

PERC – NOT JUST A CLASSIFICATION

MDSG: 7 Jan 2014

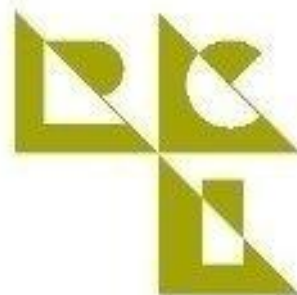
Steve Henley: deputy chairman, PERC; director,
Resources Computing International Ltd

Eddie Bailey: chairman, PERC; chief geologist,
Aggregate Industries Ltd

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PETROPAVLOVSK



PERC – what is it?

- Pan-European Reserves & Resources Reporting Committee (so should really be PERRRC)
- We define standards
 - for public reporting by minerals companies
 - of Exploration Results, Mineral Resources, and Mineral Reserves
- The European counterpart of JORC

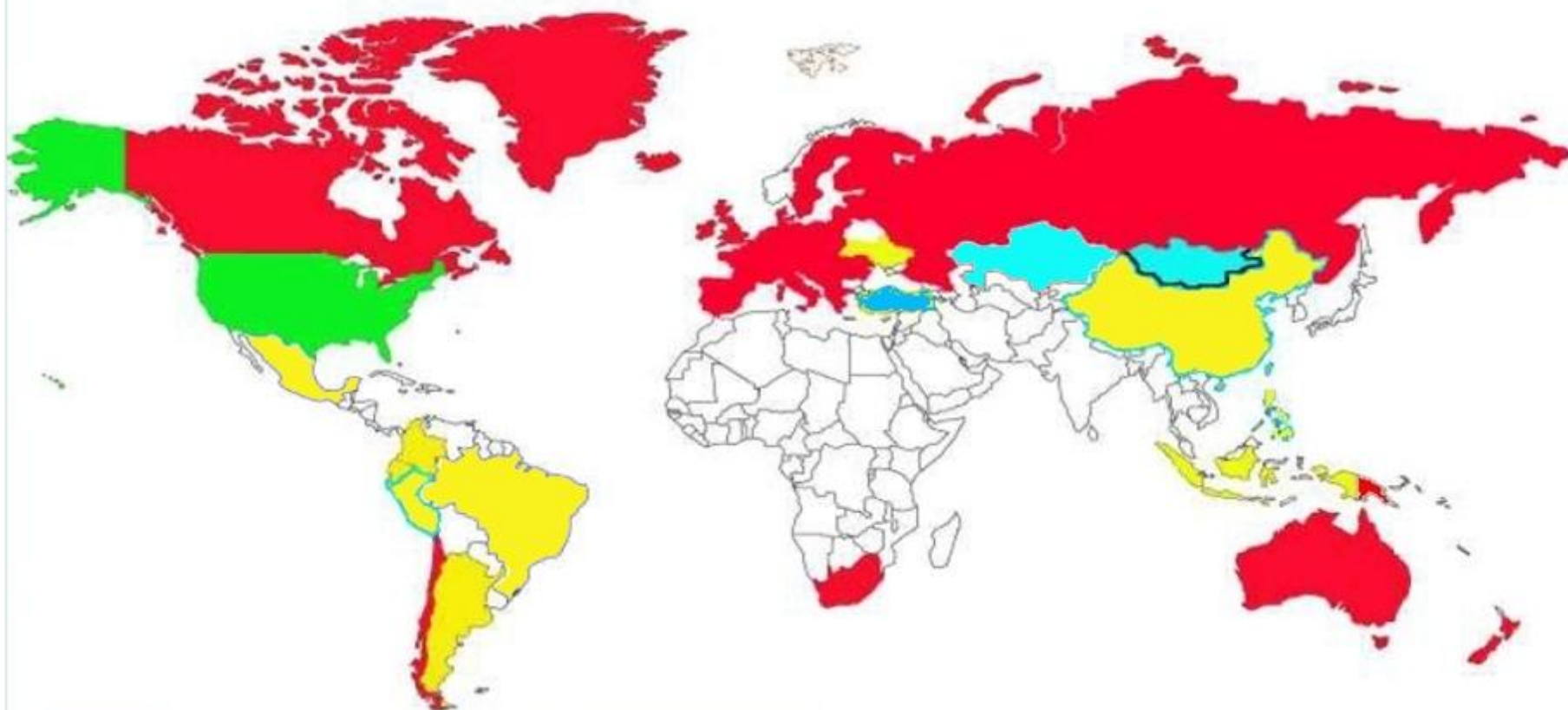
PERC – who is it?





- A committee established jointly by four professional organisations in Europe (GSL, IGI, IOM3, and EFG)
- Now registered as a not-for-profit association with an address in Brussels (the EFG office, in the Belgian Geological Survey building)
- Members are all volunteers, no paid staff

PERC and CRIRSCO

- PERC is a member of CRIRSCO
- CRIRSCO (Committee for Mineral Reserves International Reporting Standards) is an international 'umbrella' committee which coordinates the work of national reporting organisations that define public reporting standards
- CRIRSCO members are currently: JORC, CIM, SME, SAMREC, PERC, Chile (Comision Minera), Russia (NAEN)
- All CRIRSCO-aligned standards follow the same principles and share an identical set of core definitions
- Differences because different jurisdictions, different markets

CRIRSCO-family code usage



	Recognized by Law or Listing Rules
	Recognized, if specified by foreign or state law
	Memorandum of Understanding to establish code
	Preliminary discussions

The PERC Reporting Standard

- Specifies how public reports should be prepared – though does NOT define how estimates should be obtained
- Defines who should prepare them and take responsibility for their content

The PERC Reporting Standard

- Principles-based, not prescriptive
- Two main parts

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COMPETENT PERSON REQUIREMENT

- Qualifications
- Membership of an RPO
- Relevant Experience

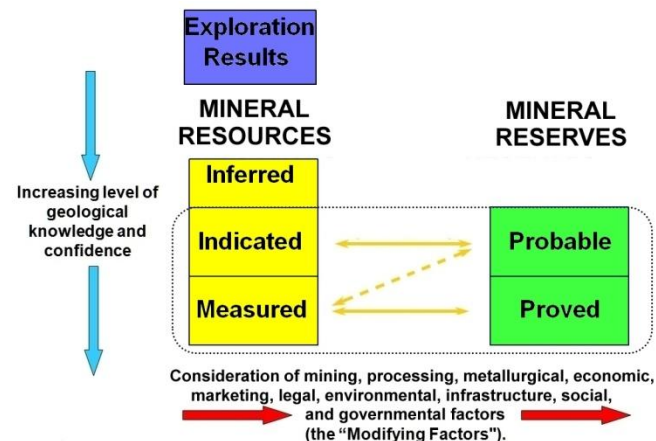
The PERC Reporting Standard

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CLASSIFICATION



Competence and responsibility

The Competent Person:

- Qualifications
- Membership of a professional organisation
- **5 years relevant experience**
 - **CRIRSCO 2013 discussion on extending this requirement (following the example of Chile)**
- The principle of **self-certification**
- The principle of **peer review**
- A **team** as Competent Person

Principles

- PERC is principles-based, not prescriptive
- **Transparency, Materiality, Competence**
- The Competent Person is central: requires experience, qualifications, membership of a recognised professional organisation
- Self-certification and Peer Review
- A team as Competent Person, especially when reporting Reserves

PERC Standard – structure & content

- Introductory sections
- Competence & Responsibility
- Reporting Terminology
- Reporting General
- Reporting of Exploration Results
- Reporting of Mineral Resources
- Reporting of Mineral Reserves
- Guidelines sections for specific mineral types
- TABLE 1 (check-list)
- Appendices

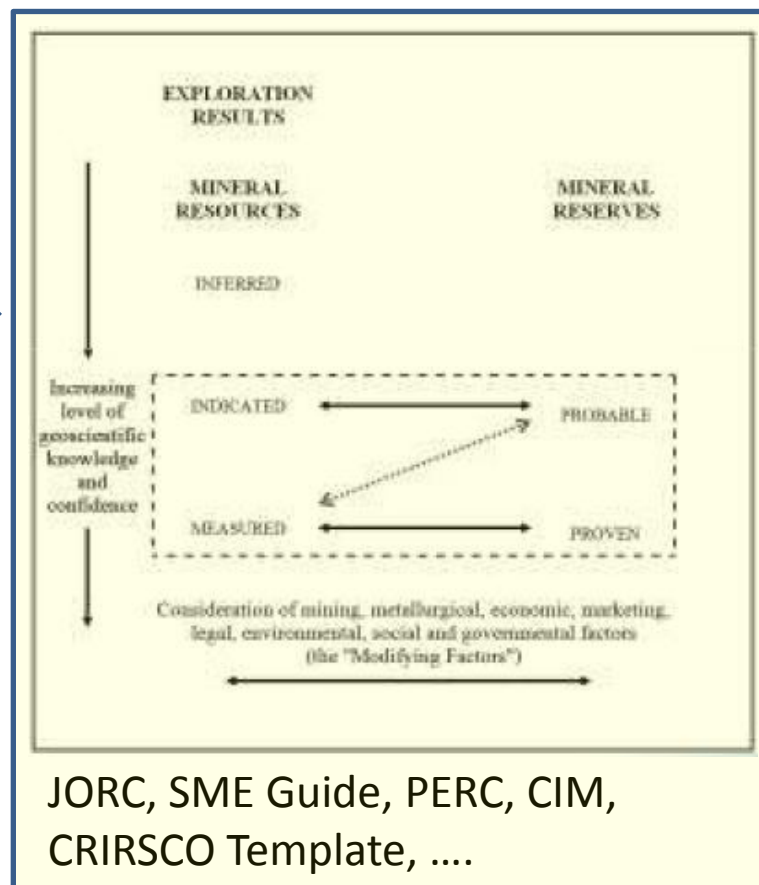
The classification: USGS Bulletin Was The Precursor to Modern Codes

USGS Bulletin 1450-A and USS Circular 831

Cumulative Production	IDENTIFIED RESOURCES			UNDISCOVERED RESOURCES	
	Demonstrated		Inferred	Probability Range	
	Measured	Indicated		Hypothetical	Speculative
ECONOMIC	Reserves		Inferred Reserves		
MARGINALLY ECONOMIC	Marginal Reserves		Inferred Marginal Reserves		
SUB- ECONOMIC	Demonstrated Subeconomic Resources		Inferred Subeconomic Resources		
Other Occurrences	Includes nonconventional and low-grade materials				

