

# RESOURCE/RESERVE REPORTING STANDARDS FOR MINERALS

Presentation to the International Accounting Standards Board in London by video link from Melbourne.

On behalf of the IASB Extractive Activities Project Team 19 April 2005

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# Outline

- Background (types of mineral deposits etc)
- What is a Mineral Resource and an Ore Reserve?
- JORC Code and other national/international reporting standards
- Who prepares the estimates (the “Competent Person” concept)
- Uses of Mineral Resource and Ore Reserve estimates
- Current Mineral Resource/Ore Reserve reporting practice in major jurisdictions
- Current and future developments

# Minerals Presentation

## BACKGROUND

# Minerals Include

- Metalliferous minerals – e.g. gold, silver, copper, lead, zinc, iron, aluminium, tungsten, uranium, mineral sands
- Non-metalliferous minerals – e.g. coal, phosphate, diamond, other gemstones
- Industrial and construction materials – e.g. sand, gravel, granite, limestone, kaolin

# Types of Mineral Deposits

## Mineral deposits can range from:

- Large scale (billions of tonnes) to small scale (hundreds of tonnes)
- Continuous to erratic distribution of mineralisation
- High grade to low grade
- Very deep (>2-3km) to at surface

# Types of Mineral Deposits

- The larger scale and less erratic the deposit, the wider the drillhole spacing required to confidently estimate resources and reserves, e.g.
  - Large coal deposits – drillholes may be spaced up to several kilometers apart
  - Small, very erratic gold deposits – drillholes may be spaced 10-15m apart

# Mining Methods

- Surface mining (e.g. open cut, strip mining, quarry)
- Underground mining (e.g. block caving, open stoping, cut-and-fill, hand-held)
- In situ leaching

# Minerals Presentation

**WHAT IS A MINERAL RESOURCE  
AND AN ORE RESERVE?**

# What is a Mineral Resource?

- A *Mineral Resource* is an estimate of tonnage and grade for a mineralised body, based on sampling of that body
- The estimate represents a realistic inventory that, under assumed and justifiable technical and economic conditions, might, in whole or in part, become economically extractable
- Portions of a deposit that do not have reasonable prospects for eventual economic extraction are **NOT** Mineral Resources

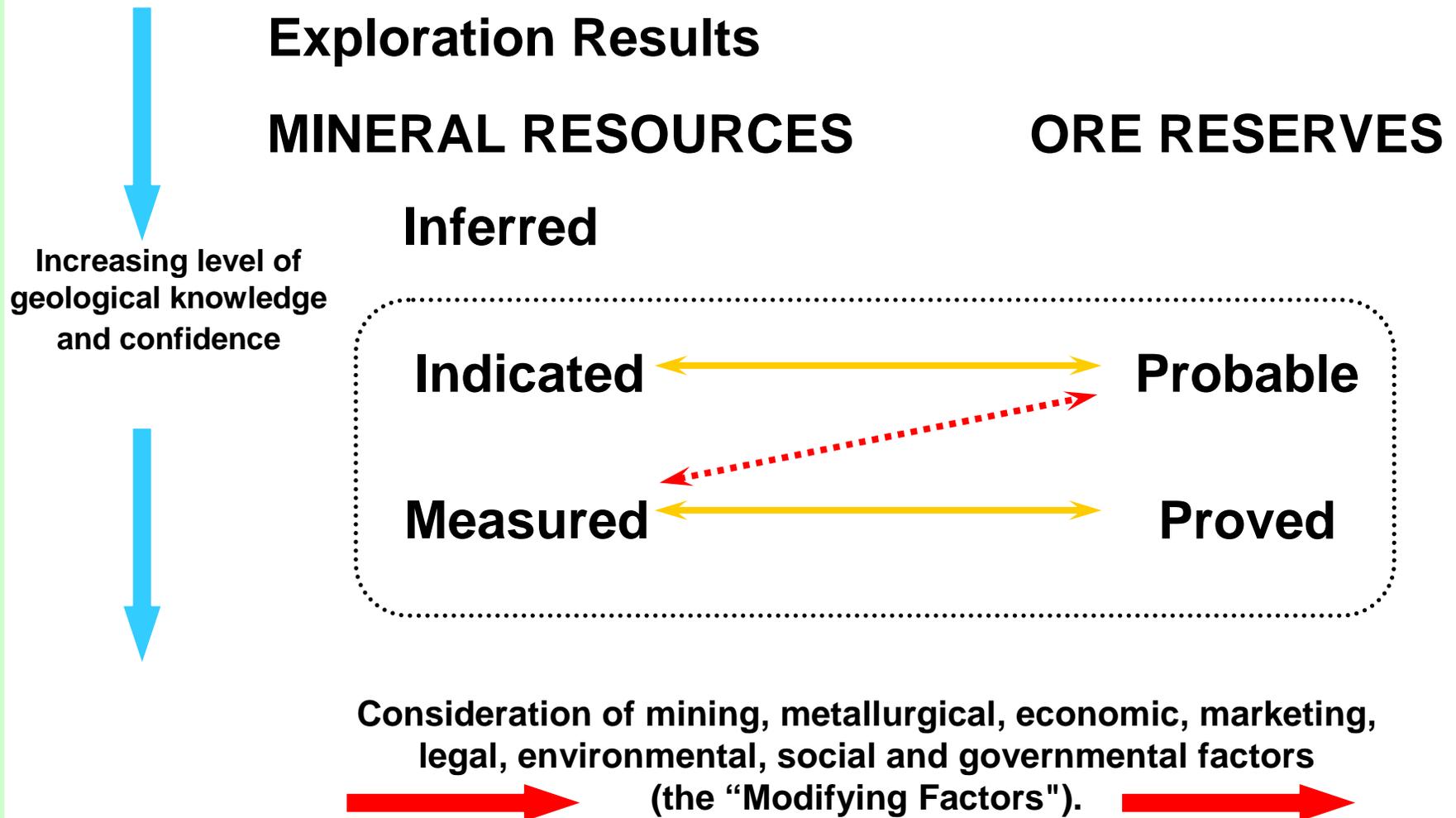
# What is an Ore (Mineral) Reserve?

