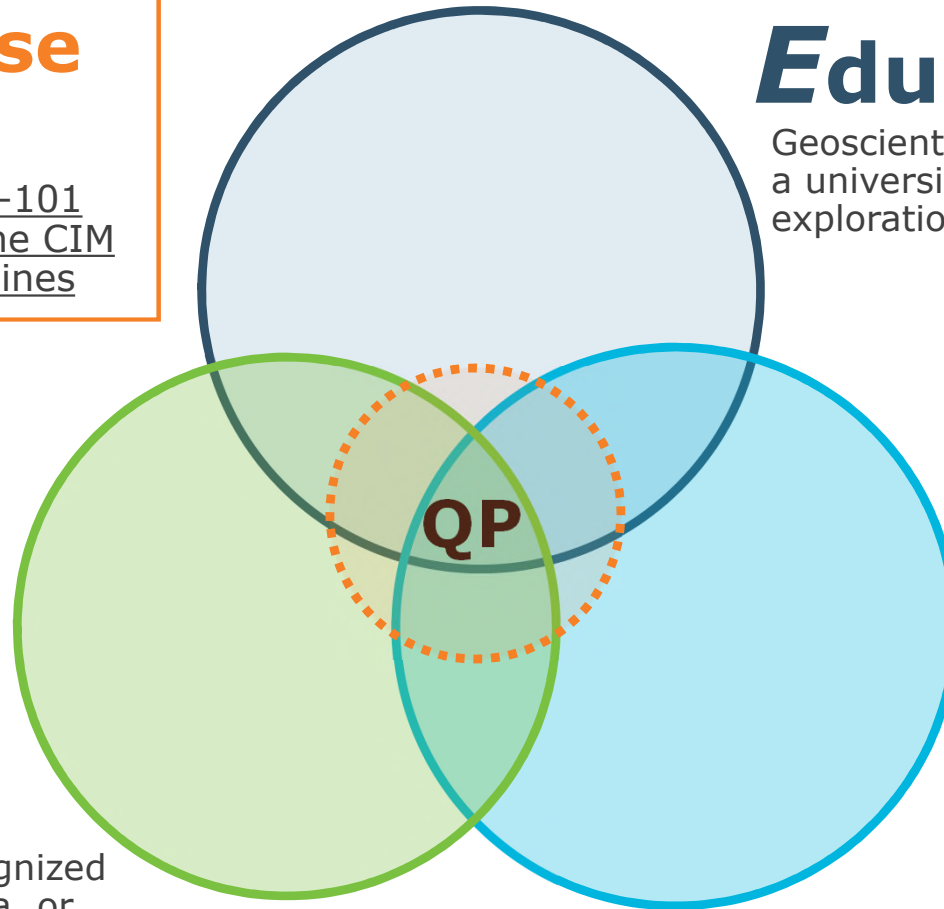
Geoscientist or engineer with a university degree related to exploration or mining

Ethics

Professional association recognized by law in Canada, or listed in Appendix A

Experience

At least 5 years experience in exploration or mining, and relevant experience to the subject matter



Relevant experience - QP self assessment



I have the relevant experience



I need more experience



I don't understand

*"The qualified person should be clearly satisfied that they could face their peers and demonstrate **competence** and **relevant experience** in the commodity, type of deposit and situation under consideration"*

