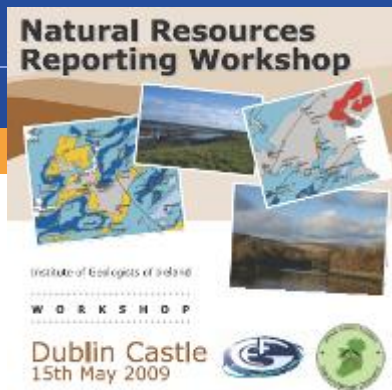




Reserve & Resource Statements – a perspective of a junior company



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Introduction

- ❖ What junior companies are expected to do:
- ❖ Compliance with listing requirements;
- ❖ Compliance with SE Rules on news and reporting;
- ❖ Compliance with permitting regulations.



When are such reports needed ?

- ❖ We need to define the difference between an Admission Document clearly requiring Independent Competent Person (“CP”) under SE Rules and:
- ❖ Documents produced in the normal course of business such as Reserve and Resource statements (and annual reviews of changes as a result of mine operations) that need to be signed off by a qualified CP (but not necessarily independent).



Issues

- ❖ Many junior companies will never attain the status of needing to complete an initial mineral resource statement let alone a full blown reserve statement.
- ❖ Against this background what are the needs of a junior company?
- ❖ Clearly aspirational, a full R&R study is unlikely to be something most junior companies need to have in-house expertise on.



Why a R&R Statement ?

- ❖ Why do we need a Reserves & Resources statement ?
- ❖ To maintain licences or permits
- ❖ To negotiate a Concession or Mining Licence
- ❖ To settle the level of state (or private) royalty payable on mine production
- ❖ To support any public statements to stock exchanges
- ❖ To raise funds either through the market or industry



Issues

- ❖ Many of the junior company's on AIM do not either have on their boards or employ an experienced geologist with Reserves & Resources experience.
- ❖ However some have in-house abilities that may exceed that of the consultants that they have to appoint for compliance.
- ❖ This can generate a frustration of “memory stick” consultancy whereby the company does the majority of the work just to get a few comments from possibly less experienced consultants.

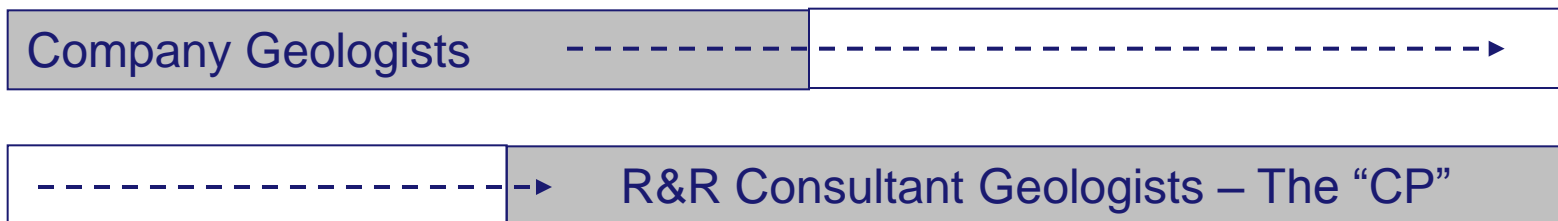


The Key Issues

- ❖ Competent Person “CP” reports on the projects as per certain standards such as NI 43-101, LSE AIM, etc etc.
- ❖ Independent R&R studies
- ❖ But who actually does the actual original work ?



