



# Mining Disclosure Best Practices

## Exploration to Production

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# Caution

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# Presentation Outline

<b>Time</b>	<b>Topic</b>	<b>Page</b>
10:00 - 10:05	<b>Opening Remarks</b>	1
10:05 - 10:20	<b>NI 43-101 – Basics</b>	5
10:20 - 11:00	<b>NI 43-101 – Disclosure from Exploration to Production</b>	15
11:00 - 11:10	<b>Technical Report – Basics</b>	43
11:10 - 11:15	<b>MD&amp;A Review of Mining Issuers</b>	51
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11:20 - 11:30	<i>Questions and Answers</i>	

# OSC SME Institute – Objectives

Our goal is to:

- Help SMEs navigate the regulatory waters
- Demystify disclosure requirements so companies can focus on building their business
- Reduce SMEs' cost of compliance so that this money can be better spent on strategic initiatives
- Provide an opportunity for informal dialogue with OSC staff

*Disclosure requirements, including those for technical reporting,  
are a cornerstone of investor confidence*



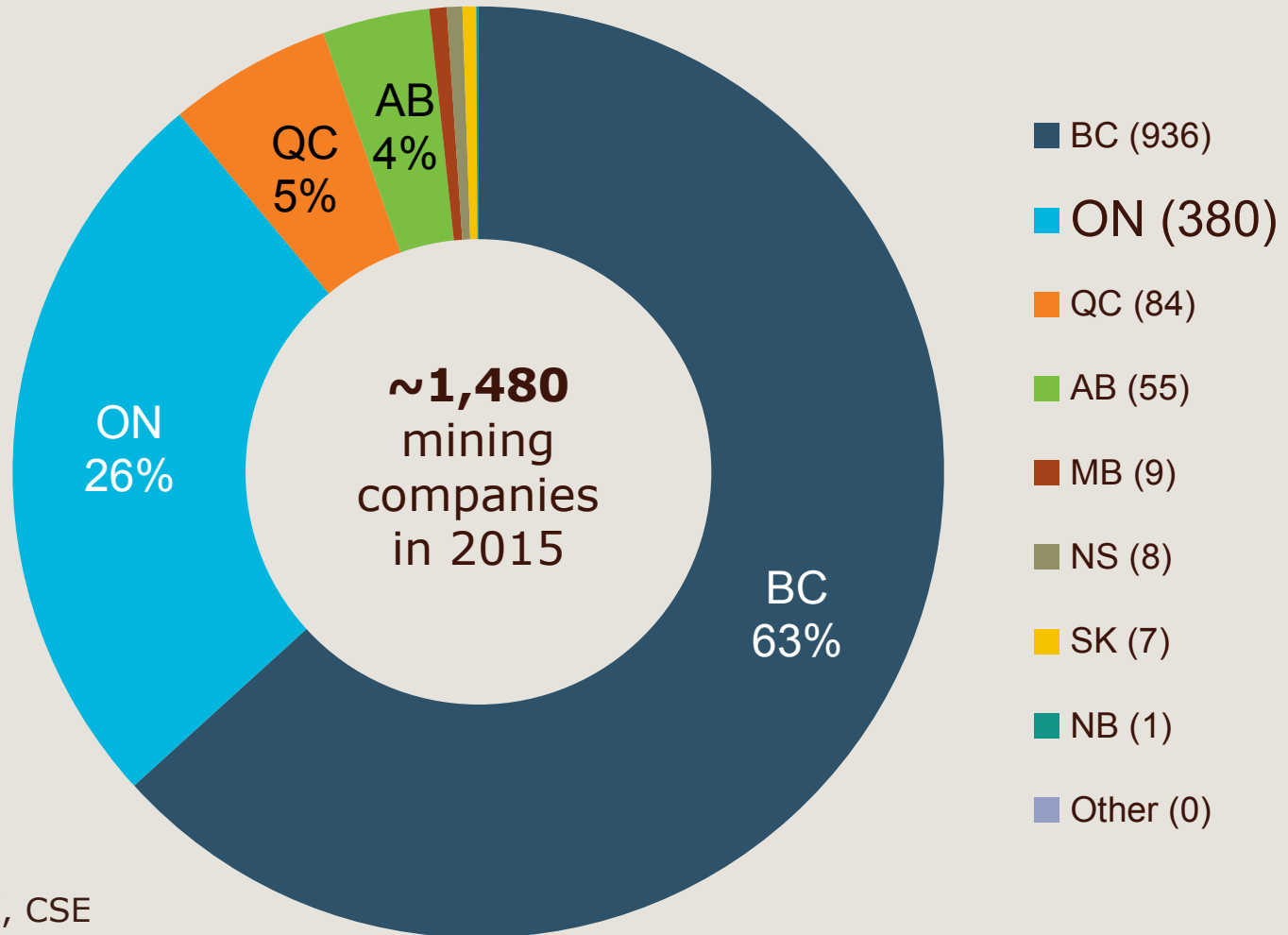
# NI 43-101

## Basics



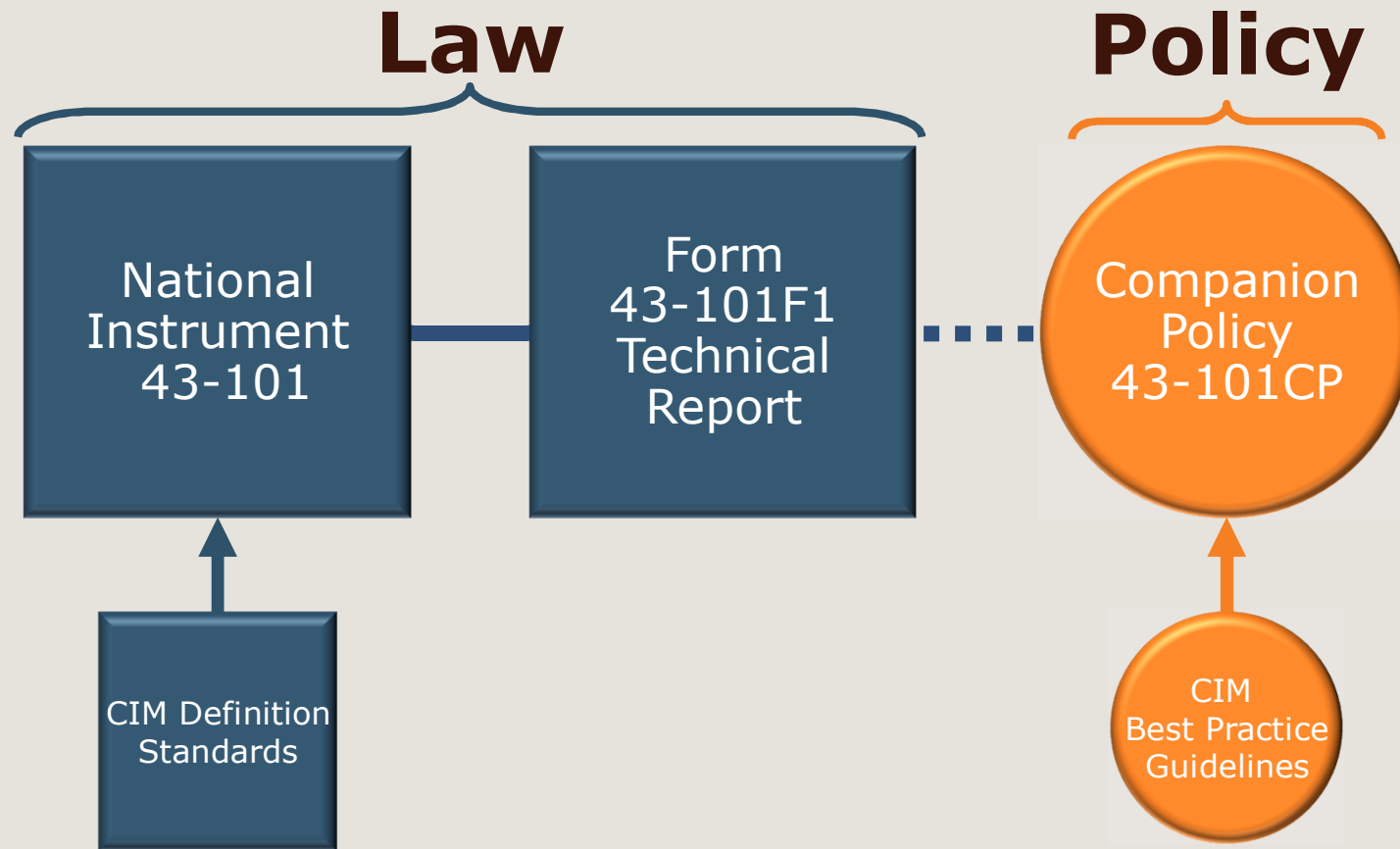
# Provincial Oversight of Mining Companies - 2015