- An *Ore Reserve* is an estimate of the tonnage and grade that is expected to be delivered to the mill or treatment plant
- It is the economically mineable part of a Mineral Resource
- Realistically assumed Modifying Factors (mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors) must be taken into consideration

# Important Points about Mineral Resource and Ore Reserve Estimates

- Resource estimates are **ESTIMATES**, not calculations. New information or a different geological interpretation can materially change estimates
- There is no single correct resource or reserve estimate for a given deposit (see later “Fish” diagram)

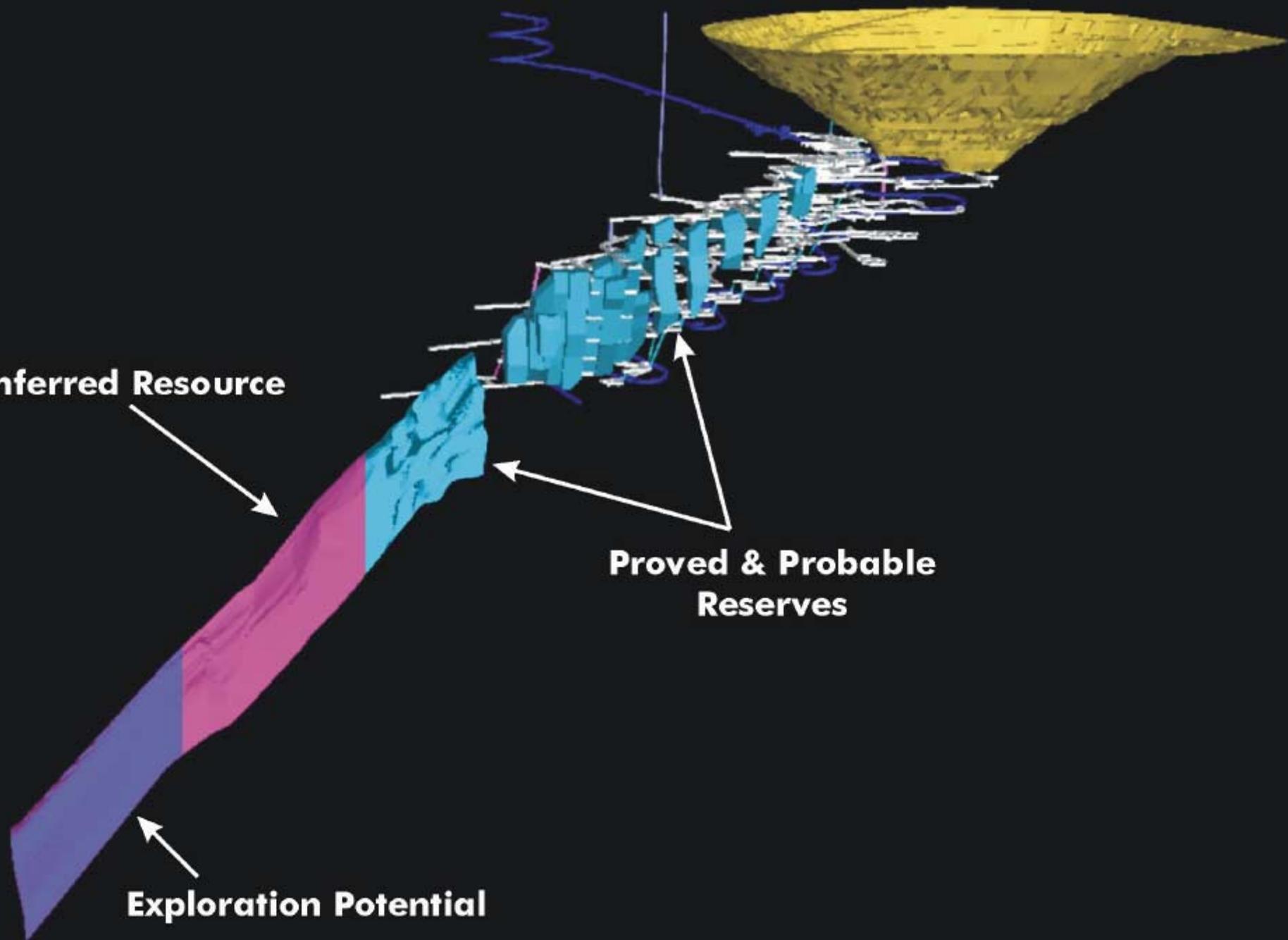
# Relationship between Mineral Resources and Ore Reserves



**Inferred Resource**

**Proved & Probable Reserves**

**Exploration Potential**



# Mineral Resource Estimation

## Requirements for estimating Mineral Resources:

- Confident geological interpretation
- High quality, representative samples and assays
- Application of appropriate estimation technique

## This comes from:

- Mapping and sampling the deposit
- Ensuring the highest standards of sampling and assaying integrity
- Employing experienced, qualified professionals (“Competent Persons”)