Competency

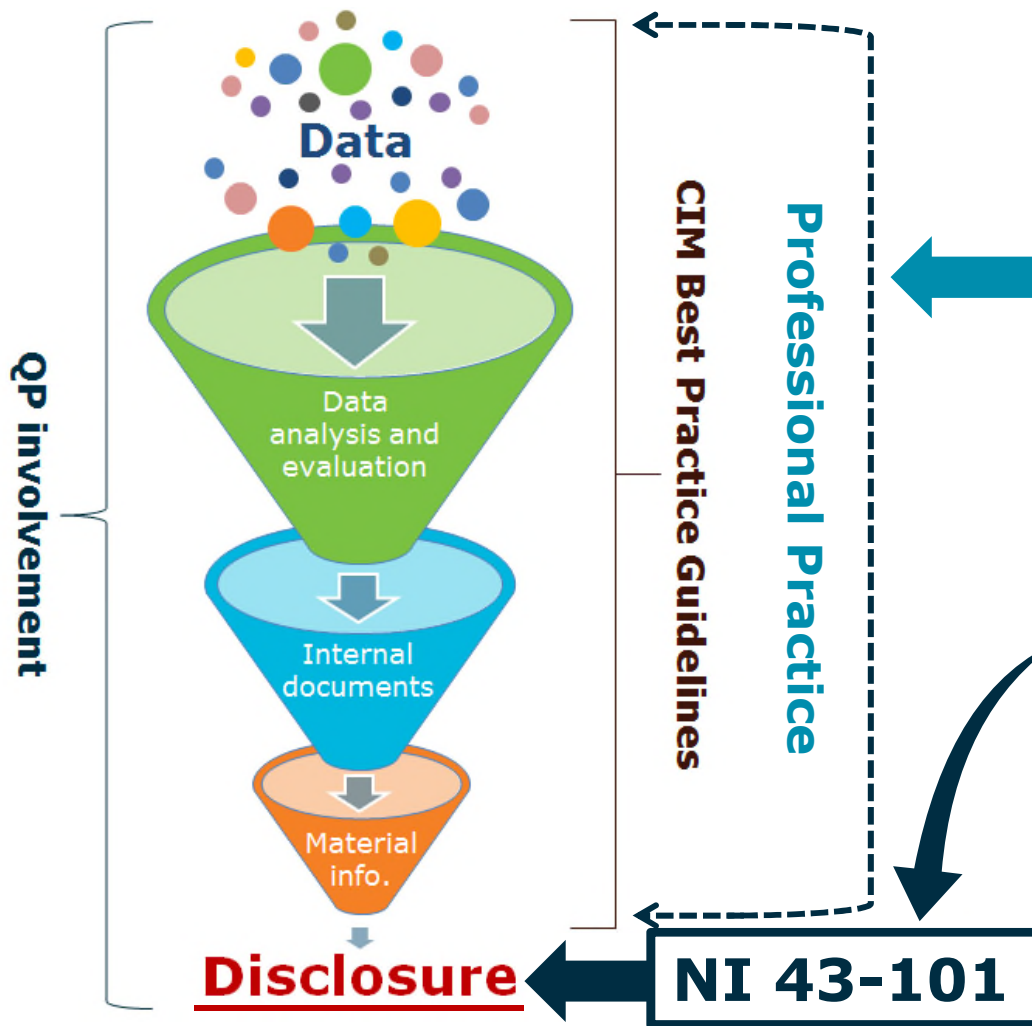
A specific range of skill ability to do something being adequately or well the condition of being to meet demands, re



www.cim.org

*The QP, based on his/her **relevant experience** and **professional judgement** is responsible for choosing the assumptions, methods, and practices used to verify, interpret, estimate, and report technical information*

Professional practice vs. disclosure



① **IF** a problem occurs here related to professional practice and the QP's "professional judgment"

- Data quality and verification
- Misinterpretation of geological info.
- Not following best practice guidelines
- Unrealistic assumptions
- Resource estimation issues
- Overly optimistic mining study forecasts

② **THEN**, problems shows up in the disclosure required by NI 43-101

③ **BUT**, NI 43-101 can't fix problems with professional practice – the QP needs to address these problems before the disclosure is made

What is professional judgement?

Applying accumulated training, knowledge, skills, and experience in a way that draws on professional standards, laws, ethics, and best practices to make informed opinions and decisions about what should be done in specific circumstances.

General definition

Qualified person's "gatekeeper" role

NI 43-101 can only work if qualified persons apply the disclosure rules on a principles basis, considering industry standards, best practice guidelines, and the public interest.

"A principles-based approach does not work with individuals who have no principles."

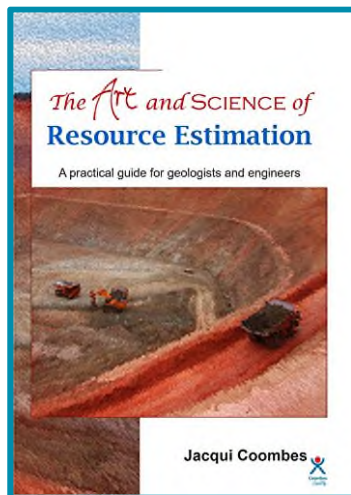
H. Santos, CEO of Britain's Financial Services Authority – March 12, 2009

Wide range of “professional judgement”

The knock against NI 43-101 is really more about concerns with the quality of professional practice

CEO #1: “I can tell you 43-101 is a piece of garbage. It's not worth anything.”