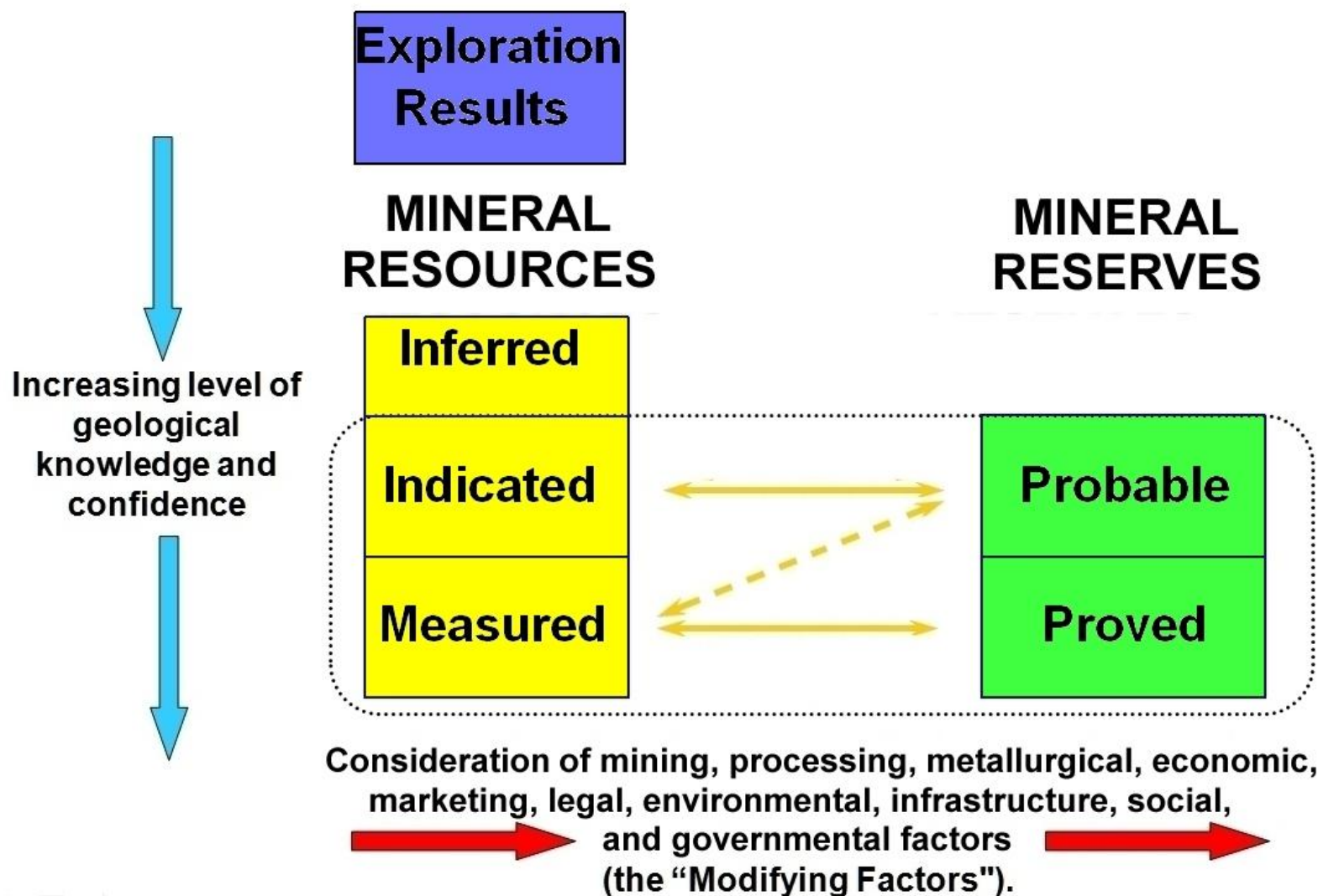


McKelvey diagram: geologic confidence and economic feasibility axes



SEC IG7 – Proven and Probable Reserves reportable, Measured, Indicated, and Inferred Resources not reportable

The classification

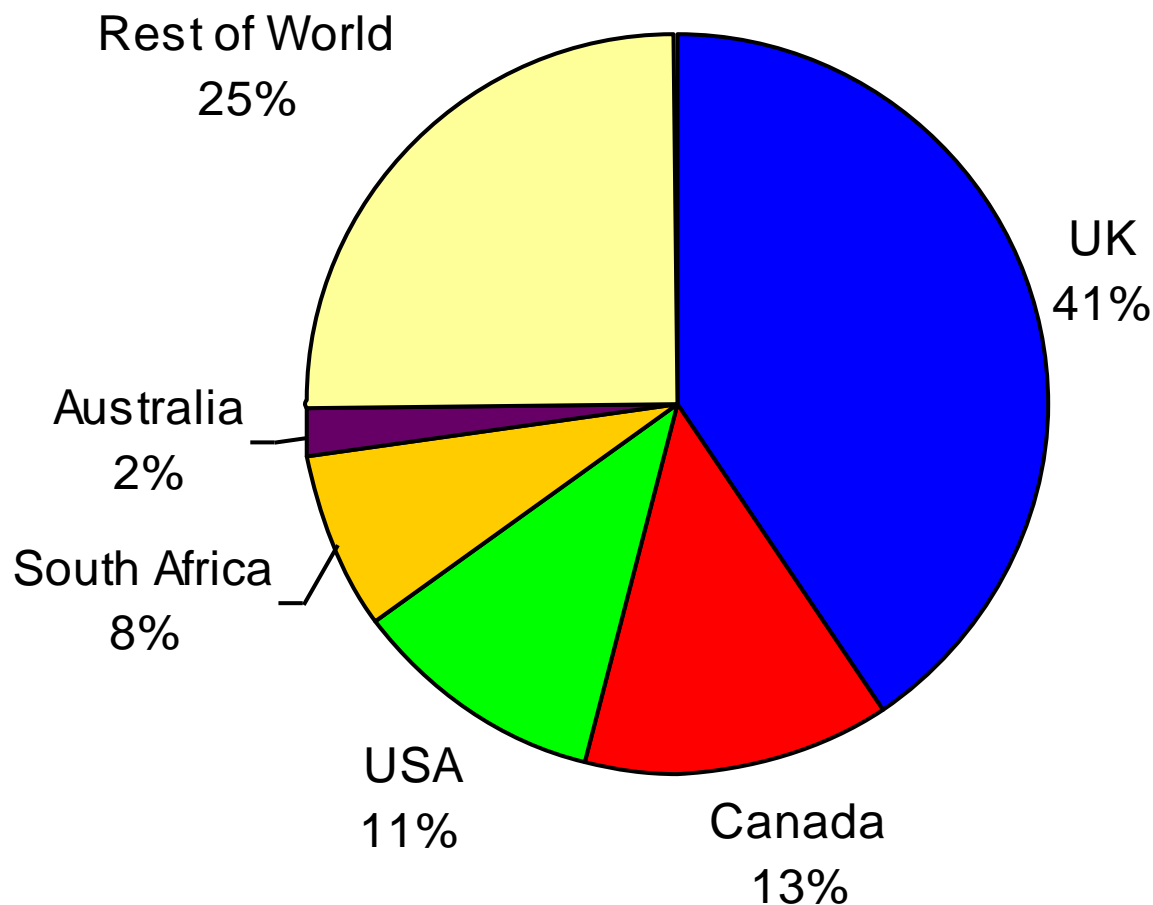


Recognition

- PERC is recognised by ESMA for use on European Union stock exchanges (ESMA = European Securities and Markets Authority)
- Accepted on a number of other stock exchanges around the world (Canada, Singapore, ...)

PERC: a standard for European markets

Minerals industry capital (primary listings) on the world's stock exchanges



**Relative sizes of
mining capital
markets –**

**EU total
estimated in the
region of 45-50%**

What else does PERC do ?