# The Challenge of Mineral Resource Estimation

Imagine several knitting needles penetrating this room



**This is the amount of each drill  
sample that is analysed**



# Resource Estimation Techniques

These include:

➤ Geostatistical

➤ Statistical

} Block modelling techniques

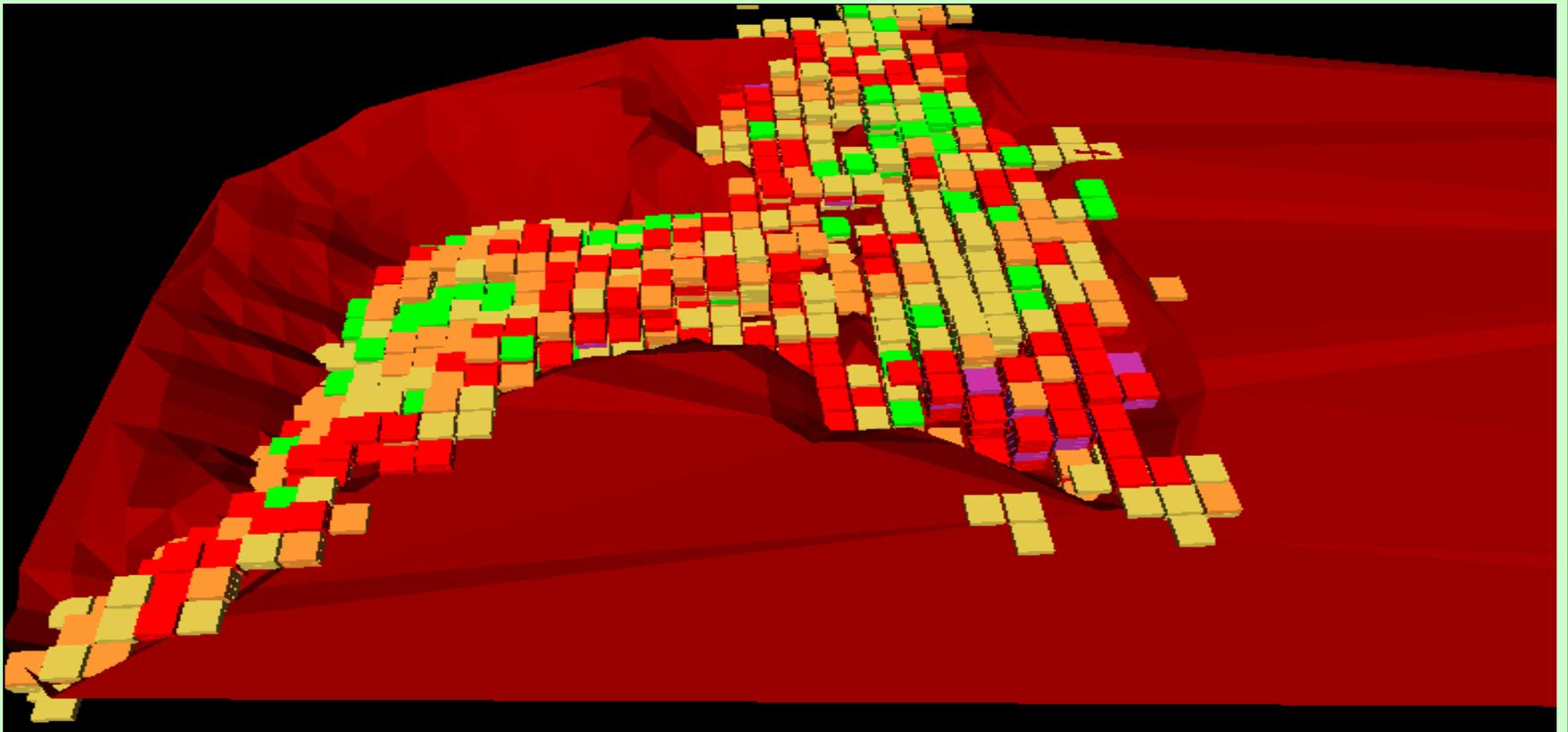
➤ Manual;

and are applied to the geological and assaying information to yield reliable tonnage/grade estimates.

These estimates are classified and reported in accordance with one of the accepted international reporting standards (e.g. JORC, SAMREC, NI 43/101, Reporting Code)