CEO #2: “What we typically see, where it falls apart, is the block model. The extrapolation they are using for their resources is probably completely out of whack relative to the geostatistical information or data.”



“Art” of
estimation
→



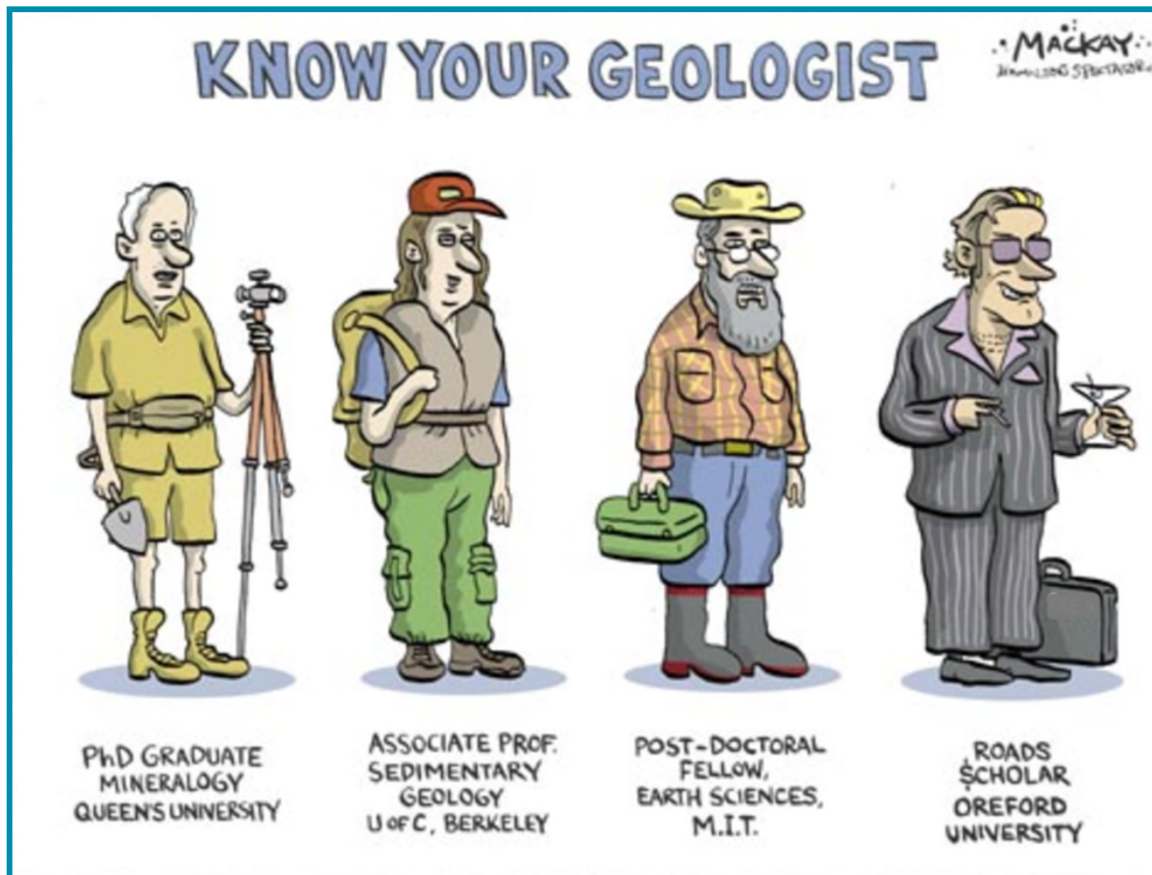
VS



Sources:

<https://www.amazon.com>, <https://schreinerbfa.comdes.wordpress.com>
<https://news.uga.edu/gmoa-displays-prominent-japanese-prints/>

Did the company choose an appropriate QP?



Key point to remember:

"What it all comes down to, and always will, is the integrity, honesty, competence, and experience of the person performing the work—period!"