The “overlap” between Company and Consultant Geologists

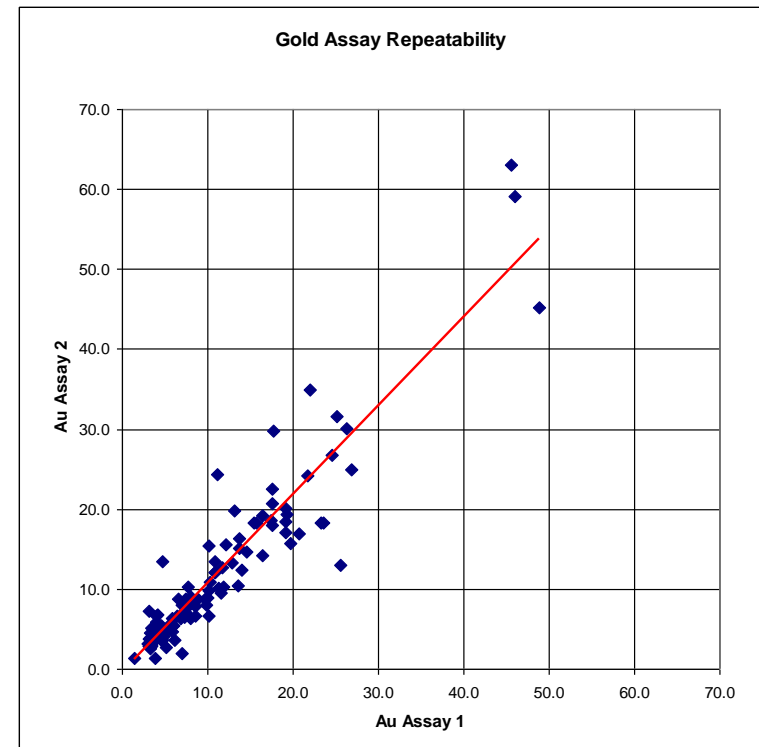
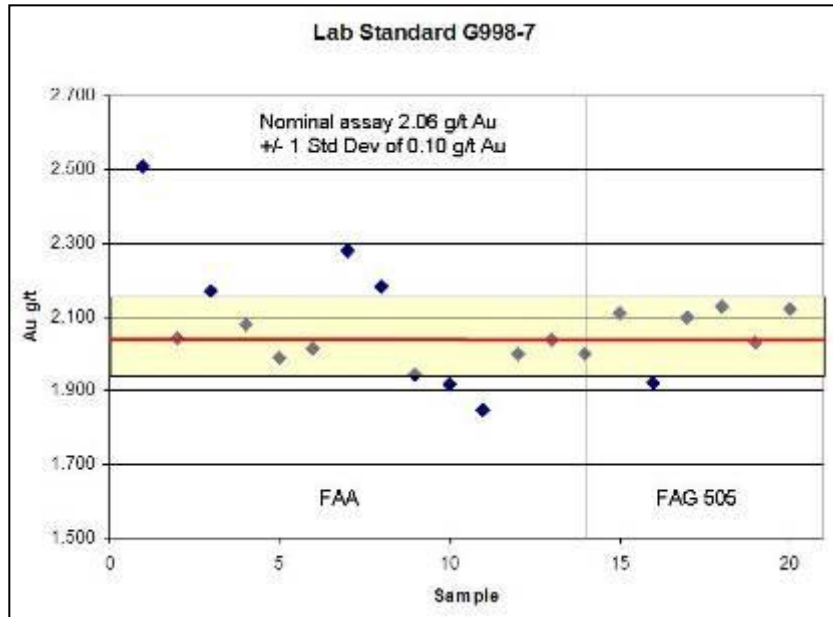




Consultants Problems - Technical

- ❖ Problems faced by consultants - technical:
- ❖ Sparcity of data as the company cannot afford to drill more holes.
- ❖ Inadequate in-house geological studies
- ❖ Inadequate in-house QA / QC on assay data.

❖ Maintain a full QA / QC programme



Field duplicates (triplicates), different assay methods, lab checks, sample blanks etc etc



Consultants Problems - Commercial

- ❖ Problems faced by consultants - commercial:
- ❖ Pressure from the company executives to come up with the number first thought of.
- ❖ The “rubber stamp” may fit the bill for compliance but sometimes the industry does not believe it.



ButOh dear !

- ❖ There have been a number of examples where resource statements have come out that have “surprised” the industry. Examples being where a few drillholes have seemingly quite miraculously defined millions of tonnes of ore or contained metal or where an abandoned mine suddenly has a new large resource with no additional drilling.