# Resource Estimation Techniques cont.

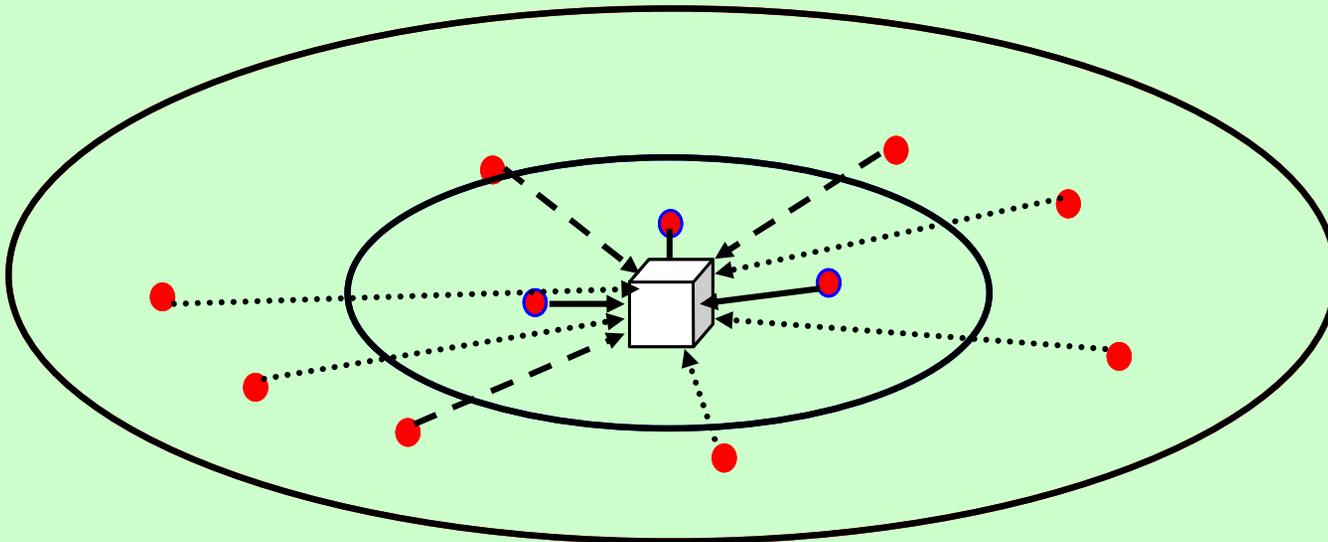
## ➤ Block modelling (e.g. Geostatistical)



# Resource Estimation Techniques cont.

➤ Block modelling

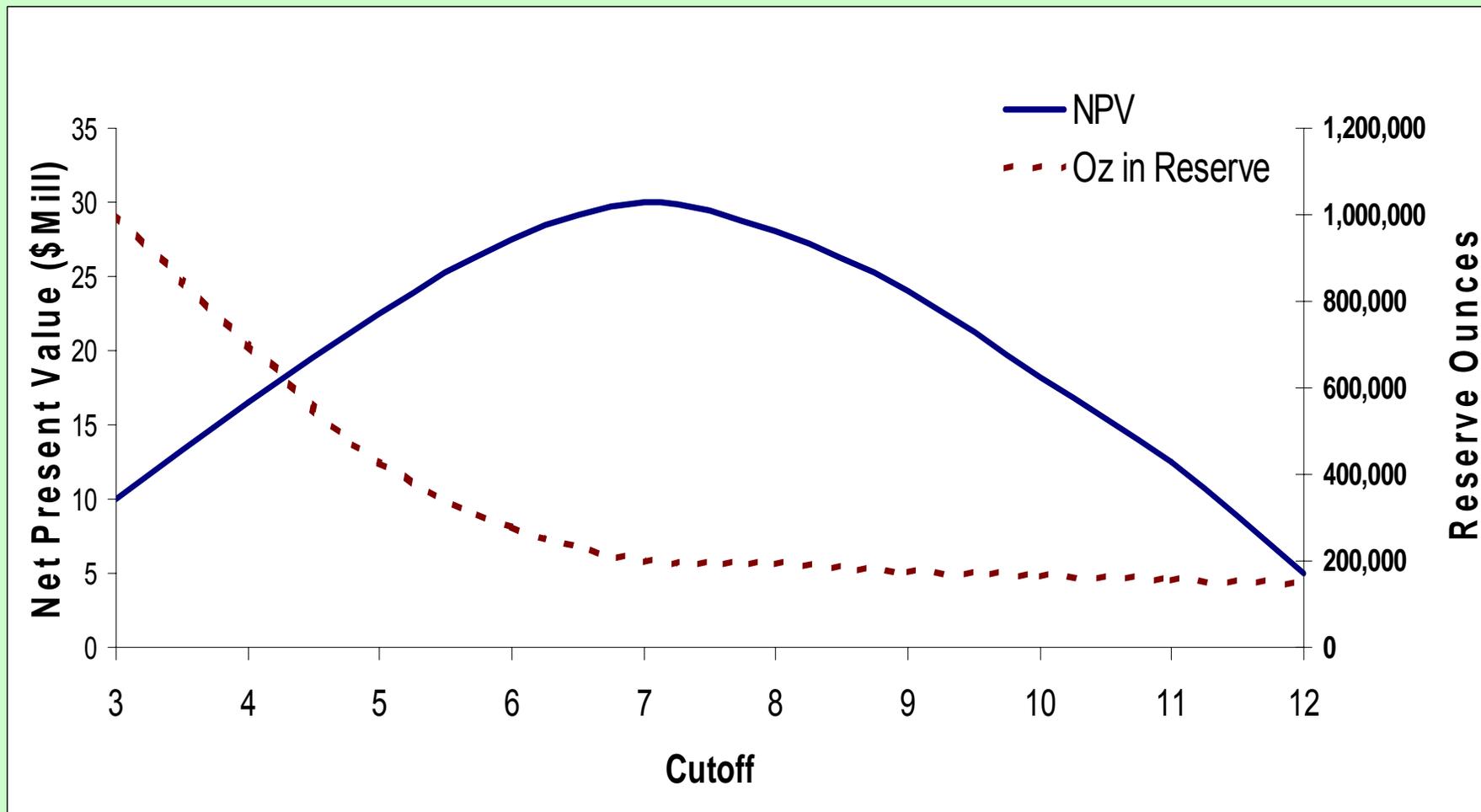
(● = drillhole)



# Ore Reserve Estimation

- Based on Measured and/or Indicated Mineral Resource estimate (not Inferred)
- Realistically derived or assumed Modifying Factors: mining, metallurgical, economic, marketing, legal, environmental, social and governmental
- Appropriately detailed technical/economic study