B. Cook, Exploration Insights – Dec, 2013

**"Former Bre-X geologist acquitted of insider trading" -
August 2, 2007**

Disclosure reviews of technical information by the regulator

“Disclosure” under NI 43-101

“Disclosure” means:

- any oral statement or written information
- made by, or on behalf of an issuer
- 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, ... and includes websites



WESOME
Weston Announces Filing of NI 43-101 Technical Report for Previously Announced Mineral Resource Estimate for the Kena Mine Complex, Quebec

RESULTS OF INTERIM MINERAL RESOURCES – December 31, 2018

A Zone Mineral Resources (Kena Zone)

	Tonnes	Gold Grade (g/t Au)	Gold Ounces
Measured	0	0.00	0
Indicated	240,000	0.02	50,000
Total Measured and Indicated	240,000	0.02	50,000
Inferred	190,000	0.01	39,000

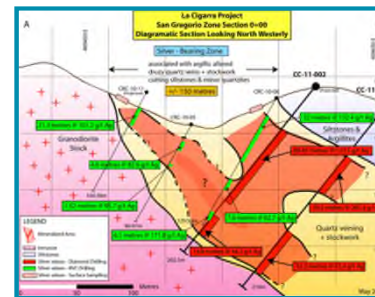
Broadly Defined In-Mine Resources at Kena Complex (Kena Zone), below crown pillar (K, B, South, VC and Mill Zones)

	Tonnes	Gold Grade (g/t Au)	Gold Ounces
Measured	0	0.00	0
Indicated	1,220,000	0.02	251,000
Total Measured and Indicated	1,220,000	0.02	251,000
Inferred	900,000	0.02	180,000

Total Kena Mine Complex

	Tonnes	Gold Grade (g/t Au)	Gold Ounces
Measured	0	0.00	0
Indicated	1,460,000	0.02	302,000
Total Measured and Indicated	1,460,000	0.02	302,000
Inferred	1,090,000	0.01	228,000

* Detailed notes in table 4 of this press release.
* Measured and Indicated Resources are exclusive of inferred.
* All grades reported in tonnes @ 30 grams per tonne.
The technical and geochemical report has been compiled, reviewed and approved by Steve Turcotte, P.Eng., COO/MD/ Senior Project Geologist of the Company and a “Qualified Person” as defined in NI 43-101.



North American Palladium Ltd.

North American Palladium is pleased to announce a new gold and silver production facility...
 CONFERENCE: 100th Anniversary Conference
 NEWS: 2018 Annual Report & ESG Report

EVENTS & PRESENTATIONS

February 6, 2019
North American Palladium's 100th Anniversary Conference (Full and Webcast) on February 22

January 11, 2019
North American Palladium Reports Excellent Exploration Results from the Nevada State of Mind (N-SM) Gold Mine

January 22, 2019
North American Palladium Appoints Chief Financial Officer

High-Grade Gold Production Development in Columbia November 2018

Spotting bad science disclosure

1. Sensationalized headlines
2. Misinterpreted results
3. Conflict of interest
4. Correlation vs. causation
5. Speculative language
6. Sample size too small
7. Unrepresentative samples
8. No control group used
9. No blind testing used
10. 'Cherry-picked' results
11. Unreproducible results
12. No peer review

Source:
<http://www.compoundchem.com/2014/04/02/a-rough-guide-to-spotting-bad-science/>