*~8% fewer companies compared to 2014*



TSX, TSXV, NEX, CSE

# 3 Parts to NI 43-101 (aka the "Mining Rule")



Note: Revised May 10, 2014



# What Are the Core Principles of NI 43-101?



**Qualified  
Person**



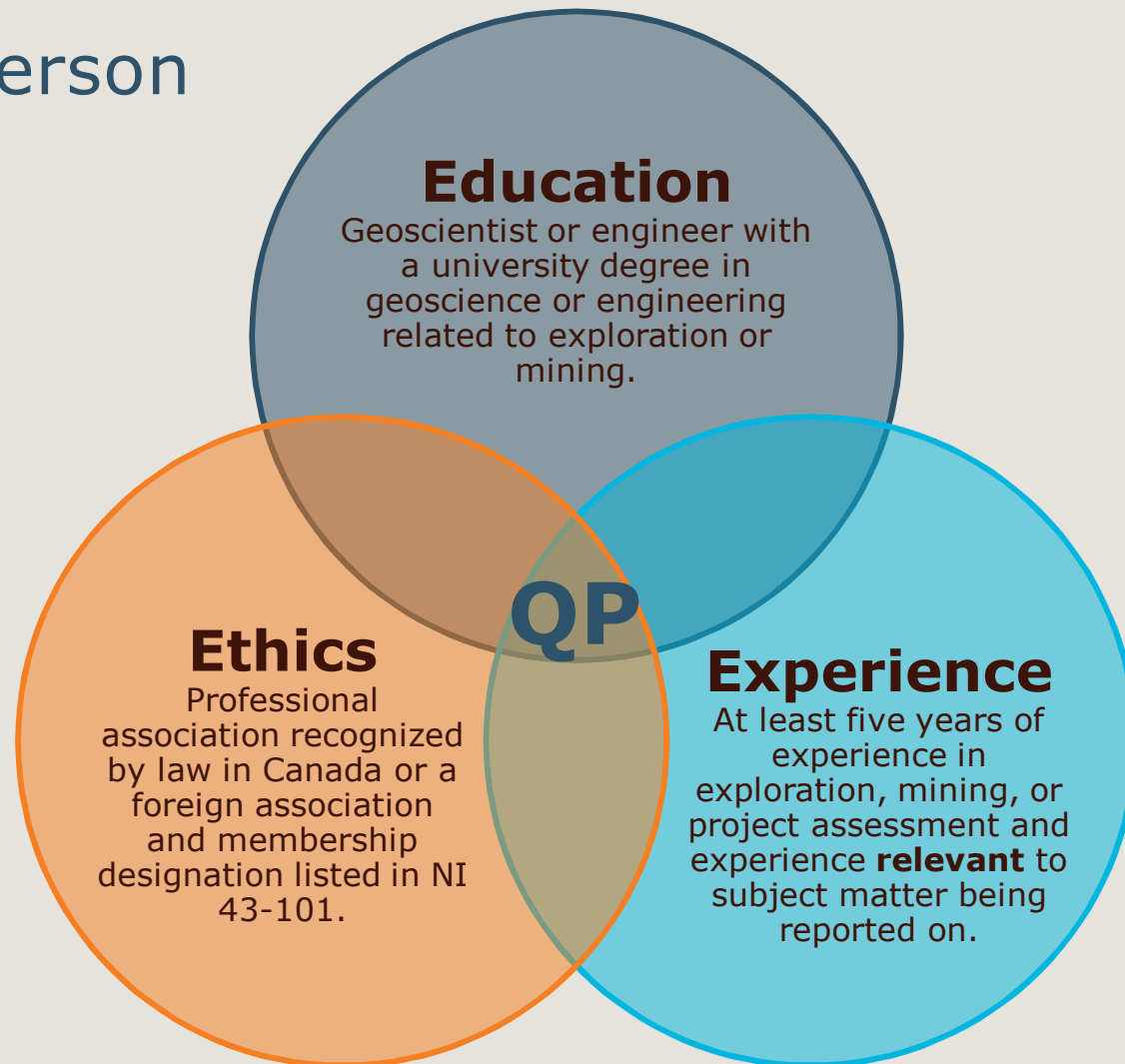
**Standards  
and  
Best Practices**



**Technical  
Report**

*Objective of NI 43-101 is to ensure that disclosure is based on reliable information, reflecting professional opinions, based on industry best practices and using standardized terms*

# 3 “E”s of a Qualified Person

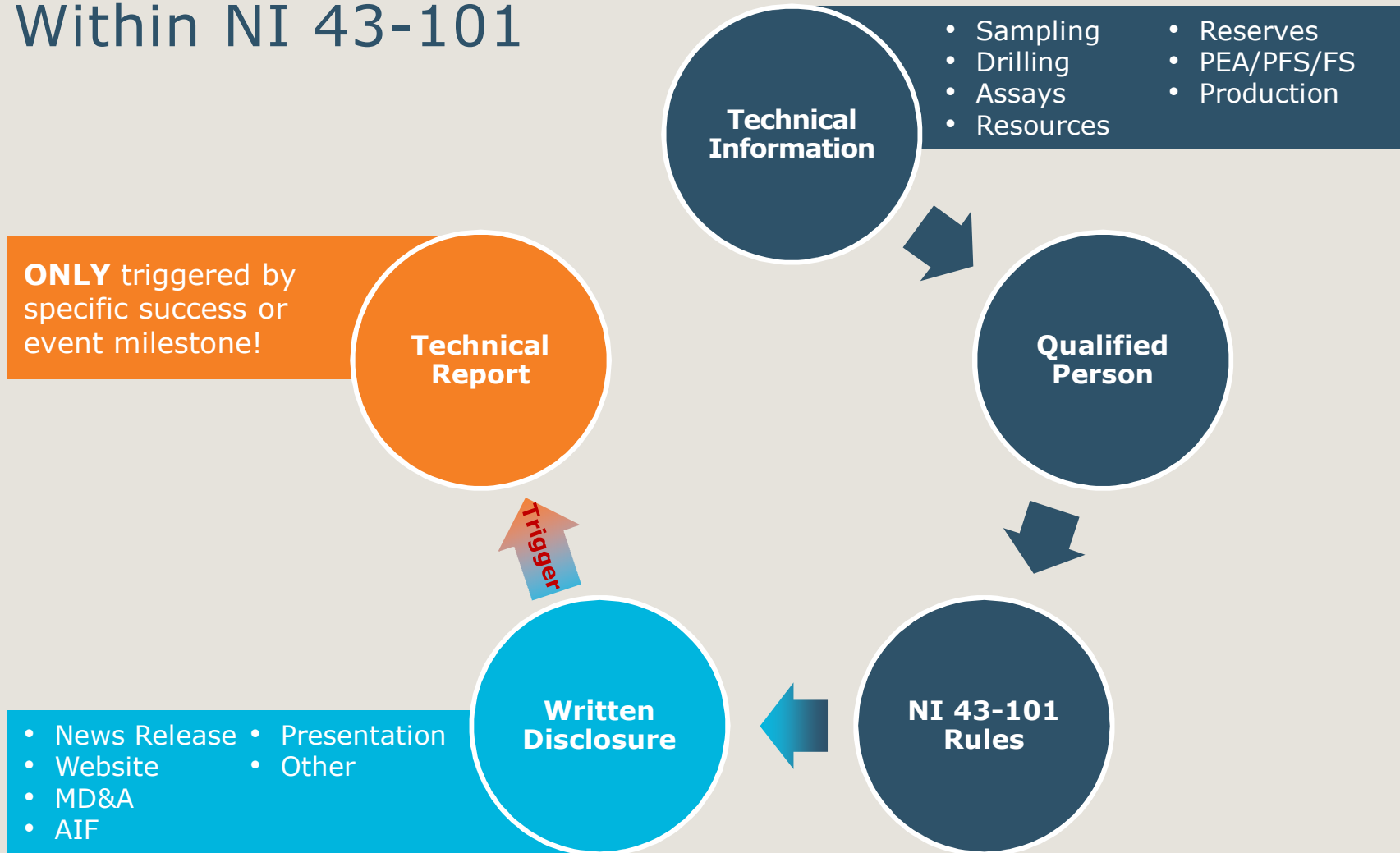


# Canadian Institute of Mining, Metallurgy and Petroleum (“CIM”)

- CIM Definition Standards
  - CIM Definition Standards for Mineral Resources and Mineral Reserves (**revised May 2014**)
- CIM Guidelines and Best Practices
  - CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (2003-2012)
  - CIM Best Practice Guidelines for Mineral Processing (2011)
  - CIM Guidelines for Reporting of Diamond Exploration Results (2003)
  - CIM Exploration Best Practice Guidelines (2000)
- Coal
  - GSC Paper 88-21: Standardized Coal Resource/Reserve Reporting System for Canada (1988)



# Flow of Technical Information Within NI 43-101



# NI 43-101: What It's Meant to Be

## **DISCLOSURE RULE**

- Requires that companies provide technical information that is:
  - Balanced and not misleading
  - Understandable to a reasonably informed investor
  - Consistent in its use of terms and definitions
  - Based on reasonable assumptions which are clearly explained
  - In a format that allows for comparing similar projects
  - Unbiased and identifies the potential risks and uncertainties
  - Signed off by a professional (QP) who takes responsibility for the information