- Participation in European and global projects to raise professional standards – specifically for minerals reporting
- Example: [the Minventory project](#) - led by BGS, BRGM; a metadata web portal for European raw materials
- Training: workshops, courses, conferences
- **22-23 Oct. 2014, London: FINEX 14**
- **21-22 Nov. 2014, Brussels: EFG/PERC/CRIRSCO conference on reporting standards**

Current developments

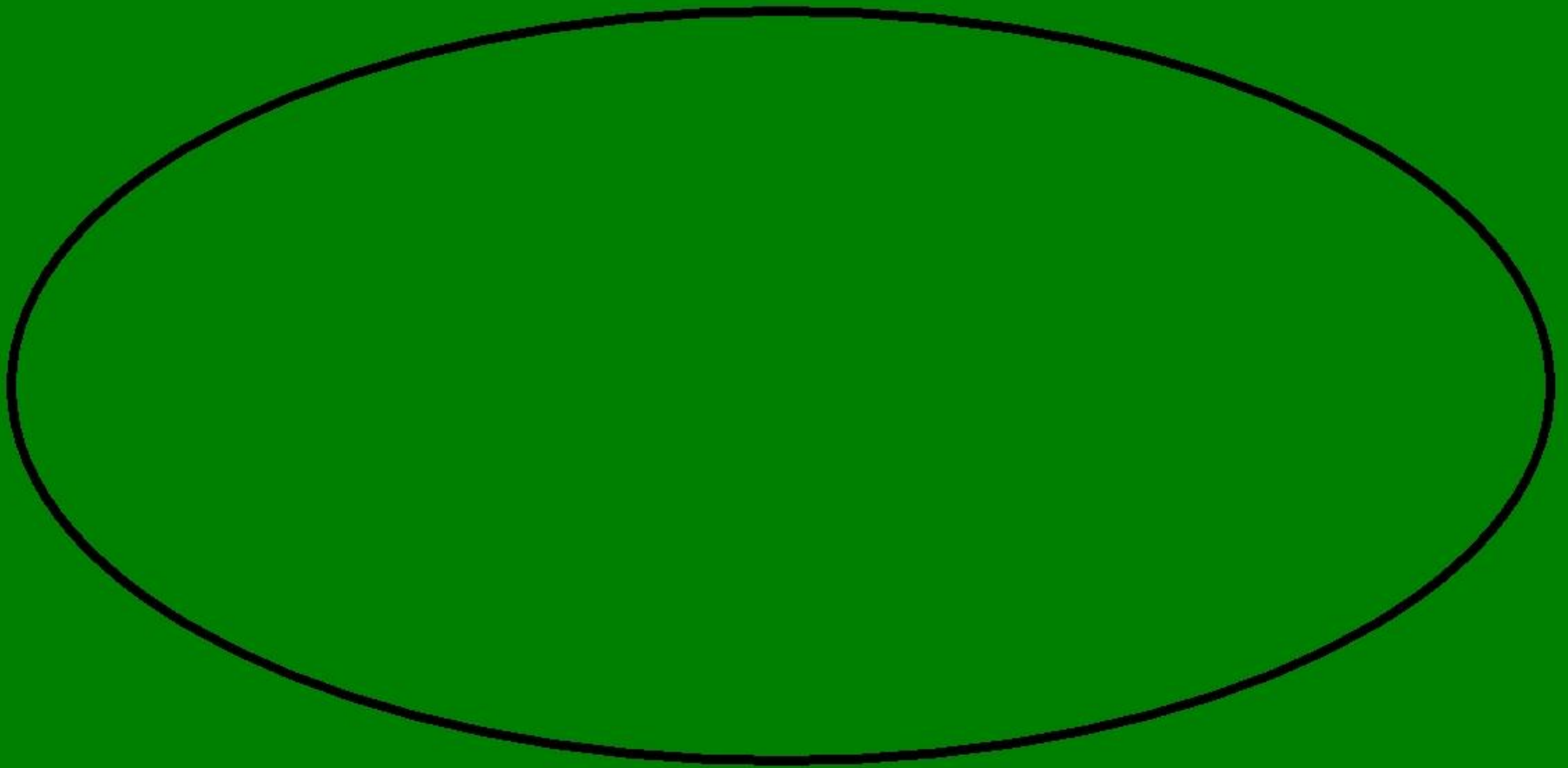
- Initiated discussions on the inclusion of a commodity-specific set of guidelines on Dimension Stone. Of particular importance to a number of European companies, particularly marble producers in Italy

How PERC works:
here's a greenfield exploration project

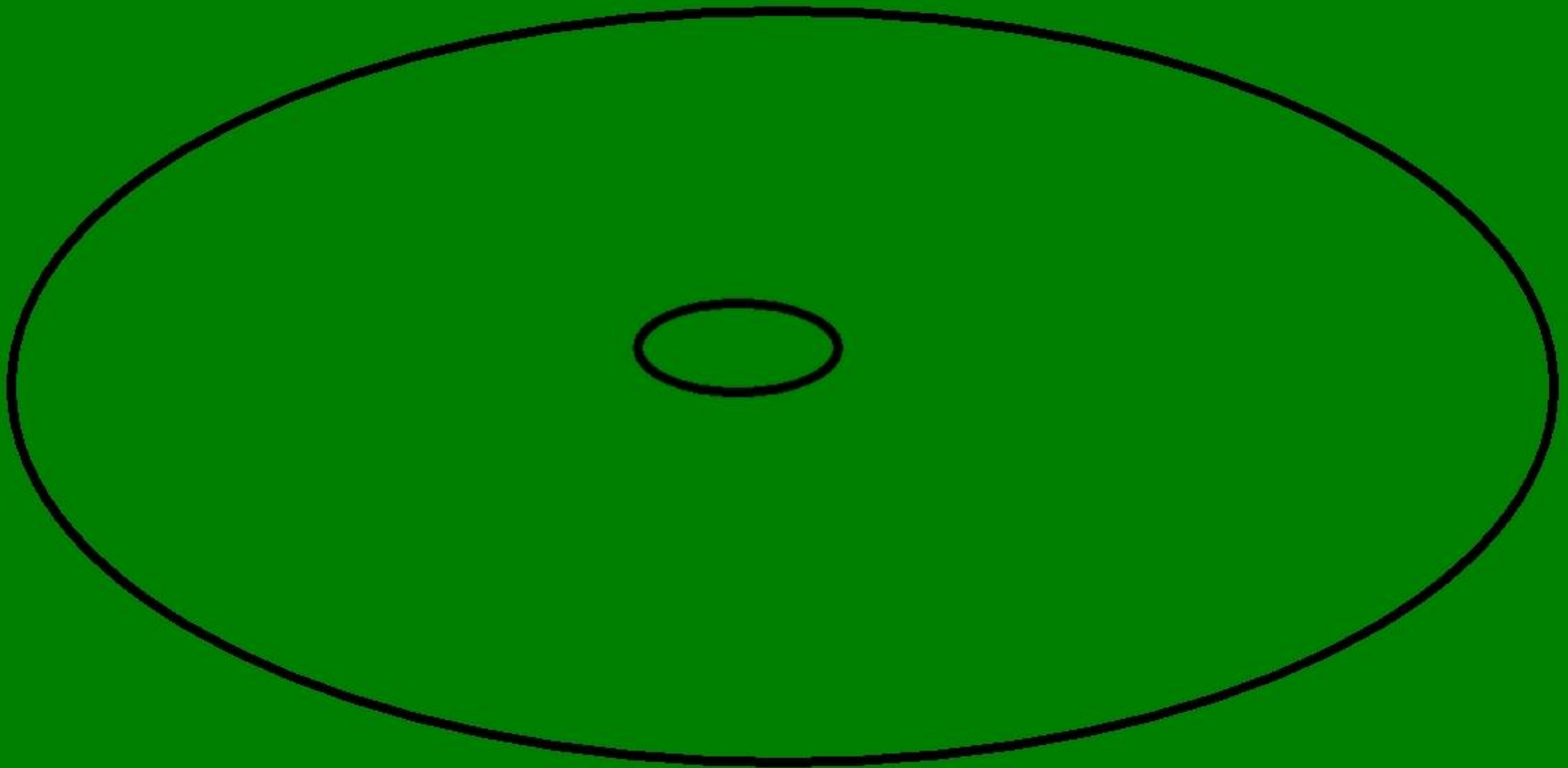
No site-specific knowledge –
any deposit could be small



