



A DISCUSSION OF DIAMOND RESOURCE CLASSIFICATION

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INTRODUCTION

- **Inclination to secrecy**
 - Transparency
 - Materiality
- **What is a diamond resource?**
- **Resource classification - confidence in data and estimation**
- **Case studies**
- **Helpful suggestions**

WHAT IS A DIAMOND RESOURCE?

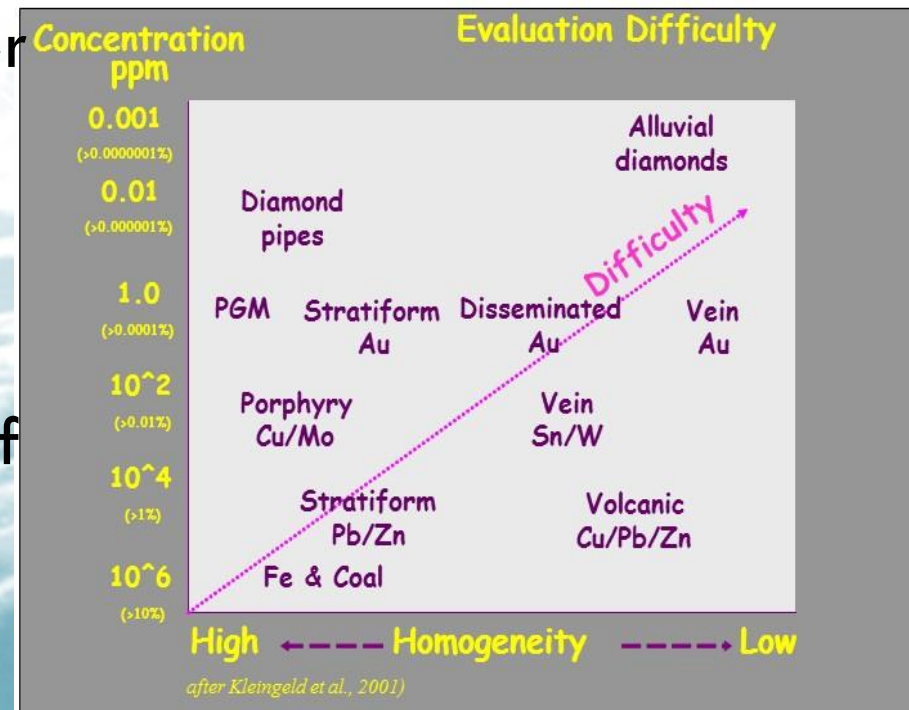
- a concentration or occurrence of diamonds of economic interest
- not an inventory of mineralisation
- no estimation without current sampling data; or
- valuation of a representative diamond parcel
- *reasonable prospects for eventual economic extraction*
 - *In situ value of diamonds at stated bottom cut-off*
 - *Cost to mine and process*
 - *Positive economic outcome*

GRADE AND GEOLOGICAL CONTINUITY – SAMPLING AND ESTIMATION DIFFICULTY

(AFTER, KLEINGELD ET AL. 2001).

- Two orders of magnitude lower grade
- inherent difficulty in estimation process
- requires a very high degree of care compared to other commodities
- Oosterveld (2001):

‘For most operating mines, resources fall short of making the Measured Diamond Resource category.’



A SCORECARD APPROACH TO CLASSIFICATION

KEY CATEGORISATION CRITERIA

Key Categorisation Criteria	Discussion	Confidence
Drilling/Sampling Techniques		High/Moderate/Low
Logging		
Drill Sample Recovery		
Sub-sampling Techniques and Sample Preparation		
Quality of Assay Data		
Verification of Sampling and Assaying		
Location of Sampling Points		
Data Density and Distribution		
Audits or Reviews		
Database Integrity		
Geological Interpretation		
Rock Dry Bulk Density		
Diamond size frequency distribution		
Estimation and Modelling		
Diamond valuation		
Cut-off Grades/reasonable assumptions		
Mining Factors or Assumptions		

- neither completely objective, nor subjective
- degree of discipline/rigour in procedure
- interested party can review for independent decision

A SCORECARD APPROACH TO CLASSIFICATION

Telfer (2004)

- Apply our minds, in a consistent manner
- Apply a consistent set of criteria

Balf (2004)