# NI 43-101: What It's **NOT** Meant to Be

- It's not a guarantee of good work
  - It places an obligation on the company to have work done by a QP
  - The QP is supposed to do it right
- It's not a cookbook for mineral estimation
  - The rule sets disclosure standards, not estimation practices
  - It's designed so others can review and judge the QP's work
- It's not a vetting process at the regulatory agency
  - Just because a technical report is filed doesn't mean it's compliant
  - It's the company's responsibility to comply



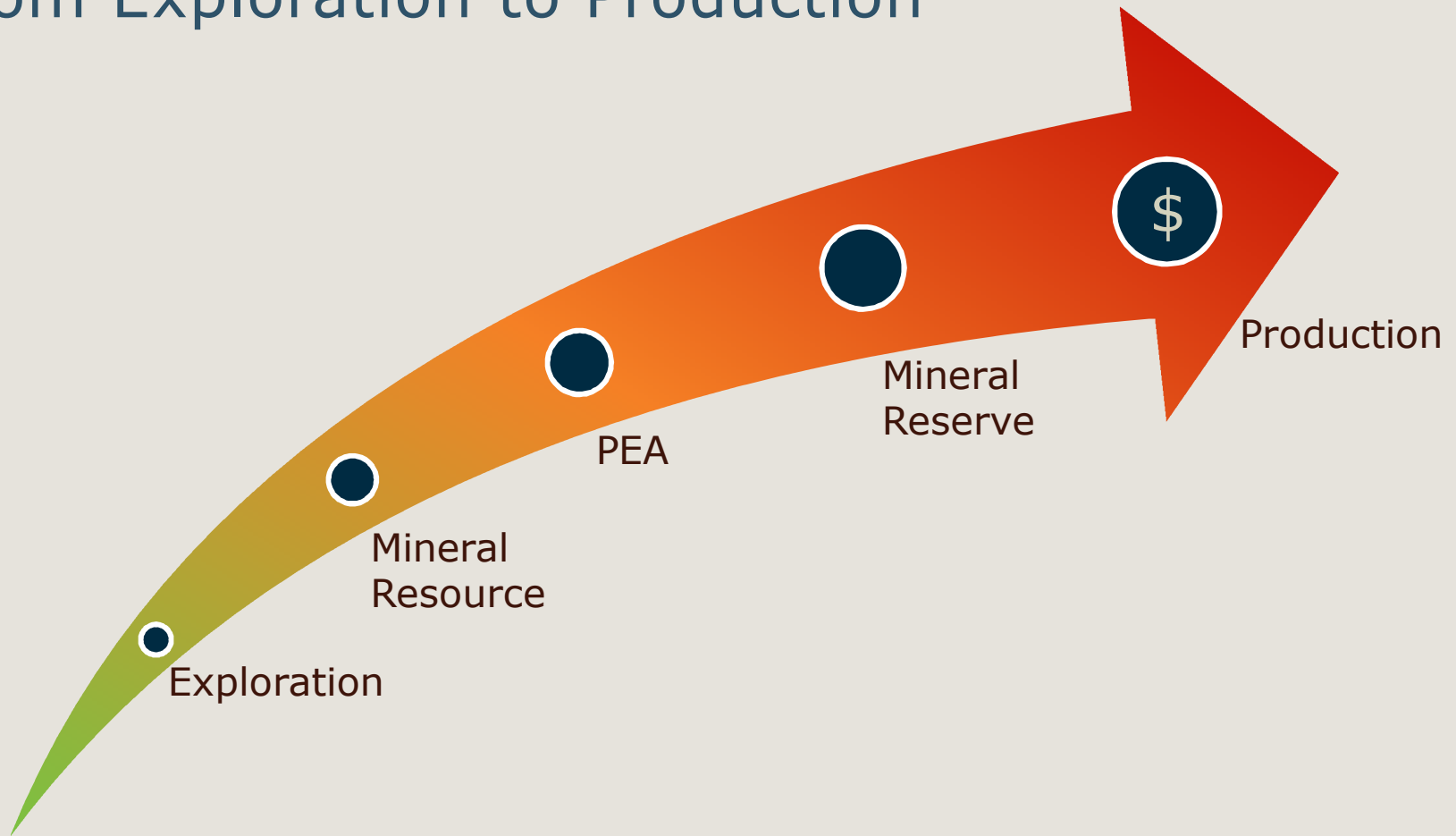
# NI 43-101

## Disclosure from Exploration to Production

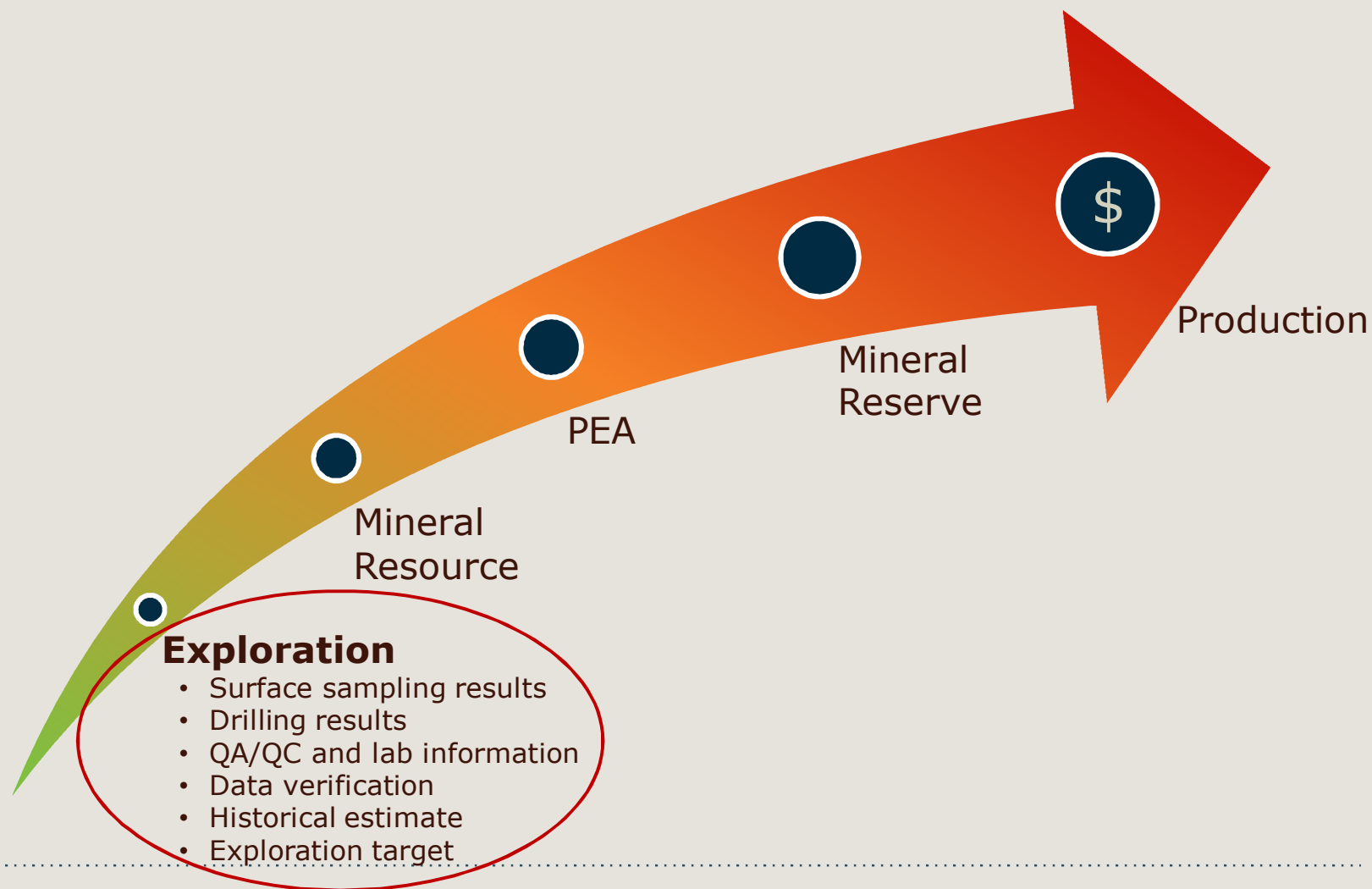




# Development Stages of a Mineral Project from Exploration to Production



# Exploration Stage Disclosure



# Surface Exploration Results Disclosure

- **Surface sampling** [s. 3.3]
  - Type of samples
  - Location of samples
  - Significant results and interpretation of results
  - QA/QC program applied
- **Lab information** [s. 3.3]
  - Analytical method and sample size
  - Name and location of lab and relationship to the company
- **Data verification** [s. 3.2]
  - Statement of how QP verified the data or reasons for any failure to verify