And There Is Promotion !



THE ULTIMATE PROMOTER

“...and that’s not all ! If we melt the snow sitting on top of the deposit and sell it as bottled mineral water, then convert to a gold equivalent we.....”



Gold Equivalent ???

No matter how you may define it the only recorded formal definition is:

- ❖ A unit of power of the protective colloids; the number of milligrams of protective colloid just sufficient to prevent the precipitation of 10ml of a 0.0053 to 0.0058% gold solution by the action of 1ml of a 10% sodium chloride solution.

Formal definition of “Gold Equivalent”



The Value of the Rubber Stamp

- ❖ The “rubber stamp” from independent consultants – in some cases is it really worth it and is it truly independent ?
- ❖ BreEx, Cartaway, Timbuktu and many more had independent “rubber stamps” of some form from independent consultants but all turned out to be somewhat, less than accurate.
- ❖ So does an independent report really mean everything it is meant to ?



Requirements of AIM

Review by qualified person

- ❖ A qualified person from the AIM company or an appointed adviser, which may include the CP, should review and sign off on each resource or drilling update and include their name, position and qualifications within the notification together with a statement to the effect that they have reviewed the information contained therein.

Review by nominated adviser

- ❖ The Exchange expects that, in addition to the above, **an appropriate person from the nominated adviser of an AIM company will review**, prior to its release (as part of its regulatory obligations owed solely to the Exchange) all notifications made by its client

AIM company Nominated advisers

- ❖ In order to comply with AIM Rule 39, a nominated adviser acting for any resource companies should ensure that it has appropriate access to suitably experienced and qualified individual(s) in the sector(s) in which its AIM companies operate. These individuals need not necessarily be full-time employees of the nominated adviser and may be engaged on a consultancy basis.



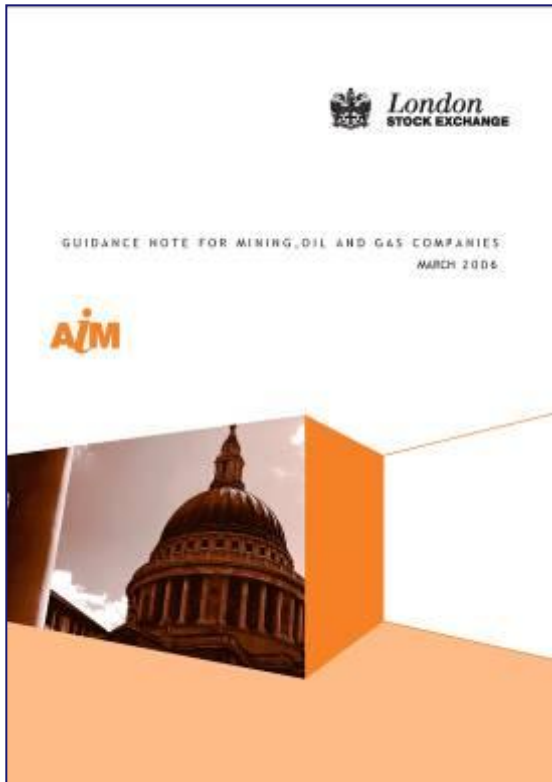
Requirements of AIM

- ❖ This raises the question of who is the report for ?
- ❖ The NOMAD is expected to have a CP available to review the CP report !!
- ❖ So now the junior company has to not only pay for the CP but also the appointed CP of the NOMAD as well as the usual NOMAD fees !!!!
- ❖ Surely a conflict of interest and a burden on junior companies.