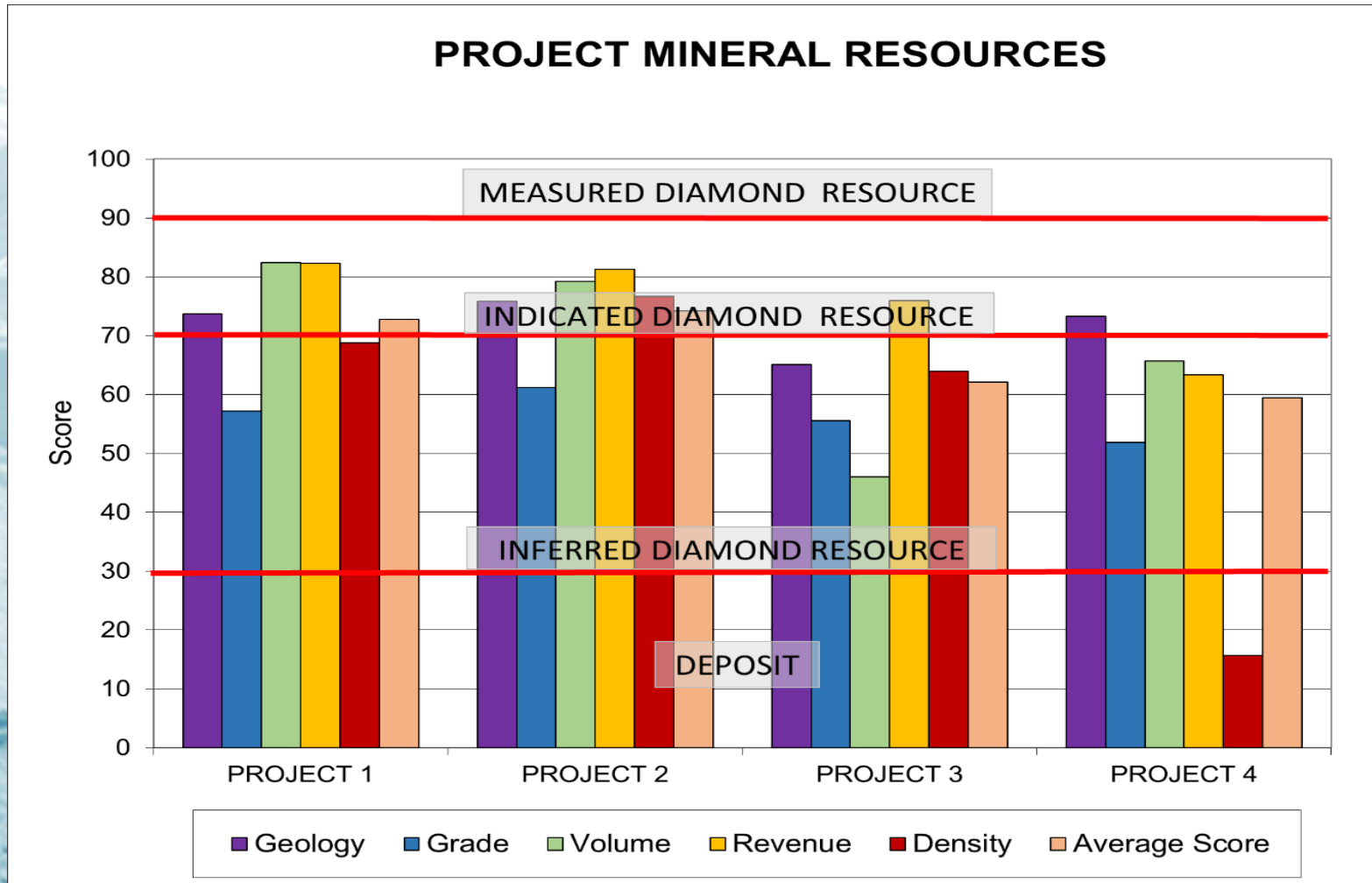
- consistent and standard De Beers internal policy
- reporting codes may be open to interpretation
- no standard procedures
- different techniques for different projects
- the roles of geology and geostatistics
- the variety of diamond deposit types

DE BEERS SCORECARD FACTORS AND SCORES

(PUBLIC REPORTING, AUDIT AND MANAGEMENT PLANNING)

Factor	Geology	Grade	Volume	Density	Revenue
Exploration Techniques	20				
Geological Sampling Integrity	20				
Sample Representivity	20				
Geological Model Definition	40				
Sample Integrity		15		20	20
Sample Accuracy		15			
Sampling Programme		10		10	10
Estimation Methodology		20	40	20	20
Risk Analysis		40	30	50	50
Data Integrity/Compatibility			30		
	100	100	100	100	100

RESOURCE SCORECARD EXAMPLE



PROJECT EXAMPLES

The Big Three

- Alrosa, De Beers and Rio Tinto

The Mid-Tier Diamond Companies

- Dominion Diamond Corporation
- Petra Diamonds
- Gem Diamonds
- Lucara Diamond Corp