# Drilling Results Disclosure

- **Drilling information** [s. 3.3]
  - Type of drilling
  - Collar location, azimuth, and dip of drill holes
  - Relevant assays and depth of samples
  - Higher grade intervals within lower grade intersection
  - True widths of mineralization, if known
  - QA/QC program applied
- **Lab information** [s. 3.3]
  - Analytical method and sample size
  - Name and location of lab and relationship to the company
- **Data verification** [s. 3.2]
  - Statement of how QP verified the data or reasons for any failure to verify

# Exploration and Drilling Disclosure – Pitfalls

- ✘ Omitting drill hole location, azimuth, and dip information
- ✘ Not providing information about true widths
- ✘ No reporting higher grades within lower grade intersections
- ✘ Omitting the QA/QC program details
- ✘ Not naming the lab and relationship to the company
- ✘ Using overly promotional terms

**REMEMBER:** Use provisions of **s. 3.5 of NI 43-101** to refer to a previously filed document for data verification (s. 3.2) and exploration information (s. 3.3)

# Historical Estimate Disclosure

- **Disclosing a historical estimate** [s. 2.4]
  - Use the original terminology
  - Identify the source & date of historical estimate, including any technical report
  - Comment on relevance and reliability of the historical estimate
  - Provide key assumptions about how the historical estimate was prepared
  - State whether or not historical estimate uses CIM categories
  - Comment on work program needed to upgrade or verify the historical estimate
  - State with equal prominence the following:
    - *QP has not done sufficient work to classify historical estimate as a current resource*
    - *Company is not treating the historical estimate as a current resource*

# Historical Estimate Disclosure – Pitfalls

- ✘ No source and date for the historical estimate
- ✘ Lack of cautionary language
- ✘ Using terms such as “non-43-101 estimate”
- ✘ Not providing feedback on the work required to verify the estimate
- ✘ Recalculating an estimate as a new historical estimate
- ✘ Disclosing an economic analysis based on a historical estimate

# Exploration Target Disclosure

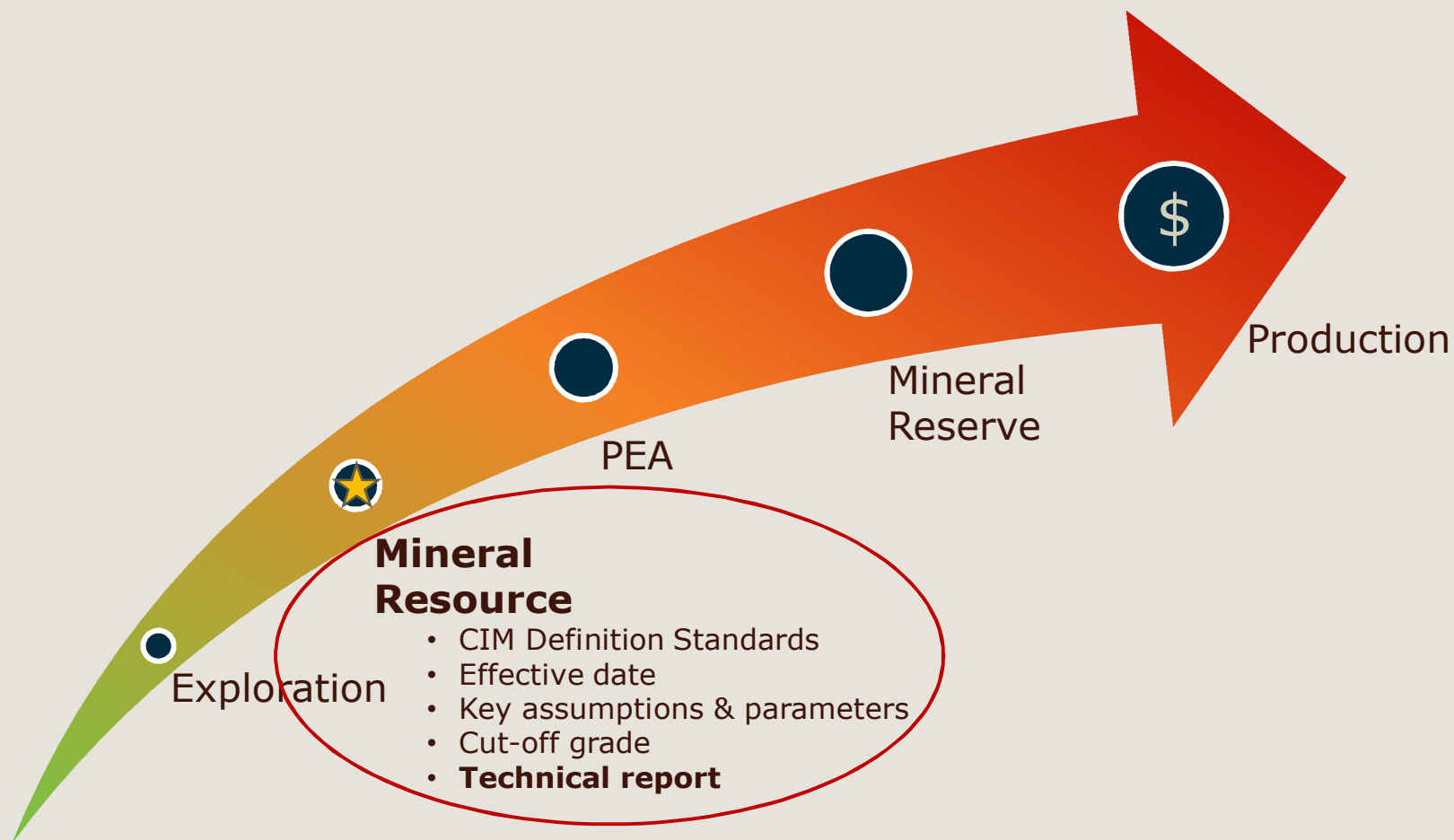
- **Disclosing an exploration target** [s. 2.3(2)]
  - Provide a range of tonnes and grade
  - States with equal prominence the following:
    - *Potential quantity and grade is conceptual in nature*
    - *Insufficient exploration to define a mineral resource*
    - *Uncertain if a mineral resource estimate will be delineated*
  - Provide the basis on which exploration target has been determined




# Exploration Target Disclosure – Pitfalls

- ✘ Not providing ranges of tonnes and grade
- ✘ Lack of cautionary language
- ✘ Not providing the basis for the exploration target
- ✘ Reporting an unrealistic and untestable exploration target
- ✘ Creating a block model, with a cut-off grade, but not disclosing it as a mineral resource estimate
- ✘ Disclosing an economic analysis based on an exploration target

# Mineral Resource Stage Disclosure



 Technical report "success or revision" trigger

# Mineral Resource

- **Definition of a mineral resource** [CIM Definition Standards - May 2014]
  - Concentration or occurrence of solid material of economic interest in or on the Earth's crust
  - Form, grade or quality, and quantity is such that it has **reasonable prospects for eventual economic extraction**
  - Location, quantity, grade or quality, continuity and other geological characteristics are known, estimated or interpreted from specific geological evidence and knowledge, including sampling