Conflict of Interest Issues

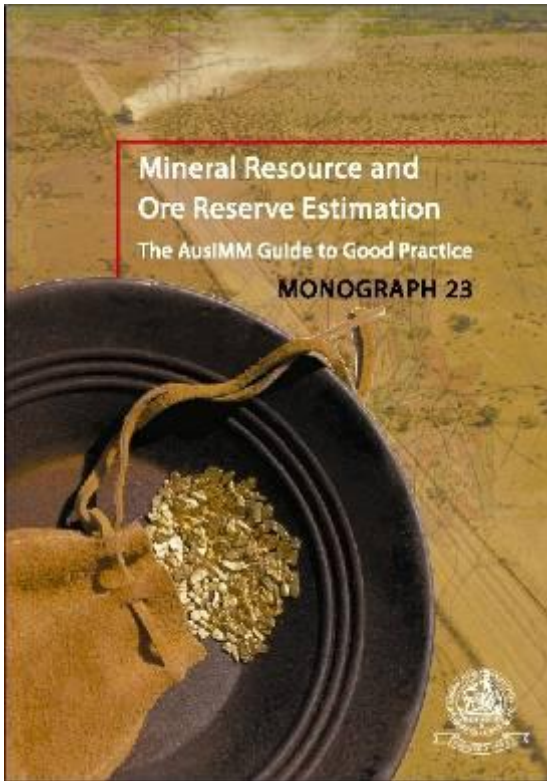


“My consulting fees as a CP are quite high, and yet as a junior company you say you have little money. I think I’m seeing a conflict of interest here.”



The Exchange considers that, as a minimum, the CP for an Admission Document should:

- ❖ be professionally qualified and a member in good standing of an appropriate recognised professional association;
- ❖ have at least five years *relevant* experience in the estimation, assessment and evaluation of the type of mineral or fluid deposit under consideration;
- ❖ be independent of the applicant, its directors, senior management and advisers;
- ❖ not be remunerated by way of a fee that is linked to the admission or value of the applicant; and
- ❖ not be a sole practitioner.



The JORC Code (under which ASX Companies must report) requires that the documentation on which such a report is based must be prepared by, or under the direction of, and signed by, a Competent Person or Persons.

- ❖ “A ‘Competent Person’ must have a minimum of five years experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity which that person is undertaking and be a member in good standing of a recognized professional body.”
- ❖ Under the JORC Code and under application of Australian Law there is no requirement to prevent a Director or an employee of the company being the Competent Person for the purpose of disclosures to relevant statutory bodies or exchanges.



The CP - Canadian Exchanges

Reporting to NI 43-101 standards a qualified person is defined in the National Instrument as:

- ❖ an engineer or geoscientist with at least five years of experience in mineral exploration, mine development or operation or mineral project assessment, or any combination of these;
- ❖ has experience relevant to the subject matter of the mineral project and the technical report; and
- ❖ is in good standing with a professional association and, in the case of a foreign association (is of recognised stature within that Organisation)
- ❖ The requirement for a Qualified Person in the NI 43-101 is different from that required by the JORC Code, wherein the person must have 5 years experience relevant to the deposit type or style of mineralization but is otherwise similar in terms of who may or may not sign off on such a document.
- ❖ It is considered unlikely that, in Mineral Reserve estimation, one individual will have the requisite skills or experience to cover all of the disciplines that are involved in the preparation of the estimate.