# There is no Single “Correct” Ore Reserve Estimate



# Main Factors affecting Mineral Resource/ Reserve Estimates

- Reliability of geological interpretation
- Amount, distribution and quality of resource data
- In “nuggety” deposits, treatment of very high grades
- Assumptions regarding mining and treatment methods
- Assumptions regarding commodity prices and exchange rates
- Experience and judgment of Competent Person

# Minerals Presentation

## JORC CODE AND OTHER NATIONAL / INTERNATIONAL REPORTING STANDARDS

# Australasian Joint Ore Reserves Committee (JORC)

- Volunteer committee of:
  - The Australasian Institute of Mining and Metallurgy
  - Minerals Council of Australia
  - Australian Institute of Geoscientists
- Representation by invitation from
  - Australian Stock Exchange
  - Securities Institute of Australia
  - Others if deemed appropriate
- In continuous existence for over 30 years

# Characteristics of JORC-Style Reporting Standard

- Principles-based standard:
  - Transparency
  - Materiality
  - Competence
- Minimum standard for public reporting
- Classification system of tonnage/grade estimates according to:
  - geological confidence
  - technical/economic considerations

# Characteristics of JORC-Style Reporting Standard (cont.)

- Requires public reports to be based on work undertaken by an appropriately qualified and experience person (“Competent” or “Qualified Person”), who can be held to account through a professional association
- Principle of “responsibility with accountability”
- Provides extensive guidelines on Resource/Reserve estimation

# History of Development of JORC Code and Related Reporting Standards

- 1971 - JORC formed
- 1971 to 1985 - JORC guidelines on classification and reporting
- 1980 - “Circular 831, Principles of a Resource/Reserve Classification of Minerals”, by US Bureau of Mines and US Geological Survey
- 1989 - First edition of JORC Code
- 1994 - First meeting of “Mineral Resources and Reserves International Definitions Working Group” (CMMI Group, now CRIRSCO)
- 1997/98 – CRIRSCO agreement, and CRIRSCO/United Nations Economic Commission for Europe (UN-ECE) agreement. Result in virtually uniform international definitions for Mineral Resource and Reserves
- 2000 to 2003 – Virtually identical reporting codes and guidelines adopted by South Africa, Canada, USA (SME), UK/Western European Countries, Chile and Peru, all based on 1999 JORC Code
- 2004 – Release of 2004 JORC Code

# Current Mineral Resource/Reserve Reporting Standards

## JORC style standards:

- JORC Code (Australasia) – translations into South American Spanish, Portuguese, Mandarin, Japanese and Russian (in progress)
- SAMREC Code (South Africa)
- CIM Standards (Canada, in NI 43-101)
- The Reporting Code (UK/Western Europe)
- SME Guidelines (USA)
- Chilean and Peruvian Codes
- CRIRSCO definitions and reporting standard template (International – in progress)

# Current Mineral Resource/Reserve Reporting Standards

## Other standards:

- UNECE Framework Classification (International) – incorporates JORC style definitions for market-related reporting, but is broader in scope, covering government inventory reporting
- SEC Industry Guide 7 (USA) – not fully consistent with JORC style codes

# Meaning of Mineral Resource

(See Supplementary Slides for full definition)

- Concentration or occurrence of material of intrinsic economic interest in or on the Earth's crust in such form, quality and quantity that there are **reasonable prospects for eventual economic extraction** (*requires preliminary judgements as to technical and economic criteria*)
- Location, quantity, grade, geological characteristics and continuity are known, estimated or interpreted from specific geological evidence and knowledge
- Sub-divided, in order of increasing geological confidence, into:
  - Inferred Mineral Resources
  - Indicated Mineral Resources
  - Measured Mineral Resources

# Inferred Mineral Resource

(See Supplementary Slides for full definition)

- That part of a Mineral Resource that can only be estimated with a **low** level of confidence
- Reasons for low confidence may include:
  - Inadequate geological knowledge
  - Limited sampling data
  - Data of uncertain or poor quality
  - Uncertain geological and/or grade continuity
- “Low” in this context means usually not sufficient to allow the application of technical and economic parameters to be used for detailed planning
- Therefore Inferred Resources may not be converted directly to Ore Reserves

# Indicated Mineral Resource

(See Supplementary Slides for full definition)

- That part of a Mineral Resource that can be estimated with a **reasonable** level of confidence
- “Reasonable” in this context means sufficient to allow the application of technical and economic parameters, and to enable an evaluation of economic viability
- Therefore Indicated Resources may be converted directly to Ore Reserves

# Measured Mineral Resource

(See Supplementary Slides for full definition)

- That part of a Mineral Resource that can be estimated with a **high** level of confidence
- “High” in this context means sufficient to allow the application of technical and economic parameters, and to enable an evaluation of economic viability that has a greater degree of certainty than an evaluation based on an Indicated Mineral Resource
- Therefore Measured Resources may be converted directly to the highest category of Ore Reserves

# Criteria for Classifying Mineral Resources as Measured, Indicated or Inferred

- Confidence in geological and grade continuity
- Quantity and distribution of sampling data
- Quality of sampling data
- Sensitivity of the Resource estimate to additional data or changes in the geological interpretation
- Judgement of the Competent Person

# Meaning of an Ore (Mineral) Reserve

(See Supplementary Slides for full definition)

- Economically mineable part of a Measured and/or Indicated Mineral Resource, including additional material and losses which may occur when the material is mined
- Appropriately detailed technical/economic studies have been carried out which take into account **realistically assumed** mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors (the “Modifying Factors”)
- These assessments demonstrate **at the time of reporting** that extraction could reasonably be justified
- Sub-divided in order of increasing confidence into:
  - Probable Ore Reserves
  - Proved Ore Reserves