# Mineral Resource Disclosure

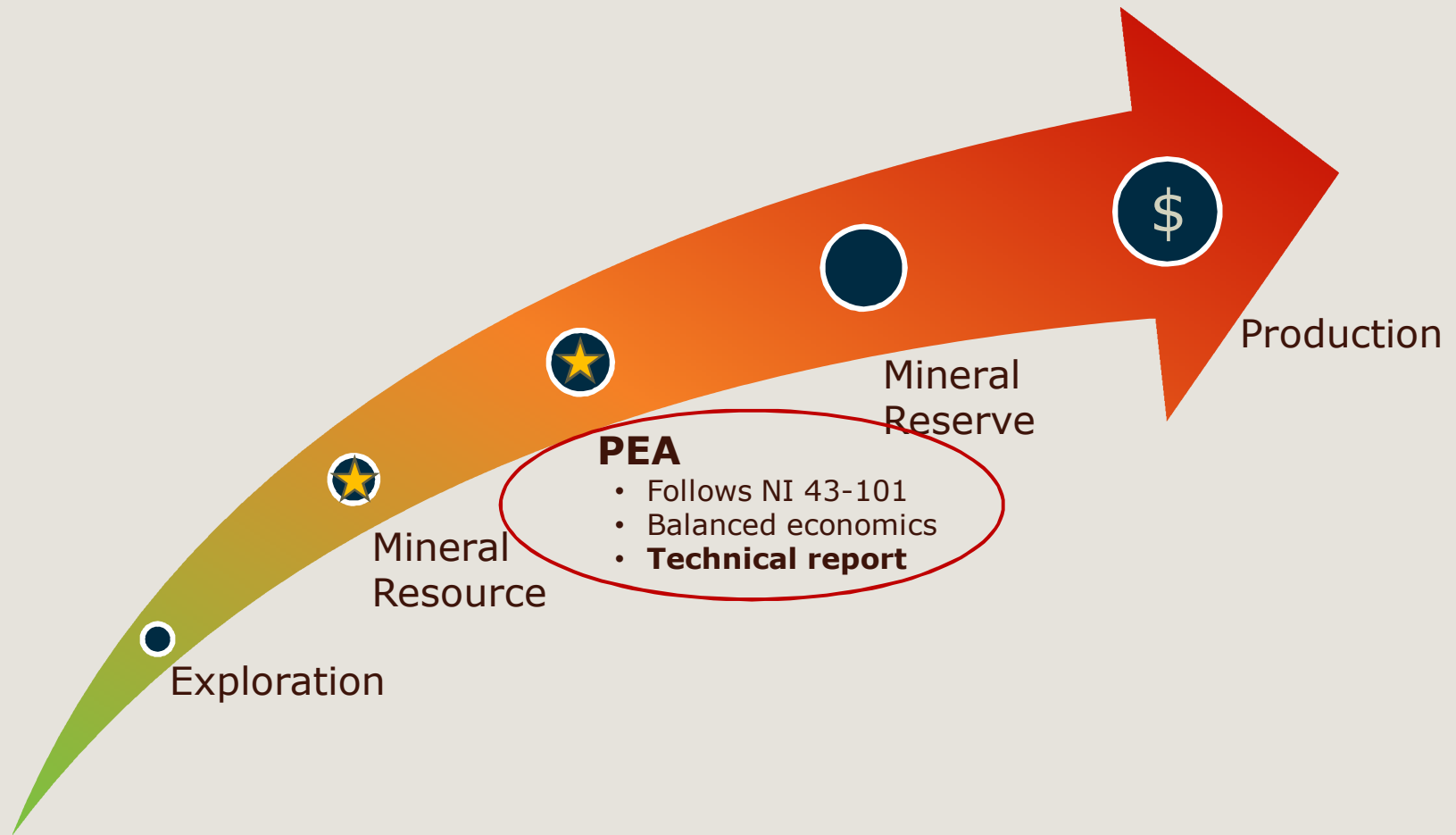
## **Disclosing a mineral resource** [s. 2.2] and [s. 3.4]

- When disclosing a mineral reserve include:
  - CIM categories of mineral resources (inferred, indicated, and measured resources)
  - Quantity and grade of each resource category
  - Inferred resources reported separately from to other categories
  - Tonnes and grade for each category if the contained metal is disclosed
  - Effective date of the resource estimate
  - Key assumptions, parameters, and methods used
  - Any known risks that could materially affect potential development
  - Statement that "*mineral resources that are not mineral reserves do not have demonstrated economic viability*" if results of an economic analysis of resources is disclosed

# Mineral Resource Disclosure – Pitfalls

- ✘ Not reporting the cut-off grade
- ✘ Not disclosing how the cut-off grade was determined (*i.e.* key assumptions)
- ✘ No effective date
- ✘ Metal equivalents missing the required breakdown of each metal
- ✘ Adding inferred resources to other categories
- ✘ Reporting contained metal only
- ✘ Not providing the CIM categories for the estimate
- ✘ Reporting an “unconstrained” resource estimate (*i.e.* mineral inventory)
- ✘ Not following CIM Best Practice Guidelines
- ✘ Not disclosing the resource “quality” (coal, industrial minerals)
- ✘ Accidentally disclosing a PEA triggering a supporting technical report

# Preliminary Economic Assessment Stage



★ Technical report "success or revision" trigger

# Preliminary Economic Assessment

- **Definition of a “preliminary economic assessment”** [s. 1.1]
  - Means a study, other than a pre-feasibility or feasibility study, that includes an economic analysis of the potential viability of mineral resources
- **Guidance about a PEA** [s. 1.1(4) of 43-101CP]
  - PEA can include a study commonly referred to as a scoping study
  - PEA can be based on measured, indicated, or inferred mineral resources, or a combination of any of these
  - PEA disclosure includes forecast production rates, capital costs, operating costs, projected cash flows, etc.

## *Appropriate uses of a PEA*

- *Road map for planning and strategic decision making*
- *Preparing for a prefeasibility study*
- *Public disclosure to raise capital and advance the project*

# Types of Technical and Economic Studies

Criteria	Technical & Economic Studies		
Type of Study	Preliminary Economic Assessment (PEA)	Prefeasibility Study (PFS)	Feasibility Study (FS)
Concept	"What it <u>could</u> be"	"What it <u>should</u> be"	"What it <u>will</u> be"
Objective	Early stage conceptual assessment of the <u>potential economic viability</u> of mineral resources	Realistic economic and engineering studies sufficient to <u>demonstrate economic viability</u> and establish mineral reserves	Detailed study of how the mine will be built, used as the basis for a <u>production decision</u>
Cost Accuracy	+/- 50%	+/- 25%	+/- 15%
Engineering	<5%	<20%	<50%
Mineral Estimate Inputs	Inferred/Indicated/Measured Resources	Indicated & Measured Resources	
Mineral Estimate Outputs	Inferred/Indicated/Measured Resources	Probable & Proven Reserves	

*Caution: Generalized for presentation purposes*



# Preliminary Economic Assessment Disclosure

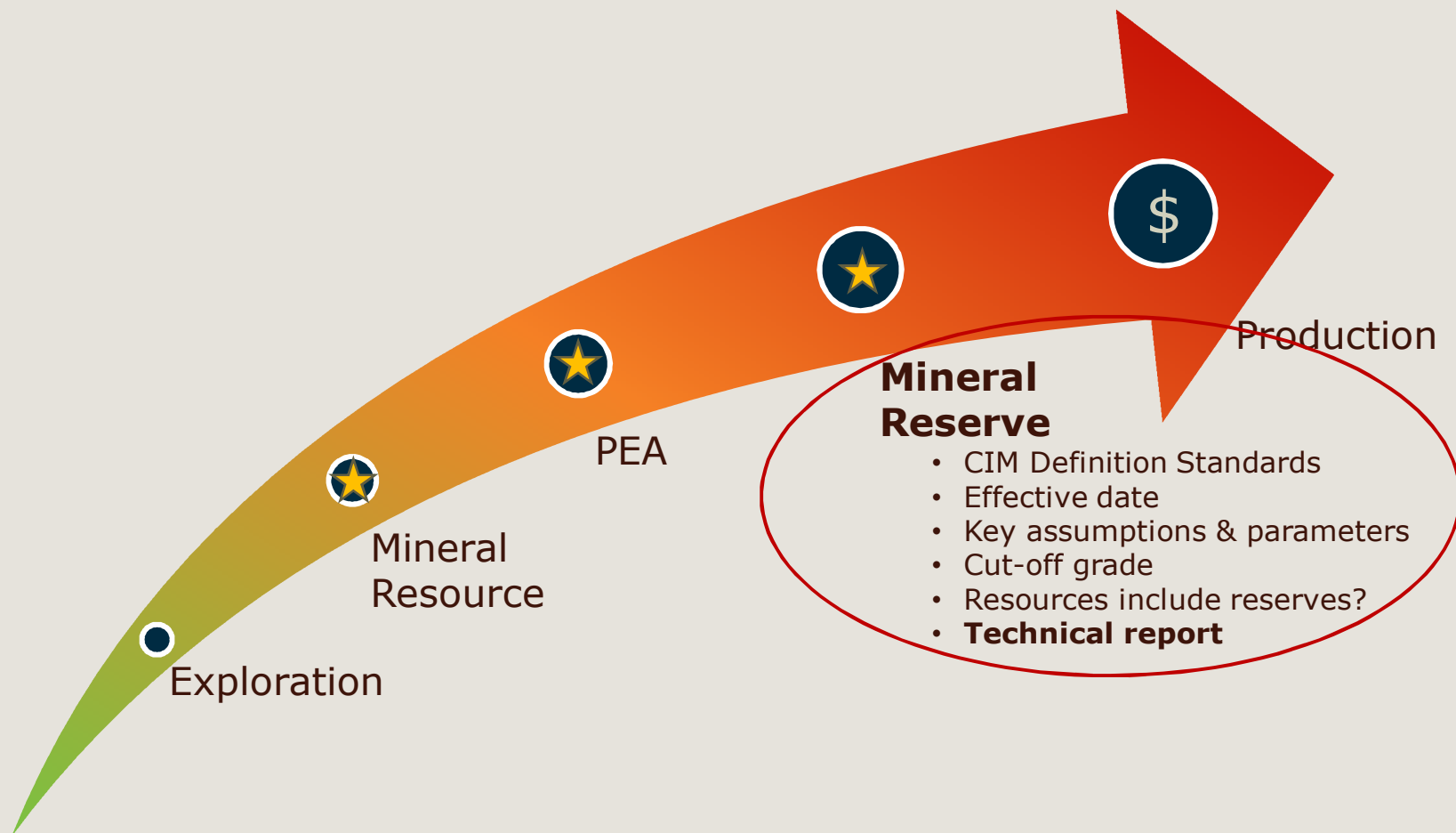
## Disclosing a PEA [s. 2.3(3)]