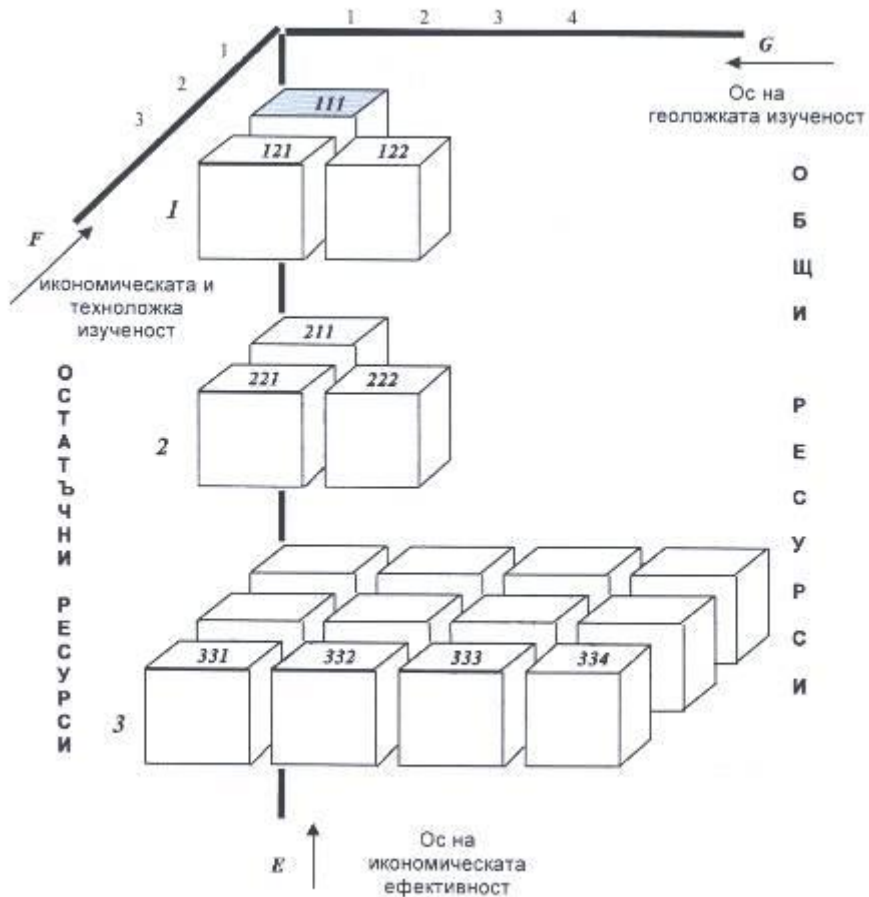
Reporting Standards

- ❖ Much debate goes on about which reporting standard should be used, PERC, JORC, 43-101 etc. Such debate may be relevant for SE reporting and the like but other systems may be needed.



Fine but !

- ❖ The problem with any so-called “International System” is that individual Governments will often adopt their own system for reasons such as granting of mining concessions, calculation of State royalty levels etc.
- ❖ For example -



111 - Proven Reserves

121 - Probable Reserves

122 - Possible Reserves

211 - Detailed Evaluated Resources

222 - Preliminary Evaluated Resources

331 - Detailed Established Resources

332 - Preliminary Established Resources

333 - Guestimated Resources

334 - Prognostic Resources

economic to mine

maybe potentially economic

not investigated economically



Local Classifications

Proven Reserves	Blocked out in three dimensions by underground development and adjacent to principal mine infrastructure and with a high likelihood of being mined. Sampled on all defining underground development. Has been estimated assuming dilution and extractability parameters.
Probable Reserves	Down dip of and adjacent to development on at least one side of the block. Sampled in any development adjacent to the block. Likely to be mined subsequent to further development and sampling. Has been estimated assuming dilution and extractability parameters.
Measured Resource	Blocked out in three dimensions by underground development and adjacent to principal mine infrastructure and with a high likelihood of being mined. Sampled on all defining underground development.
Indicated Resource	Down dip of and adjacent to development on at least one side of the block. Sampled in any development adjacent to the block. Likely to be mined subsequent to further development and sampling.
Inferred Resource	Adjacent to Indicated Resources and corroborated by a single surface drillhole suggesting likely continuity of the vein. Could possibly be mined after development and sampling.



The Answer ??

- ❖ Surely a better solution is to have the LSE appoint a “technical policing body” with a high level of authority and expertise and which examines reports made and confirms the appropriate qualifications and professional standing of the author of such reports whether in-house or as an appointed consultant.

Do mineral resources matter ?

Protest against reclassification of mineral reserves in La Paz,, Bolivia, April 2009



- ❖ At present, no university in the UK or Ireland teaches ore reserve and resource estimation as part of their undergraduate geology degrees.
- ❖ So how are geologists to learn the basics and become proficient unless its “on the job” training.



❖ Benjamin Franklin once defined a CAULIFLOWER as being a Cabbage with a college education.