A ROUGH GUIDE TO SPOTTING

• BAD SCIENCE •

<p>1. SENSATIONALISED HEADLINES</p> <p> Headlines of articles are commonly designed to entice viewers into clicking on and reading the article. At best, they over-simplify the findings of research. At worst, they sensationalise and misrepresent them.</p> <p>2. MISINTERPRETED RESULTS</p> <p> News articles sometimes distort or misinterpret the findings of research for the sake of a good story, intentionally or otherwise. If possible, try to read the original research, rather than relying on the article based on it for information.</p> <p>3. CONFLICT OF INTERESTS</p> <p> Many companies employ scientists to carry out and publish research - whilst this does not necessarily invalidate research, it should be analysed with this in mind. Research can also be misrepresented for personal or financial gain.</p> <p>4. CORRELATION & CAUSATION</p> <p> Be wary of confusion of correlation & causation. Correlation between two variables doesn't automatically mean one causes the other. Global warming has increased since the 1800s, and pirate numbers decreased, but lack of pirates doesn't cause global warming.</p> <p>5. SPECULATIVE LANGUAGE</p> <p> Speculations from research are just that - speculation. Be on the look out for words such as 'may', 'could', 'might', and others, as it is unlikely the research provides hard evidence for any conclusions they precede.</p> <p>6. SAMPLE SIZE TOO SMALL</p> <p> In trials, the smaller a sample size, the lower the confidence in the results from that sample. Conclusions drawn should be considered with this in mind, though in some cases small samples are unavoidable. It may be cause for suspicion if a large sample was possible but avoided.</p>	<p>7. UNREPRESENTATIVE SAMPLES</p> <p> In human trials, researchers will try to select individuals that are representative of a larger population. If the sample is different from the population as a whole, then the conclusions may well also be different.</p> <p>8. NO CONTROL GROUP USED</p> <p> In clinical trials, results from test subjects should be compared to a 'control group' not given the substance being tested. Groups should also be allocated randomly. In general experiments, a control test should be used where all variables are controlled.</p> <p>9. NO BLIND TESTING USED</p> <p> To prevent any bias, subjects should not know if they are in the test or the control group. In double-blind testing, even researchers don't know which group subjects are in until after testing. Note, blind testing isn't always feasible, or ethical.</p> <p>10. 'CHERRY-PICKED' RESULTS</p> <p> This involves selecting data from experiments which supports the conclusion of the research, whilst ignoring those that do not. If a research paper draws conclusions from a selection of its results, not all, it may be cherry-picking.</p> <p>11. UNREPLICABLE RESULTS</p> <p> Results should be replicable by independent research, and tested over a wide range of conditions (where possible) to ensure they are generalisable. Extraordinary claims require extraordinary evidence - that is, much more than one independent study!</p> <p>12. JOURNALS & CITATIONS</p> <p> Research published to major journals will have undergone a review process, but can still be flawed, so should still be evaluated with these points in mind. Similarly, large numbers of citations do not always indicate that research is highly regarded.</p>
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Types of disclosure reviews

1) Continuous disclosure (CD) review

- **Main objectives**

- **Compliance:** Assess companies technical disclosure for compliance with the rules
- **Education:** Help companies understand their disclosure obligations
- Full review
 - Broad in scope, and based on selected risk criteria
 - Review of website, news releases, AIF, MD&A, technical reports, etc.
- Issue oriented review
 - Focussed on a specific technical issue based on complaints, news releases, media articles, etc.
 - Example: review of website corporate presentations

Types of disclosure reviews

2) Prospectus review

- Similar process to a CD review, except with specific timelines
 - Long form (IPO) – Initial comment letter sent within 10 business days
 - Short form – Initial comment letter sent within 3 business days
- **Key:** Use of proceeds needs to be consistent with the technical report recommendations

Technical report review

- Assess whether each “material” property has a technical report that’s:
 - **Current** - supports the property’s current stage of development
 - **Complete** - includes all material information for the “property” not just the “project”
 - **Concise** - prepared in a summary form without large appendices
 - **Compliant** - follows Form 43-101F1 and the CIM Definition Standards
 - **QPs** - each QP meets the definition, and are independent, if required

Disclosure review process

Formal comment letter is sent electronically to the company

- Outlines specific disclosure concerns identified by staff
- Company is requested to respond in writing in 5-10 business days
- Review process may involve multiple comment and response letters
- Requests company to explain, clarify, or retract disclosure, or other corrective action
 - Staff will typically comment on issues such as:
 - Non-compliance with NI 43-101 or disclosure not based on best practices
 - Website disclosure that includes economic forecasts not supported by a technical report
 - Technical reports that do not comply with Form 43-101F1
- Staff may also conclude that the company is in “default” of a specific filing obligation

Sample comment letter



Ontario
Securities
Commission

Commission des
valeurs mobilières
de l'Ontario

22nd Floor
20 Queen Street West
Toronto ON M5H 3S8

22^e étage
20, rue queen ouest
Toronto ON M5H 3S8

July 12, 2019

The Corporate Finance branch of the Ontario Securities Commission has recently selected the Company for an issue oriented review of its continuous disclosure record.

Our review is being conducted under section 20.1 of the Securities Act (Ontario). On the basis of this review, OSC staff has concluded that the Company is in default (the **Default**) of certain NI 43-101 continuous disclosure obligations under Ontario securities law.

Failure to file a technical report

As noted in **CSA Staff Notice 43-309** *Review of Website Investor Presentations by Mining Issuers*, disclosure on the Company's website of economic projections and outcomes may trigger the filing of a technical report to support the economic analysis disclosure.