- May disclose the results of a PEA that includes inferred resources if the disclosure states with equal prominence:
  - *PEA is preliminary in nature*
  - *Includes inferred resources that are too speculative geologically to have the economic considerations applied to them*
  - *No certainty that the PEA will be realized*
- Also:
  - States the basis and assumptions for the PEA
  - Describes the impact of the PEA on any prefeasibility or feasibility study

# PEA Disclosure – Pitfalls

- ✘ Lack of cautionary language
- ✘ Reporting only pre-tax or undiscounted economic outcomes
- ✘ Using the term “ore” or “mineable”
- ✘ Implying that technical and economic viability has been demonstrated
- ✘ Is it really a PEA level study?
- ✘ Mixing results of a PEA including inferred resources with mineral reserves

# Mineral Reserve Stage Disclosure



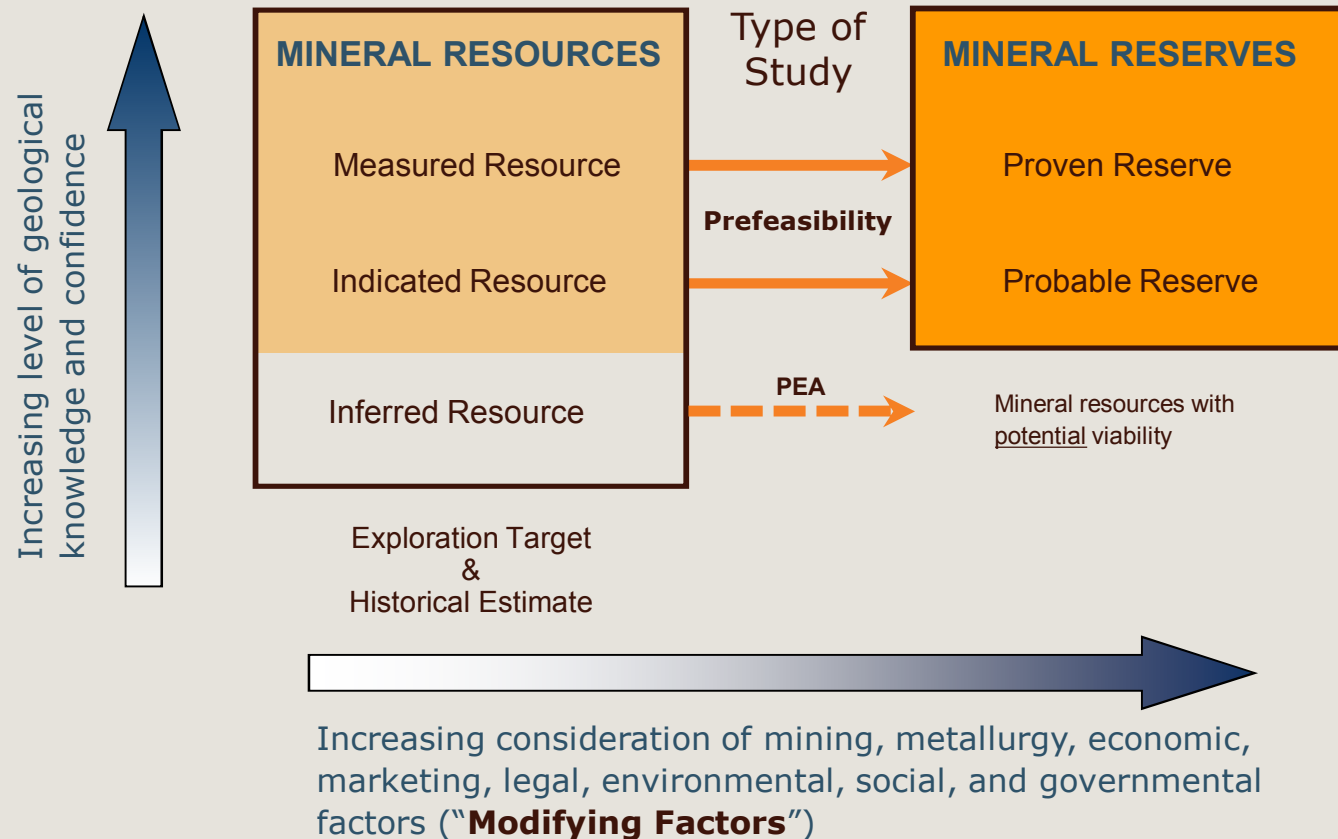
★ Technical report “success or revision” trigger

# Mineral Reserve

- **Definition of a mineral reserve** [CIM Definition Standards - May 2014]
  - Economically mineable part of a **measured and/or indicated** mineral resource
  - Includes diluting materials and allowances for losses which may occur during mining
  - Reserves are defined by studies at **prefeasibility or feasibility** level that demonstrate at the time of reporting extraction could be justified

# Converting Resources to Reserves

- Modifying factors are used to convert mineral resources to mineral reserves



# Mineral Reserve Disclosure

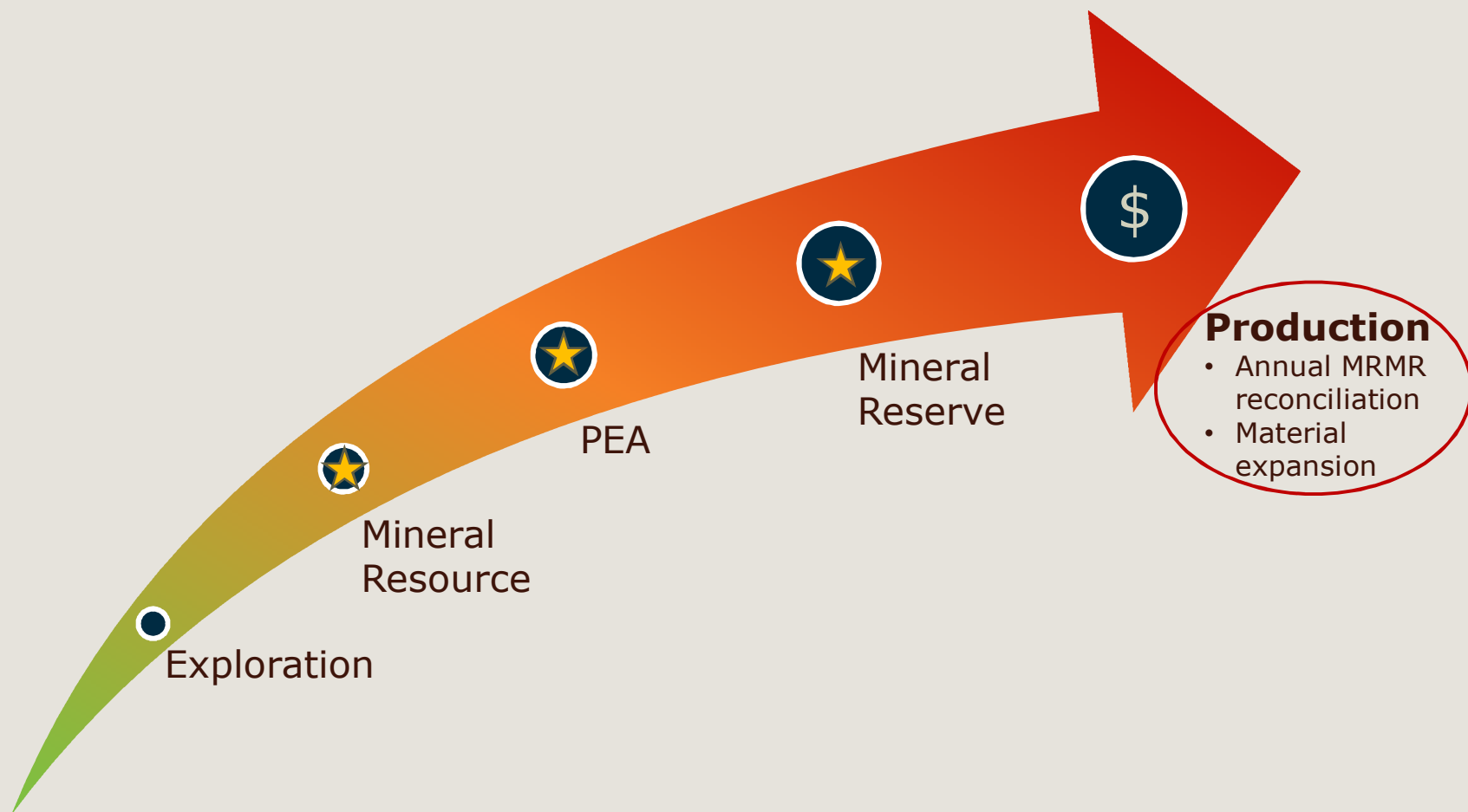
## **Disclosing a mineral reserve** [s. 2.2] and [s. 3.4]