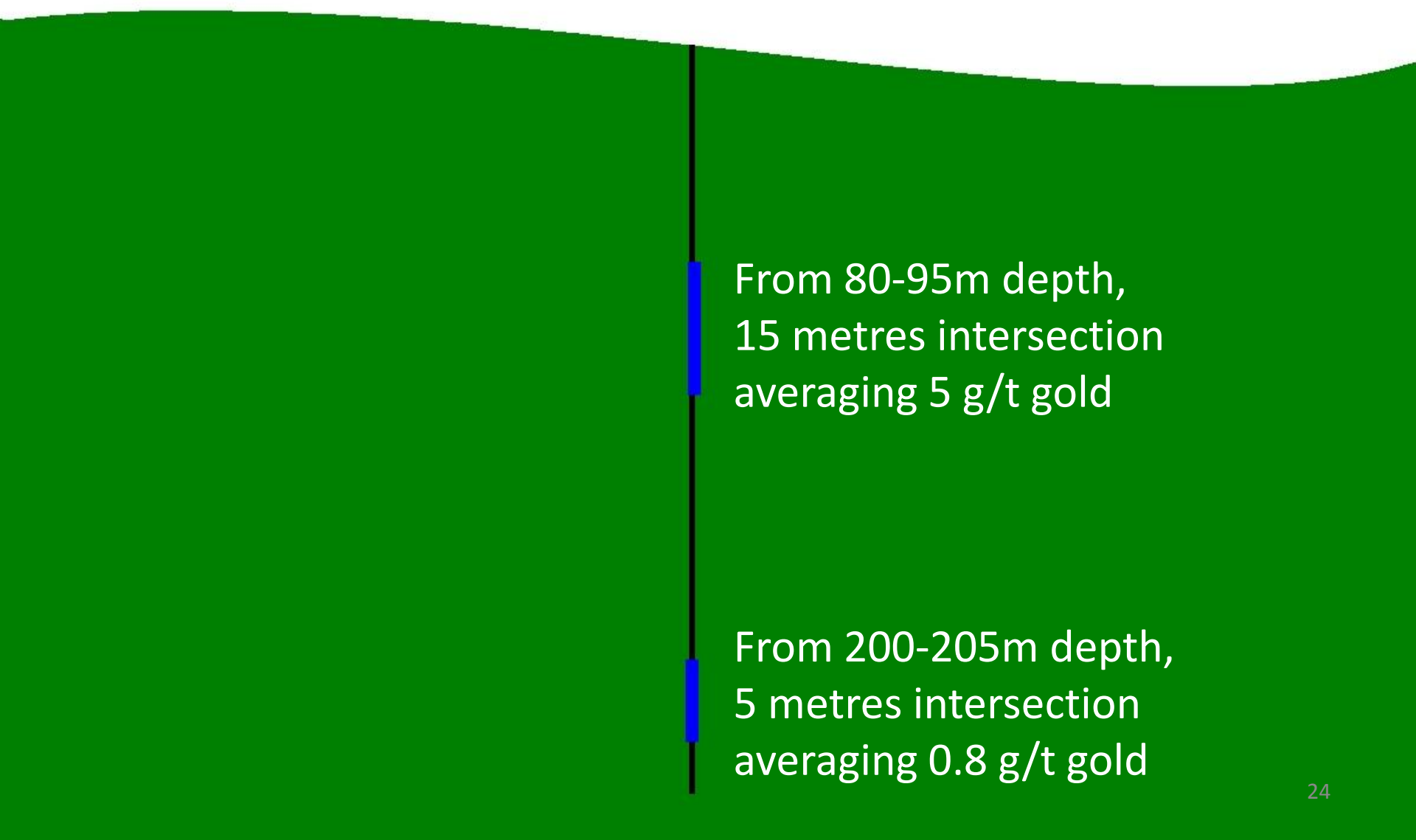
Or large



Can report an **Exploration Target**, as a range of possible tonnages and grades



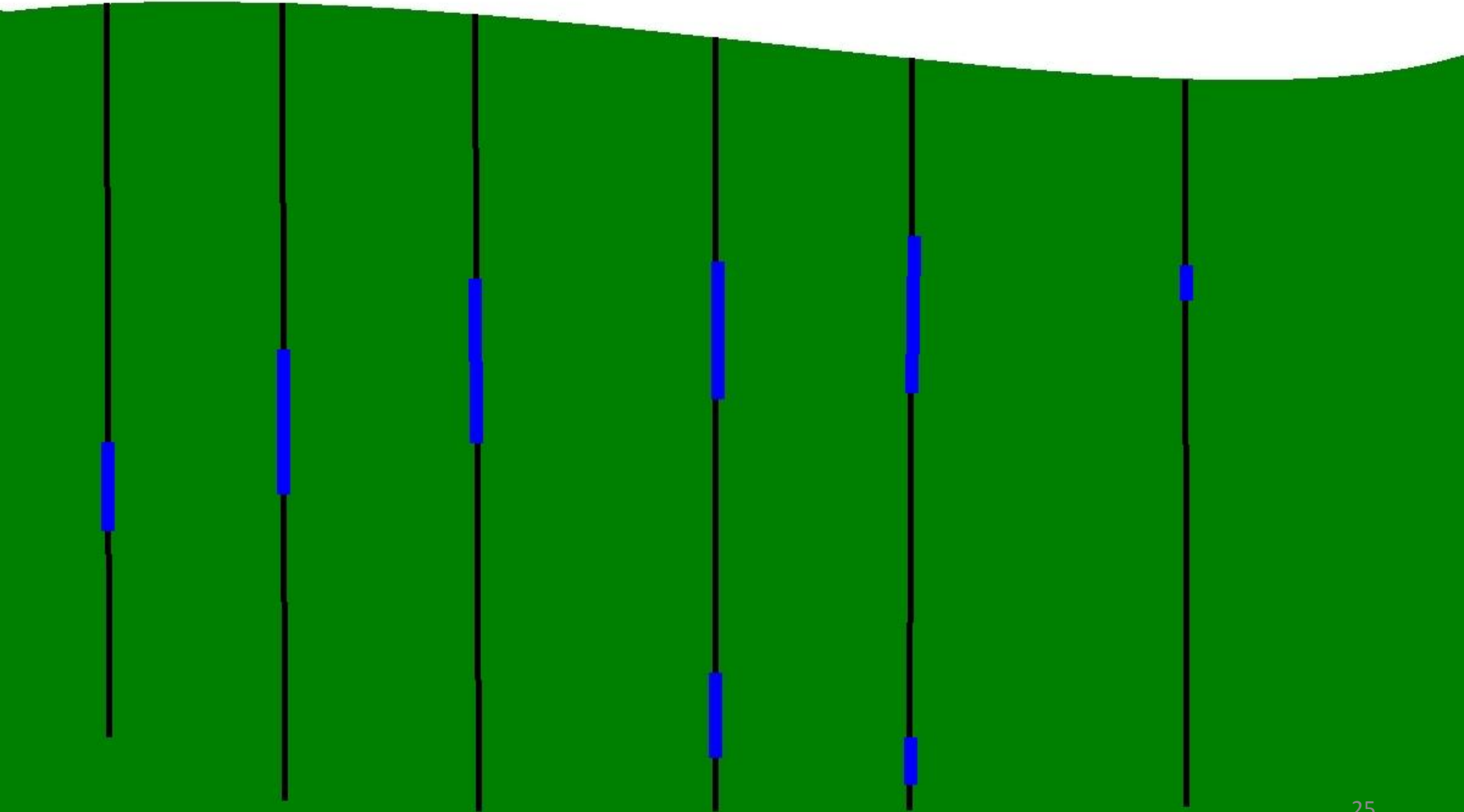
Ah – now we have some data. Drillhole intercepts can be reported as **Exploration Results**