Examples of economic analysis on the Company's website not supported by a technical report include:

April 2019 **investor presentation** which includes disclosure of:

- Annual production rate
- Mine life
- Initial capital costs
- NPV & IRR
- Payback

Immediate action is required

By July 26, 2019, the Company should do one of the following:

- a) Remedy the Default, or
- b) Advise us that it does not intend to dispute staff's conclusions regarding the Default and provide a detailed timeframe as to when the Company intends to remedy the Default, or
- c) Advise us that it intends to dispute staff's conclusions regarding the Default.

So what if the disclosure doesn't comply?

NI 43-101 is enforceable under the Securities Act

- **Possible outcomes:**

- News release clarifying and/or retracting the disclosure
- Company placed on the OSC refilings and errors list
- Company placed on the default list (can't raise new money)
- Cease trade order or management cease trade order (trading stops)
- Referred to enforcement for further investigation

- **Other possible outcomes:**

- Class action lawsuit under civil liability provisions of the Act
- Complaint forwarded to the QP's professional association

Additional topics

Website disclosure – Pitfalls (% non-compliance)

- **Exploration target (79%)**
 - Failing to express the target as a range of tonnes and grade
 - Missing cautionary language
- **Historical estimate (60%)**
 - Lack of information about the source and date of the historical estimate
 - Missing cautionary language
- **Naming the QP (58%)**
 - QP needs to be named and their relationship to the company
- **PEA (56%)**
 - Lack of information about taxes
 - Missing cautionary language about the use of inferred resources
 - Unknowingly triggering a technical report
- **Mineral resource and mineral reserve (50%)**
 - No information about metal price assumptions and cut-off grades
 - Unclear if mineral resources include or exclude mineral reserves

CSA Staff Notice 43-309 Review of Website Investor Presentations by Mining Issuers (April 9, 2015)

Pre-filing Review of Mining Technical Disclosure

Goal: Increase certainty and reduce risk that technical disclosure issues will disrupt mining issuer's short form prospectus offerings

Process: Request a pre-filing review of **previously filed** technical disclosure by filing an application with the OSC and paying the prospectus pre-filing fee

Review: Technical disclosure including:

- Annual information form (AIF)
- News releases
- Technical reports
- Website

Timing: About 10 days, but conditional on prospectus volumes

*OSC Staff Notice 43-706 – Pre-filing Review of Mining Technical Disclosure
(June 6, 2019)*

OSC Whistleblower Program

- Launched in 2016 as the first paid program for a Canadian securities regulator
- Awards of up to \$5 million for tips
- Targets complex, hard-to-detect securities misconduct
- Offers robust whistleblower protections from reprisals
- Encourages market participants to enhance internal compliance reporting systems



Website: <http://www.officeofthewhistleblower.ca>.

Key staff notices for mining companies

Date	Topic	Reference
Jul 22, 2011	Mineral Brines	OSC Staff Notice 43-704 Mineral Brine Projects and NI 43-101
Aug 16, 2012	PEA and Technical Reports	CSA Staff Notice 43-307 Mining Technical Reports – Preliminary Economic Assessments
Nov 9, 2012	Emerging Markets	OSC Staff Notice 51-720 Issuer Guide for Companies Operating in Emerging Markets
Jun 13, 2013	Forward Looking Information	CSA Staff Notice 51-721 Forward Looking Information Disclosure
Jun 27, 2013	Technical Reports	OSC Staff Notice 43-705 Staff's Review of Technical Reports by Ontario Mining Issuers
Dec 11, 2013	Non-GAAP Financial Measures	OSC Staff Notice 52-722 Staff's Review of Non-GAAP Financial Measures
Feb 6, 2014	Mining MD&A	OSC Staff Notice 51-722 Review of Mining Issuers' MD&A and Guidance
Apr 9, 2015	Website Investor Presentations	CSA Staff Notice 43-309 Review of Website Investor Presentations by Mining Issuers
Feb 25, 2016	Companion Policy 43-101CP	CSA Notice Changes to Companion Policy 43-101CP
Nov 29, 2018	Promotional Activities	CSA Staff Notice 51-356 Problematic Promotional Activities by Issuers

Thank You!

Craig Waldie
Senior Geologist

416-593-8308
cwaldie@osc.gov.on.ca

Jim Whyte
Senior Geologist

416-593-2168
jwhyte@osc.gov.on.ca