- When disclosing a mineral reserve include:
  - CIM categories of mineral reserves (proven and probable reserves)
  - Quantity and grade of each reserve category
  - Effective date of the reserve estimate
  - Key assumptions, parameters, and methods used
  - Any known risks that could materially affect potential development
  - Statement whether reserves are included or excluded from resource estimate
  - Statement that "*mineral resources that are not mineral reserves do not have demonstrated economic viability*" if results of an economic analysis of resources is disclosed

# Mineral Reserve Disclosure – Pitfalls

- ✘ Not reporting the cut-off grade
- ✘ Lack of disclosing the key assumptions
- ✘ No effective date
- ✘ No statement whether resource estimate includes or excludes reserves
- ✘ Metal equivalents missing the required breakdown of each metal
- ✘ Reporting contained metal only
- ✘ Not providing the CIM categories for the estimate
- ✘ Not demonstrating mineral reserves based on a prefeasibility study

# Production Stage Disclosure



★ Technical report “success or revision” trigger



# Annual Resource & Reserve Estimates - Updates and Reconciliation

- Annual Information Form (AIF) requires disclosure of mineral resource and reserve estimates as at the company's financial year end
- Projects in production
  - Provide an annual update of resource and reserve estimates
  - Outdated estimates in the AIF is in default of NI 51-102
  - Good disclosure should also include reconciliation to the previous year's estimates (reflecting production, additions, and revisions)
  - Annual estimates from a producing mine do not trigger a new technical report [see 43-101CP s. 4.2(10)]
- Projects not in production
  - AIF discloses the most recent resource and reserve estimates, with their effective date

# Changes to AIF in Form 51-102F2

(June 30, 2015)

Before June 30, 2015	After June 30, 2015
<p><b>Item 5.4 Companies with Mineral Projects</b></p> <ul style="list-style-type: none"> <li>(1) Project Description and Location</li> <li>(2) Access, Climate, Infrastructure and Physiography</li> <li>(3) History</li> <li>(4) Geological Setting</li> <li>(5) Exploration</li> <li>(6) Mineralization</li> <li>(7) Drilling</li> <li>(8) Sampling and Analysis</li> <li>(9) Security of Samples</li> <li>(10) Mineral Resource and Mineral Reserve Estimates</li> <li>(11) Mining Operations</li> <li>(12) Exploration and Development</li> </ul>	<p><b>Item 5.4 Companies with Mineral Projects</b></p> <ul style="list-style-type: none"> <li><b>(1) Current Technical Report</b></li> <li><b>(2) Project Description, Location, and Access</b></li> <li>(3) History</li> <li><b>(4) Geological Setting, Mineralization, Deposit Types</b></li> <li>(5) Exploration</li> <li>(6) Drilling</li> <li><b>(7) Sampling, Analysis, and Data Verification</b></li> <li><b>(8) Mineral Processing and Metallurgical Testing</b></li> <li>(9) Mineral Resource and Mineral Reserve Estimates</li> <li>(10) Mining Operations</li> <li><b>(11) Processing and Recovery Operations</b></li> <li><b>(12) Infrastructure, Permitting, Compliance Activities</b></li> <li><b>(13) Capital and Operating Costs</b></li> <li><b>(14) Exploration, Development, and Production</b></li> </ul>