# Probable Ore Reserve

(See Supplementary Slides for full definition)

- The economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource
- Includes additional material and losses which may occur when the material is mined
- Based on appropriate technical/economic studies which take into account realistically assumed Modifying Factors

# Proved Ore Reserve

(See Supplementary Slides for full definition)

- The economically mineable part of a Measured Mineral Resource
- Includes additional material and losses which may occur when the material is mined
- Based on appropriate technical/economic studies which take into account realistically assumed Modifying Factors

# Criteria for Classifying Ore Reserves as Proved or Probable

- Proved Ore Reserves derive only from Measured Mineral Resources
- Probable Reserves normally derive from Indicated Mineral Resources
- Probable Ore Reserve may derive from Measured Mineral Resources if there are significant uncertainties in any of the Modifying Factors
- Ore Reserves may not be directly derived from Inferred Mineral Resources

# Relationship between Mineral Resources and Ore Reserves

Exploration Results

**MINERAL RESOURCES**

**ORE RESERVES**

Increasing level of geological knowledge and confidence

**Inferred**

**Indicated**

**Probable**

**Measured**

**Proved**

Consideration of mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors (the "Modifying Factors").

# Economic Assumptions

- Apply to Mineral Resources and Ore Reserves, but may be a lower threshold for Mineral Resources
- Commodity prices
  - Commonly forward-looking estimates reflecting management's reasonable and supportable short and long term expectations
  - For commodities sold under existing contracts, prices may be based on contract terms
  - In the USA, SEC currently requires that commodity prices for Ore Reserves be based on the average prices prevailing in the last three years; the mining industry is currently in debate with SEC
- Exchange rates

# Non-Technical/Economic Modifying Factors

- Marketing, e.g. restricted market, need to develop a market
- Legal, e.g. tenement status, critical agreements
- Environmental, e.g. environmental impact statements, national parks
- Social, e.g. impact on local community
- Governmental, e.g. national ownership requirements, royalties

# Minerals Presentation

**WHO PREPARES THE  
ESTIMATES? (THE  
“COMPETENT PERSON”  
CONCEPT)**

# Who Prepares Estimate? – the Competent/Qualified Person Concept

- JORC-style standards require publicly reported reserve and resource information to be based on work undertaken by a Competent Person
- The Competent Person is named in the public report
- It is the Competent Person's responsibility to ensure that the estimates have been performed properly
- The Competent Person may be either an employee or a consultant

# Competent/Qualified Person Concept

(See Supplementary Slides for full definition)

- A Competent Person must have at least five years **relevant** experience
- A Competent Person must be a member of a professional society that:
  - requires compliance with professional and ethical standards
  - has disciplinary powers, including the power to discipline or expel a member
- Because the Competent Person's experience is in relation to the deposit style and situation under consideration, most countries do not attempt to maintain registers of Competent Persons

# Recognised Overseas Professional Organisations (ROPOs)

- Established to facilitate international reciprocity of Competent Persons and thereby promote high quality reporting across national boundaries
- Australian Stock Exchange now accepts reports from overseas Competent Persons that belong to one of 17 ROPOs
- ROPO like-systems also implemented by:
  - Canadian Securities Administrators
  - Johannesburg Stock Exchange (in progress)
- ROPO's must require compliance with professional and ethical standards and have disciplinary powers, including the power to discipline or expel a member

# Minerals Presentation

## USES OF MINERAL RESOURCE AND ORE RESERVE ESTIMATES

# Uses of Mineral Resource/Reserve Estimates

- Mine planning and investment/development decisions
- Property and company valuations
- Acquisitions and disposals of properties
- Debt and equity raisings
- Financial, e.g. depreciation, impairment etc.

# Minerals Presentation

## **CURRENT MINERAL RESOURCE/ORE RESERVE REPORTING PRACTICE IN MAJOR JURISDICTIONS**

# Current Minerals Reporting Practice Summary (details in Supplementary Slides)

	<b>Australasia</b>	<b>Canada</b>	<b>S Africa</b>	<b>UK/W Europe</b>	<b>Chile</b>	<b>Peru</b>	<b>USA - SME</b>	<b>USA - SEC</b>	<b>UN-ECE FC</b>
<b>JORC-type standard</b>	✓	✓	✓	✓	✓	✓	✓	X	X
<b>Recognised by Regulator</b>	✓	✓	✓	✓	✓	✓	X		X
<b>Competent Person</b>	✓	✓	✓	✓	✓	✓	✓	X	X
<b>ROPO-type system</b>	✓	✓	✓	X	X	X	X	X	X

# UN-ECE Framework Classification

## I 1- 4: Remaining in place

- E1:** Commercial
- E2:** Potentially commercial
- E3:** Undetermined or Non-commercial

## F-1: Produced

- F1:** Committed projects
- F2:** Contingent projects
- F3:** Prospecting projects

- G1:** Reasonably assured geology
- G2:** Identified geologic conditions
- G3:** Estimated geologic conditions
- G4:** Potential geologic conditions

- I1:** Reasonably assured geology in place
- I2:** Identified geologic conditions in place
- I3:** Estimated geologic conditions in place
- I4:** Potential geologic conditions in place