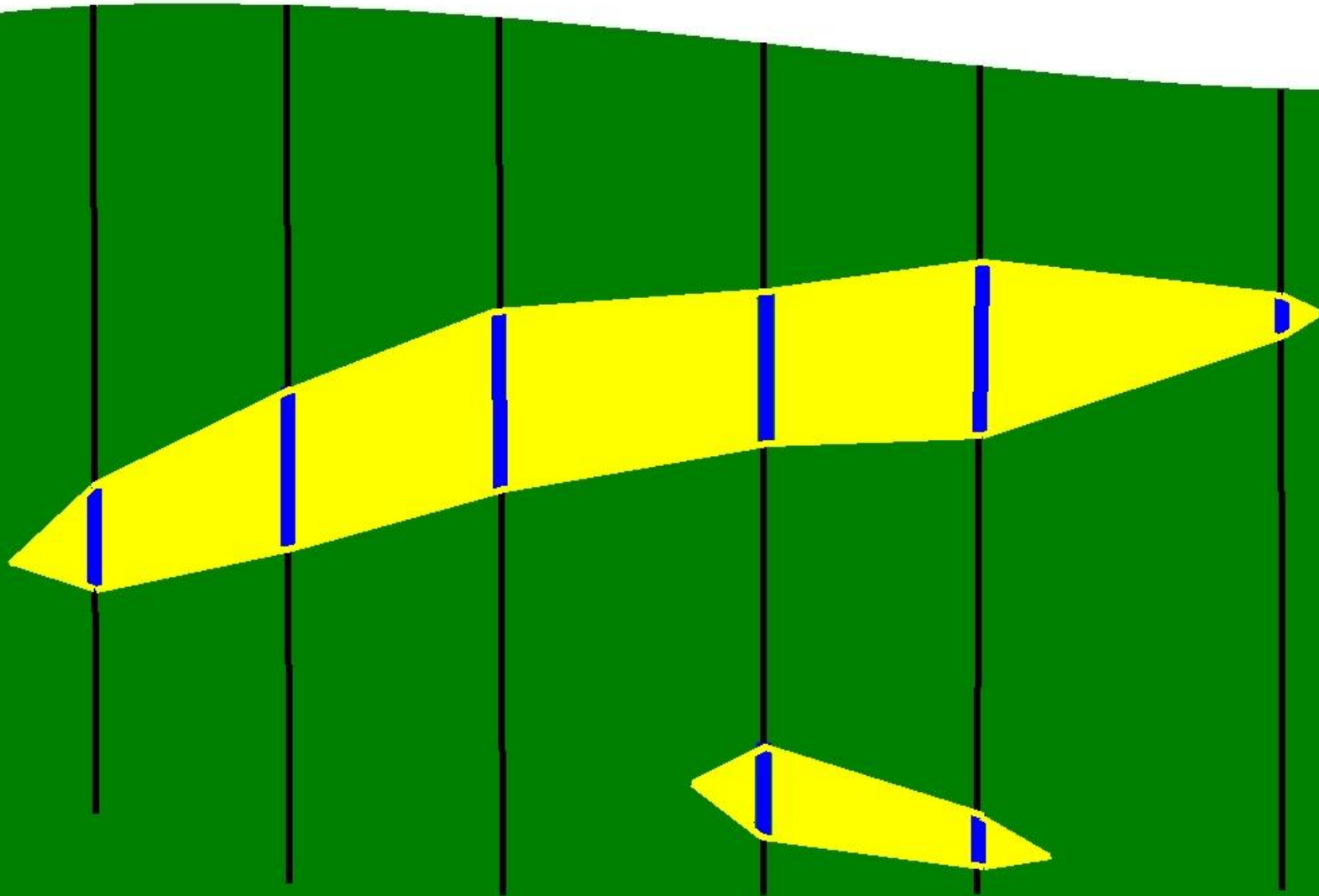
From 80-95m depth,
15 metres intersection
averaging 5 g/t gold

From 200-205m depth,
5 metres intersection
averaging 0.8 g/t gold

Now we have enough drillhole data to tell us something more.