**New Item**

**Modified Item**

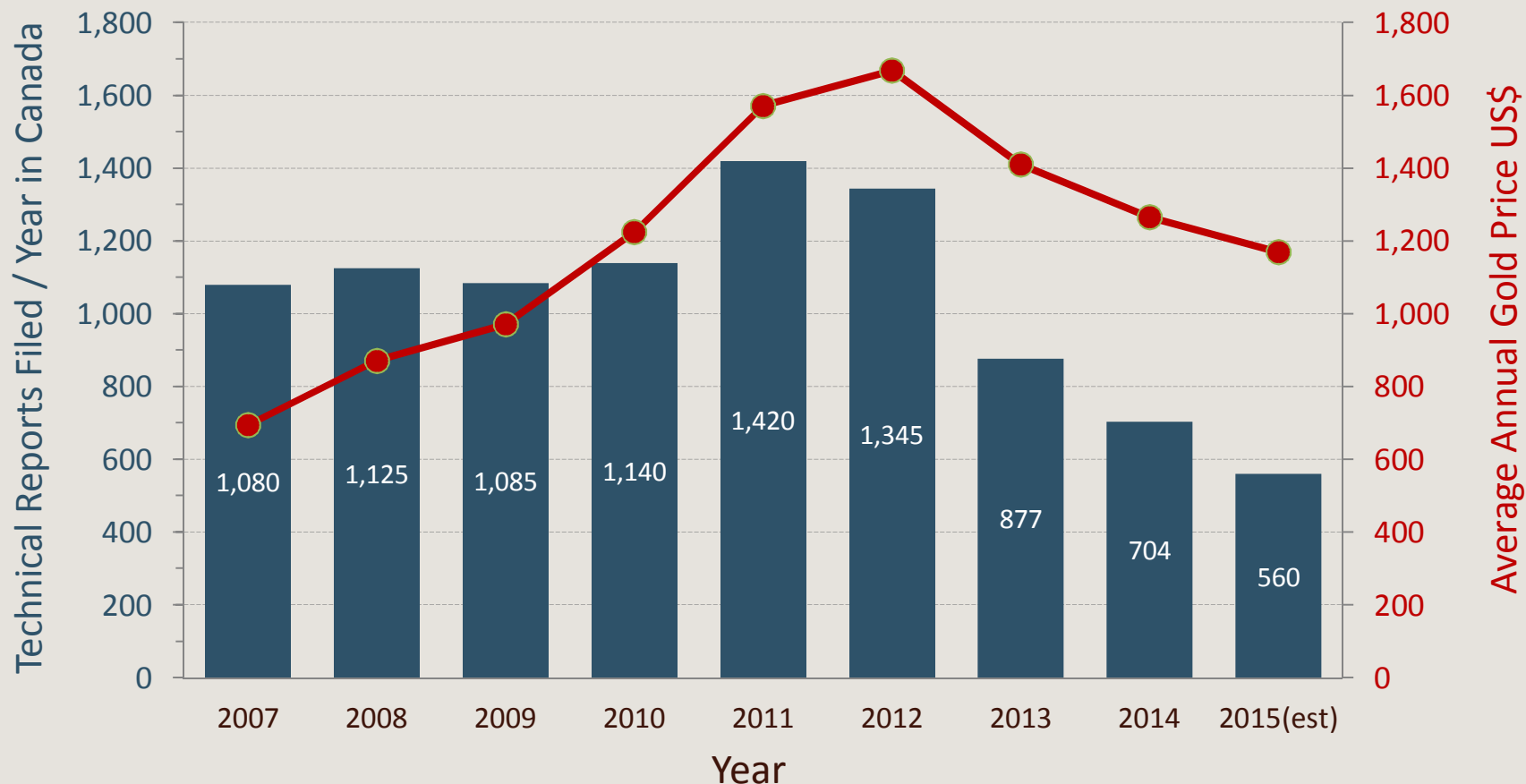


# Technical Report

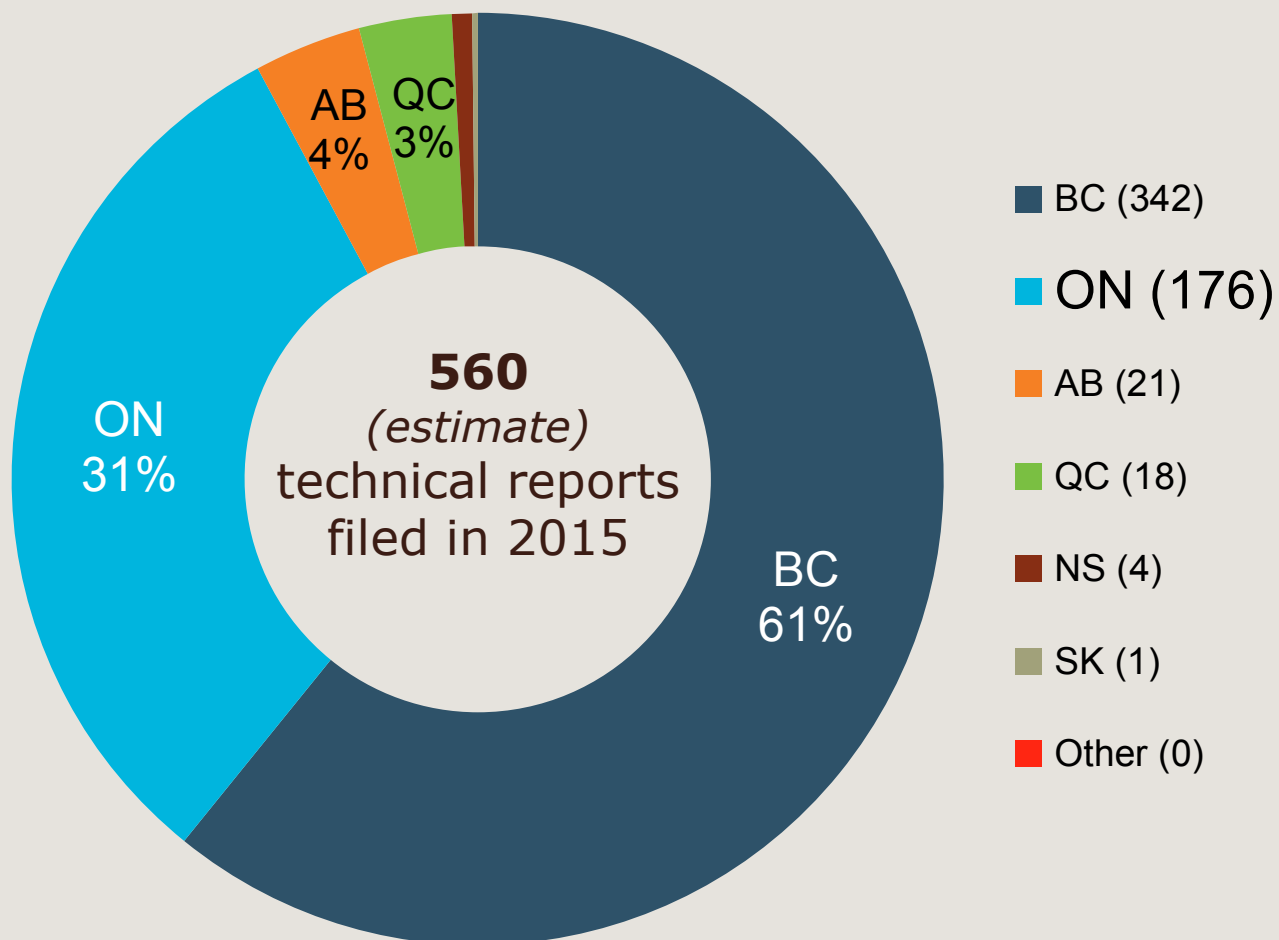
## Basics

# Technical Reports Filed Per Year (2007 – 2015est)

2011 to 2015  $\longrightarrow$  60% fewer technical reports



# Technical Reports Filed in 2015 by Jurisdiction



# 5 “W”s (and 1 “H”) of Technical Reports

## **WHO**

Prepared by QPs, often independent of the company and property

## **WHAT**

Current summary of material technical information on a material property

## **WHEN**

Triggered by milestone events and filed within a specific timeframe

## **WHERE**

Filed publically on SEDAR

## **WHY**

Supports a company’s technical disclosure and assists investor’s decisions

## **HOW**

Must follow prescribed Form 43-101F1 and requirements of NI 43-101

# "Milestones" Trigger Technical Reports

## Property Milestones

- 1<sup>st</sup> time disclosure of:
  - Mineral resource
  - Preliminary economic assessment
  - Mineral reserve
- Material change to previous
  - Mineral resource
  - Preliminary economic assessment
  - Mineral reserve

***"Success or revision driven triggers"***

## Company Milestones

- 1<sup>st</sup> time reporting in Canada
- Filing of any of the following\*:
  - Preliminary (long form) prospectus
  - Preliminary short form prospectus
    - (1<sup>st</sup> time or material change to MR/PEA/MR)
  - Information or proxy circular
  - Offering memorandum
  - Rights offering circular
  - Annual information form
  - Valuation
  - TSX Venture offering document
  - Take-over bid circular

\*(where material technical information is **not** already supported by a current technical report)

***"Event driven triggers"***

# Independent Technical Reports

- **ALL** QPs signing the technical report must be independent for the following triggers:
  - First-time reporting issuer in Canada
  - Preliminary long form prospectus
  - 1st time disclosure of a mineral resource, PEA, or mineral reserve
  - >100% change to existing mineral resource or mineral reserve
- Exemption from independence for "producing issuers"
  - Gross revenue > \$30 million in recent fiscal year; and
  - Gross revenue > \$90 million in last three fiscal years





# Mineral Property with Multiple Deposits

## Can a company file separate technical reports for different deposits on the same mineral property?

- **No** (generally)
- Companion Policy says:
  - 1.1(6) - a property includes claims that are contiguous or in close proximity that any underlying deposits would likely be developed using **common infrastructure**
  - 4.2(8) - a technical report when filed must be complete and current and there should only be one current technical report on a property at any point in time

Determination generally depends upon:

- Stage of development of the various deposits
- Existing infrastructure (*i.e.* central mill)
- How the company is reporting the potential development of the deposits

# Technical Reports – Practical Tips for QPs

- Make sure you have “relevant experience”
- Know the intended purpose of the technical report (*i.e.* triggering event)
- Use a checklist based on the disclosure requirements
- Setup a basic template for the technical report
- Write a concise summary
- Clearly state the risks and uncertainties
- Have the draft technical report peer reviewed



# MD&A Review of Mining Issuers

## OSC Staff Notice 51-722

February 6, 2014

# Scope of Review

- 100 MD&As by mining companies based in Ontario
- Each with a market capitalization <\$100 million
- Exchange listing
  - 54% on TSXV or CSE
  - 46% on TSX
- Development stage
  - 23% exploration stage
  - 53% resource stage
  - 9% reserve stage
  - 15% production stage

# Results of Review - Areas for Improvement

- Venture issuer disclosure
  - Lack of a breakdown of material components of exploration and evaluation (E&E) assets or expenditures and plans for the project
  - Failure to discuss and itemize exploration expenditures
- Liquidity and capital resources
  - Companies with working capital deficiency did not discuss potential sources of funding
- Related party transactions
  - Failure to disclose identity of the related party involved in the transaction
- Risk factors and uncertainties
  - Limited disclosure of company and project specific risks

# Mineral Project Disclosure in the MD&A

- Venture issuers not filing an AIF should use the MD&A to describe their material mineral projects, and provide the following information:
  - Project description
    - Location, access, property tenure
    - Geological setting and mineral deposits or potential of interest
    - Results of exploration work to date
    - Information required under Part 3 of NI 43-101 – which you can then refer to in later filings to comply with Part 3
    - Name of the QP approving the disclosure
  - Work completed and expenditures made
  - Current status of project plans and budgets
  - How those expenditures match the timing and cost for the project's milestones



# Website Investor Presentations

## CSA Staff Notice 43-309

April 9, 2015

# Scope of Review

- 130 website investor presentations
  - BC, Ontario and Quebec mining companies
  - Pre-production stage companies
- Exchange listing
  - 78% on TSXV or CSE
  - 22% on TSX
- Development stage
  - 38% exploration stage
  - 19% resource stage
  - 26% PEA stage
  - 17% reserve stage



# Results of Review – Areas for Improvement

- Naming the qualified person
  - Review of technical information by a QP directly improves disclosure compliance
- Preliminary economic assessments
  - Providing cautionary statements ensures understanding of the study's limitations
- Mineral resources and mineral reserves
  - Stating whether resources include or exclude reserves avoids misleading disclosure
- Exploration targets
  - Expressing as a range with cautionary statements shows the targets limitations
- Historical estimates
  - Providing the source, date, and cautionary statements show the estimate's context

# Summary: How to Improve Your Compliance

**C**  
**REGULATIONS**  
**M**  
**COMPANION POLICIES**  
**L**  
**STAFF NOTICES**  
**A**  
**CIM STANDARDS**  
**C**  
**CIM BEST PRACTICES**

# Thank You!

**Craig Waldie**  
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# Key Staff Notices

<b>Date</b>	<b>Topic</b>	<b>Reference</b>
Jul 22, 2011	Mineral Brines	OSC Staff Notice 43-704 <i>Mineral Brine Projects and NI 43-101</i>
Aug 16, 2012	Preliminary Economic Assessments	CSA Staff Notice 43-307 <i>Mining Technical Reports – Preliminary Economic Assessments</i>
Nov 9, 2012	Emerging Markets	OSC Staff Notice 51-720 <i>Issuer Guide for Companies Operating in Emerging Markets</i>
Feb 21, 2013	Foreign Professional Associations	CSA Staff Notice 43-308 (Revised) <i>Professional Associations under NI 43-101</i>
Jun 13, 2013	Forward Looking Information	CSA Staff Notice 51-721 <i>Forward Looking Information Disclosure</i>
Jun 27, 2013	Technical Reports	OSC Staff Notice 43-705 <i>Report on Staff’s Review of Technical Reports by Ontario Mining Issuers</i>
Dec 11, 2013	Non-GAAP Financial Measures	OSC Staff Notice 52-722 <i>Report on Staff’s Review of Non-GAAP Financial Measures and Additional GAAP Measures</i>
Feb 6, 2014	Mining MD&A	OSC Staff Notice 51-722 <i>Report on a Review of Mining Issuers’ Management Discussion and Analysis and Guidance</i>
Mar 31, 2015	Continuous Disclosure Reviews	CSA Staff Notice 51-344 <i>Continuous Disclosure Review Program Activities for the fiscal year ended March 31, 2015</i>
Apr 9, 2015	Website Investor Presentations	CSA Staff Notice 43-309 <i>Review of Website Investor Presentations by Mining Issuers</i>