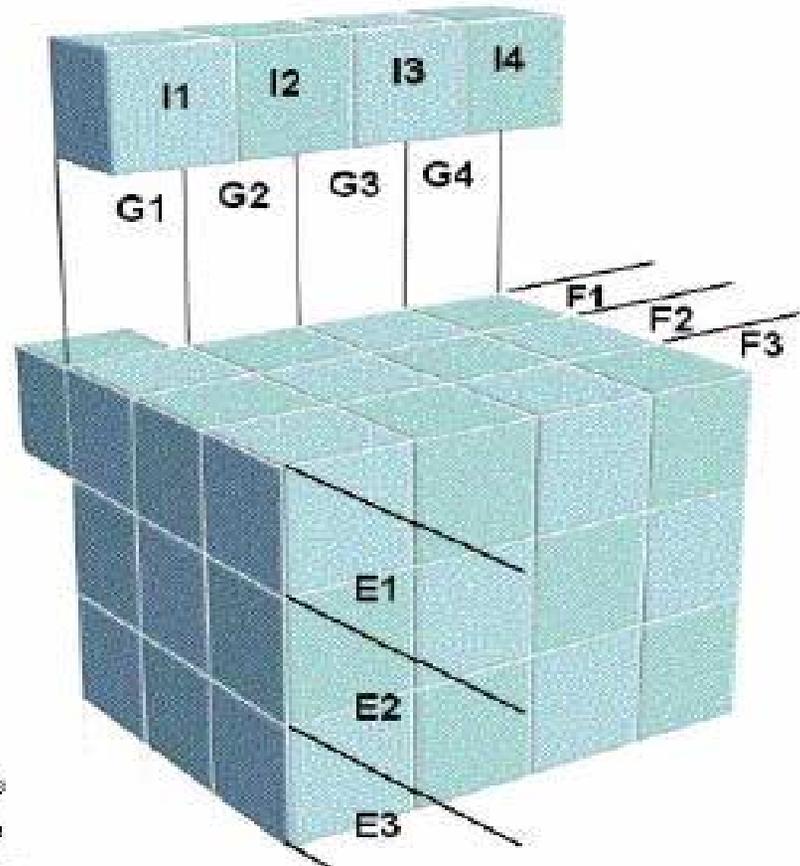


Figure 1 Principal elements of the UNFC

# Comparison of UNFC with JORC-Style Reporting Standards

UNFC	JORC-Style
3-dimensional	2-dimensional
41 possible categories*	5 possible categories
Government + market reporting	Market reporting only
No Competent Person	Competent Person
Not commonly used by “Western” banks etc	Commonly used by “Western” banks etc

\* 5 JORC-style categories incorporated into UNFC for market-related reporting

# Comparison of USA SEC with JORC-Style Reporting Standards

<b>USA SEC</b>	<b>JORC-Style</b>
Reserves only	Reserves and Resources
Prices 3-year average	Prices – reasonable forecasts
Feasibility study for Reserves	Technical/economic study for Reserves
No Competent Person	Competent Person

# Minerals Presentation

## CURRENT AND FUTURE DEVELOPMENTS

# Discussions with SEC

- SME leading negotiations, with international backing, to resolve current situation in USA where SEC does not recognise JORC-style reporting standards, causing significant problems for US-listed mining companies
- Major issues being discussed:
  - Commodity prices
  - Competent Person
  - Reporting of Mineral Resources
  - Level of study for Reserves declaration
  - Legal and permitting issues

# CRIRSCO International Reporting Standard Template

- Intended as a template for countries to draw on and customise. Will include:
  - International definitions (substantially in place)
  - International guidelines (substantially in place)
  - International definition of Competent Person (substantially agreed)
  - International rules of conduct for Competent Person
  - Recognition of ROPO arrangements
- In preparation, modelled mainly on 2004 JORC Code and UK/Europe Reporting Code

# Minerals Presentation

## SUMMARY OF KEY POINTS

# Summary of Key Points

- Mineral Resource/Reserve estimates are inherently uncertain
- There is no universally accepted Minerals reporting standard, but JORC-style standards are:
  - Used, with 90-95% compatibility, in most major mining countries
  - Accepted by most major national and international financial institutions
  - Adopted by most major national and international mining companies
  - Incorporated (Resource/Reserve definitions) into UNFC for market-related reporting
- JORC-style Minerals standards not currently accepted by USA SEC. Discussions underway to resolve differences
- CRIRSCO developing International Reporting Standard Template based on JORC-style standards

# Minerals Presentation

## SUPPLEMENTARY SLIDES

# Definition of Mineral Resource

- “A ‘Mineral Resource’ is a concentration or occurrence of material of intrinsic economic interest in or on the Earth’s crust in such form, quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories”. (Clause 19 of 2004 JORC Code)

# Definition of Inferred Mineral Resource

- “An ‘Inferred Mineral Resource’ is that part of a Mineral Resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and assumed but not verified geological and/or grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes which may be limited or of uncertain quality and reliability”. (Clause 20 of 2004 JORC Code)

# Definition of Indicated Mineral Resource

- “An ‘Indicated Mineral Resource’ is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are too widely or inappropriately spaced to confirm geological and/or grade continuity but are spaced closely enough for continuity to be assumed”. (Clause 21 of 2004 JORC Code)

# Definition of Measured Mineral Resource

- “A ‘Measured Mineral Resource’ is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are spaced closely enough to confirm geological and grade continuity”. (Clause 22 of 2004 JORC Code)

# Definition of Ore Reserve

- “An ‘Ore Reserve’ is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined. Appropriate assessments and studies have been carried out, and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction could reasonably be justified. Ore Reserves are sub-divided in order of increasing confidence into Probable Ore Reserves and Proved Ore Reserves”.  
(Clause 28 of 2004 JORC Code)