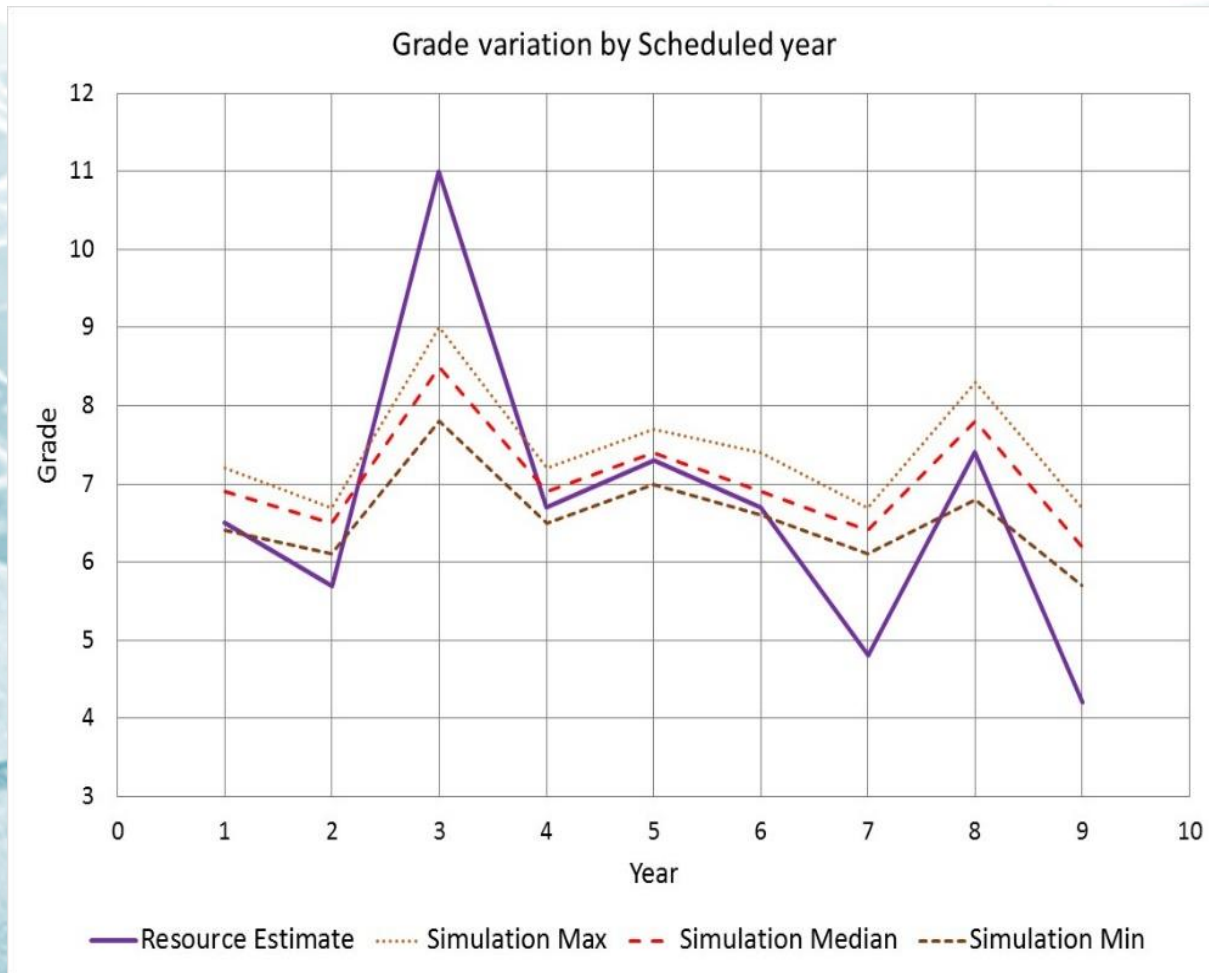
Best of the Rest

- Stornoway Diamond Corporation
- Tahera Diamond Corporation
- Peregrine Diamonds
- Diamondcorp Plc
- Kopane Diamond Developments Plc
- Shore Gold

SOME HELPFUL SUGGESTIONS

- Geological Interpretation
- Project Geologist
- Effect of Additional Drilling and Sampling
- Effect of Estimation Variance on Economic Viability
- Impact of Mining Method and Cut-off Grade
- Reporting Periods

GRADE RISK BY REPORTING PERIOD (AFTER SNOWDEN (2001))



CONCLUSIONS

- ultimate test is progress to production, and profitable operations
- well-defined project may deliver value (even with downside variance)
- poorly-defined project unlikely to deliver value even if well executed
- project failure
 - Geology and MRMR - 17%
 - Engineering studies etc – 83%
- Under-estimation of SFD with consequent undervaluation

CONCLUSIONS

- may not always get it quite right, in either a negative or positive manner
- responsibility to undertake our work to the best of our ability
- apply industry good practice
- classification directly relates to the financial risk assessment