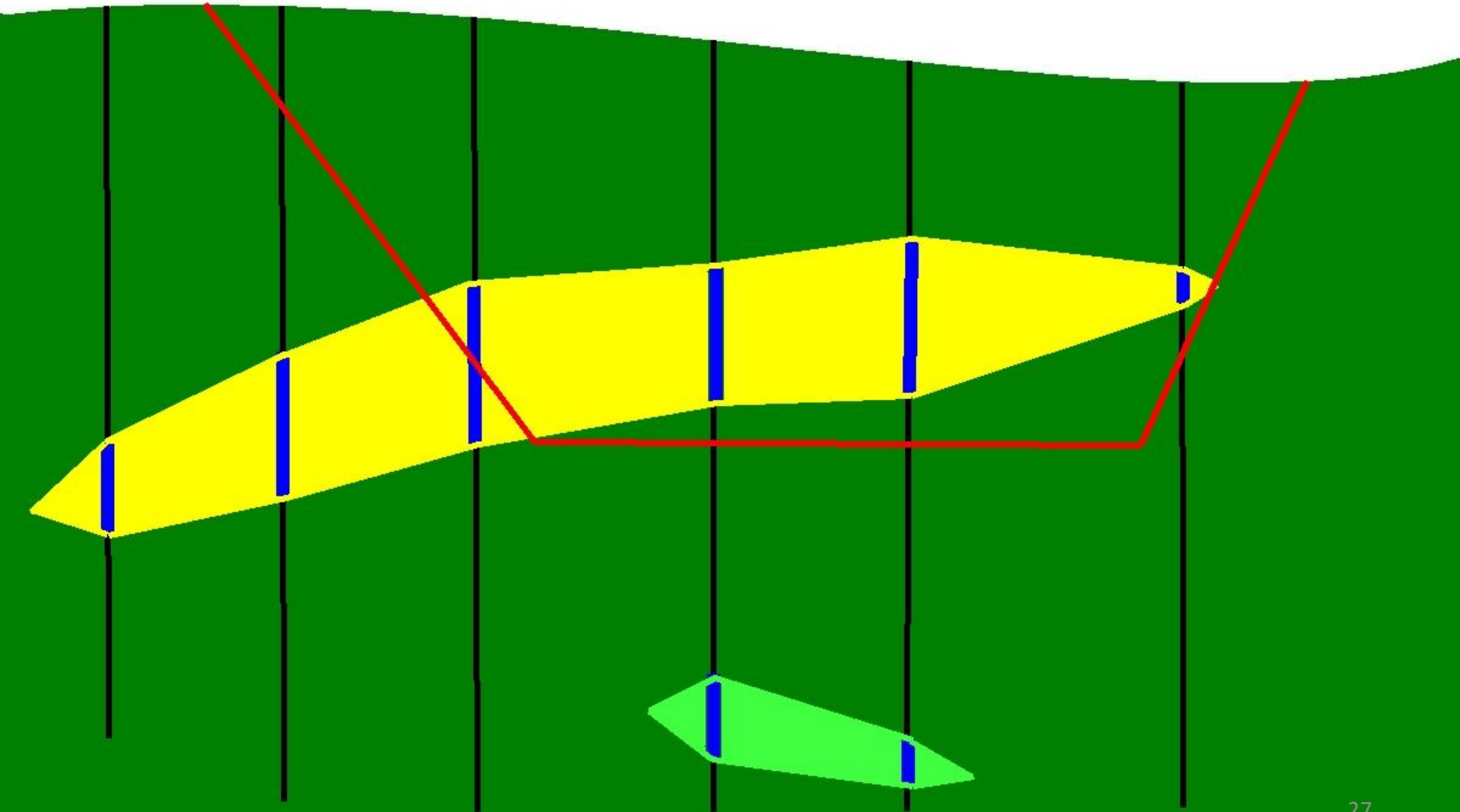


We can build a deposit model, and report
Resources

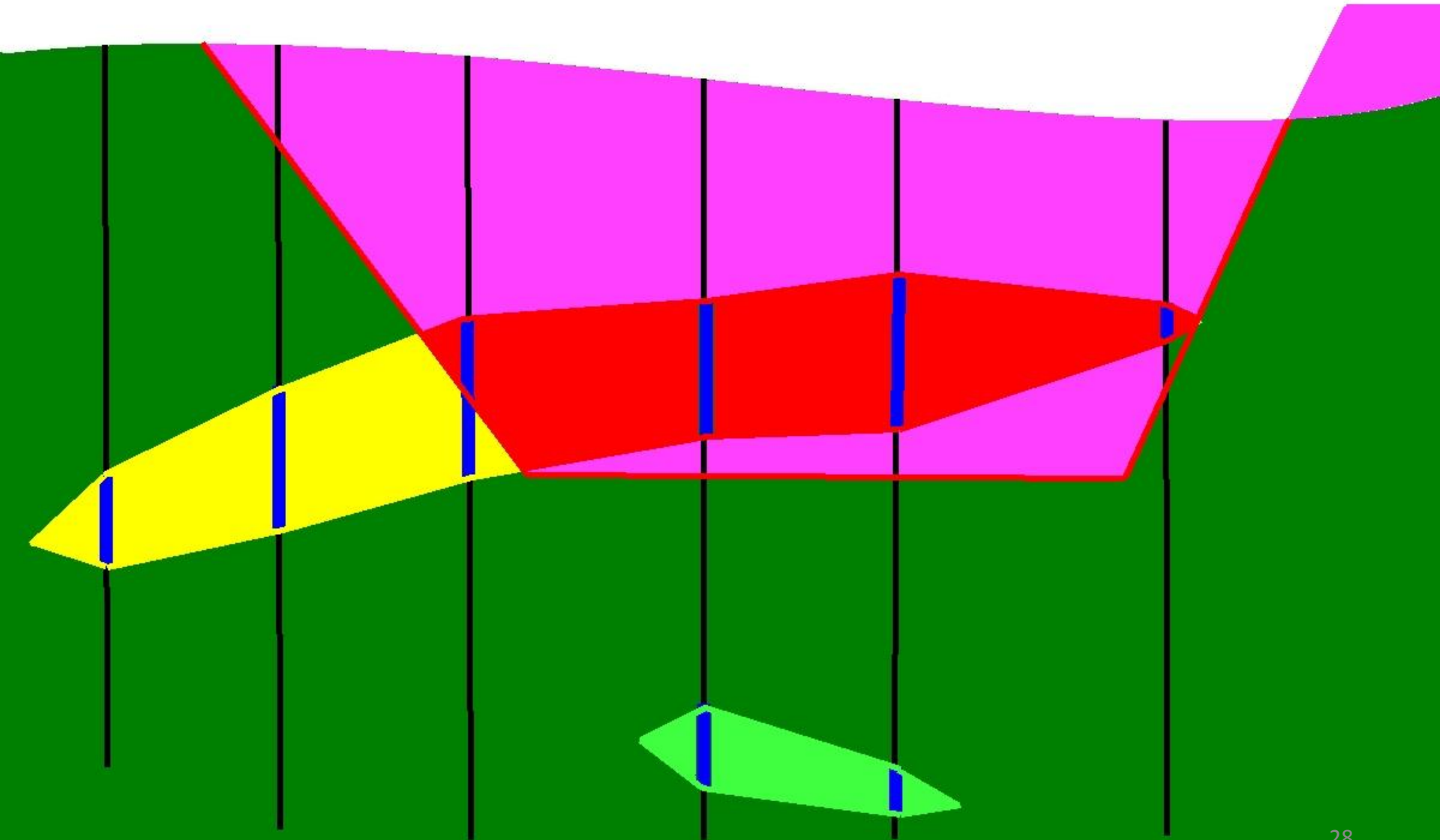


We can start to look at the economics.

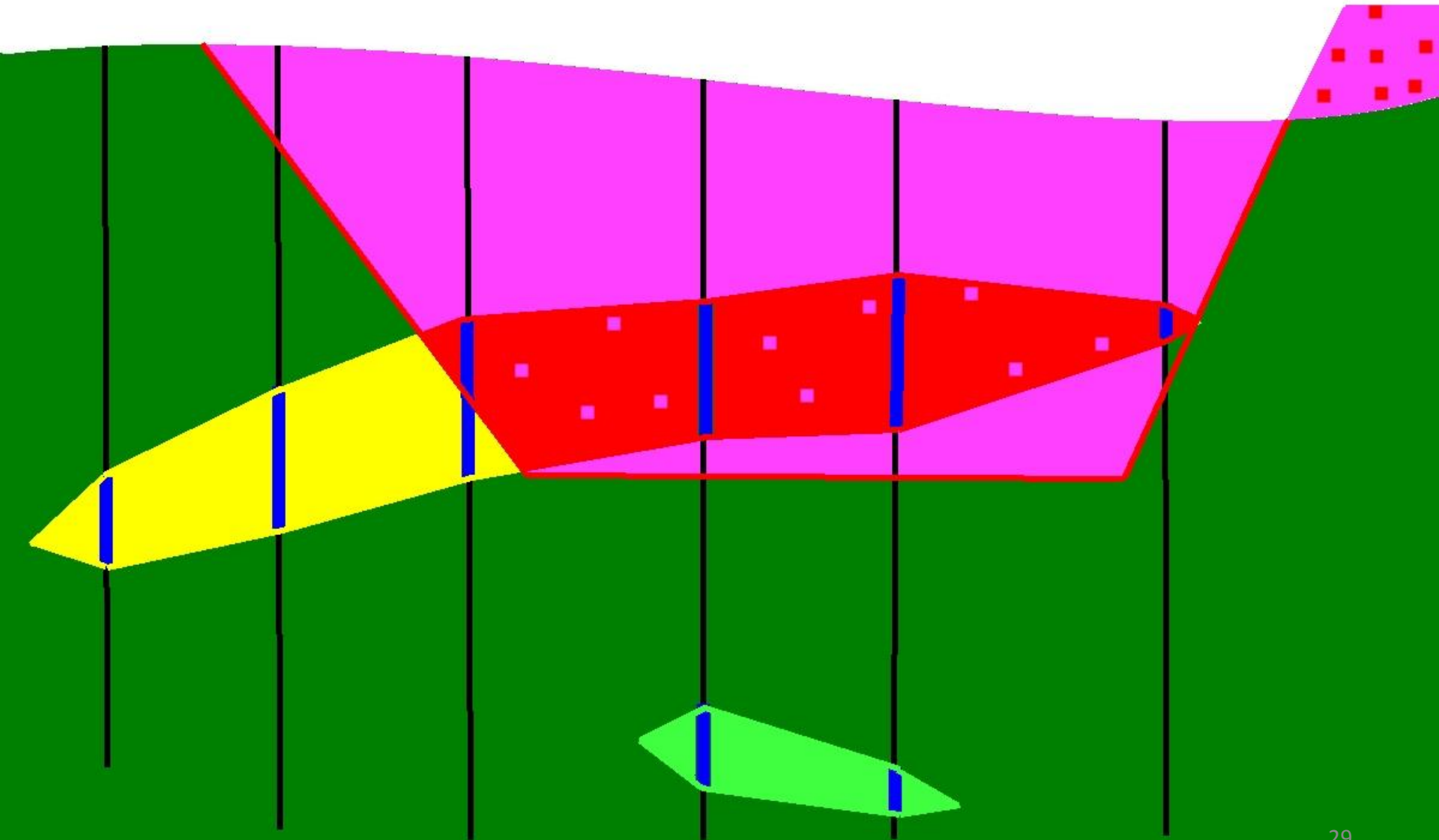
The deep deposit will never be economic. **It is not a Resource**



With a mine design and other Modifying Factors, we
can define a **Reserve**



Note that a Reserve allows for dilution and for mining losses



Thank you



www.percstandard.eu