# Definition of Probable Ore Reserve

- “A ‘Probable Ore Reserve’ is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. It includes diluting materials and allowances for losses which may occur when the material is mined. Appropriate assessments and studies have been carried out, and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors These assessments demonstrate at the time of reporting that extraction could reasonably be justified”. (Clause 29 of 2004 JORC Code)

# Definition of Proved Ore Reserve

- “A ‘Proved Ore Reserve’ is the economically mineable part of a Measured Mineral Resource. It includes diluting materials and allowances for losses which may occur when the material is mined. Appropriate assessments and studies have been carried out, and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction could reasonably be justified”. (Clause 30 of 2004 JORC Code)

# Definition of Competent Person

“A ‘Competent Person’ is a person who is a Member or Fellow of The Australasian Institute of Mining and Metallurgy, or of the Australian Institute of Geoscientists, or of a ‘Recognised Overseas Professional Organisation’ (‘ROPO’) included in a list promulgated from time to time.

A ‘Competent Person’ must have a minimum of five years experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which that person is undertaking.

If the Competent Person is preparing a report on Exploration Results, the relevant experience must be in exploration. If the Competent Person is estimating, or supervising the estimation of Mineral Resources, the relevant experience must be in the estimation, assessment and evaluation of Mineral Resources. If the Competent Person is estimating, or supervising the estimation of Ore Reserves, the relevant experience must be in the estimation, assessment, evaluation and economic extraction of Ore Reserves”. (Clause 10 of 2004 JORC Code)

# Current Minerals Reporting Practice Australasia

- The JORC Code is incorporated into the Listing Rules of the Australian Stock Exchange and the New Zealand Stock Exchange. All mining companies listed on the ASX and NZX must comply with the Code
- The JORC Code is a required standard for all members of The AusIMM and AIG
- Public reports must be based on documentation prepared by Competent Persons
- ASX, acting on JORC's advice, promulgates lists of Recognised Overseas Professional Organisations ("ROPOs") to which Competent Persons may belong

# Current Minerals Reporting Practice Canada

- CIM “Definition Standards” (equivalent to JORC Code) is referenced by national reporting standard, NI 43-101, issued by Canadian Securities Administrators (“CSA”). All listed mining companies in Canada must comply with NI 43-101
- Public reports must be based on documentation prepared by Qualified Persons (equivalent to Competent Persons)
- CSA promulgates lists of non-Canadian “Self-Regulatory Organisations” (equivalent to ROPOs), to which Qualified Persons may belong

# Current Minerals Reporting Practice United Kingdom/Western Europe

- “The Reporting Code” recognised by UK Listing Authority as preferred reporting standard; expected to be formally adopted by UKLA
- The Reporting Code is required standard for members of the UK Institute of Materials, Minerals and Mining, European Federation of Geologists, Geological Society of London, and Institute of Geologists of Ireland
- Public reports must be based on documentation prepared by Competent Persons
- The Reporting Code Includes Rules of Conduct for Competent Persons

# Current Minerals Reporting Practice South Africa

- SAMREC Code has been adopted by Johannesburg Stock Exchange (JSE); all mining companies listed on JSE must comply with SAMREC Code
- SAMREC Code is required standard for members of South African Institute of Mining and Metallurgy, South African Council for Natural Scientific Professions, Geological Society of South Africa, Geostatistical Association of South Africa, and South African Council for Professional Land Surveyors and Technical Surveyors
- Public reports must be based on documentation prepared by Competent Persons
- A system of “Panel Review” facilitates implementation

# Current Minerals Reporting Practice Chile

- “Certification Code for Exploration Prospects, Mineral Resources and Ore Reserves”, applies by government agreement to all public reporting of mining assets in Chile
- Certification Code is a required standard for members of the Mining Engineers Association of Chile
- Public reports must be based on documentation prepared by “Qualified Competent Persons” (equivalent to Competent Persons)
- Certification Code includes Rules of Conduct for Competent Qualified Persons
- Law will be passed in Congress to create National Committee to manage Qualified Competent Person system

# Current Minerals Reporting Practice Peru

- “Code for Reporting of Mineral Resources and Ore Reserves” adopted by Venture Capital Segment of Lima Stock Exchange
- Code is required standard for members of College of Engineers of Peru, Association of Mining Engineers of Peru and Association of Geologists of Peru
- Public reports must be based on documentation prepared by Qualified Persons
- Register of Qualified Persons maintained by Lima Stock Exchange

# Current Minerals Reporting Practice USA - SME

- “Guide for Reporting Exploration Information, Mineral Resources and Mineral Reserves”, accepted by SME
  - Follows international definitions
  - Includes Competent Person
- Not recognised by US Securities and Exchange Commission (SEC), but in discussions to resolve differences
- SME recently approved creation of new category of member to enable application of Competent Person concept

# For Further Information

JORC (Australasia)

[www.jorc.org](http://www.jorc.org)

IMMM (UK)

[www.iom3.org](http://www.iom3.org)

CIM (Canada)

[www.cim.org](http://www.cim.org)

SAIMM (South Africa)

[www.saimm.co.za](http://www.saimm.co.za)

SME (USA)

[www.smenet.org](http://www.smenet.org)

SEC (USA)

[www.sec.gov](http://www.sec.gov)

CRIRSCO

[www.crirSCO.com](http://www.crirSCO.com)

Chile

[www.minmineria.cl](http://www.minmineria.cl)

Peru

[www.bvl.com.pe](http://www.bvl.com.pe)