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18th June 2002

The Secretary
House of Representatives
Standing Committee on Industry and Resources
Parliament House
CANBERRA
ACT 2600

Dear Sir or Madam,

INQUIRY INTO RESOURCES EXPLORATION IMPEDIMENTS

I learned from a newspaper advertisment that the House Standing Committee on Industry and Resources is holding an inquiry into resources exploration.

I respectfully submit, therefore, the attached document for consideration by the Committee.

Yours respectfully,

Ian McDonald

A SUBMISSION

ON

RESOURCES EXPLORATION IMPEDIMENTS

IN

AUSTRALIA

Ian McDonald
June 2002

INTRODUCTION

I am a qualified geologist who worked for nearly thirty years in the mineral exploration and mining industries within Australia. Of this, almost twenty years were spent working within Western Australia. My career began in the nickel boom days of 1970; it survived through the relatively lean years of the seventies and early eighties to see the gold boom of the mid to late eighties, and its crash; and it continued until the end of the nineties to see the gradual contraction of the industry to its present state. During these years I worked in all aspects of the industry from grass roots regional reconnaissance exploration to a stint as an underground mine geologist. I mention all of this only to establish my credentials as someone who understands the industry by having seen it in good times and in bad times and who has seen it evolve into its present state. It also establishes that this submission will be mostly focused on mineral resources as opposed to energy resources. I believe that I am well qualified to make a submission on the present conditions, and future development, of the mineral exploration industry within Australia.

In this submission I am going to take it as a given, that increased levels of mineral exploration will have an overall beneficial effect for the population of Australia. Mineral and energy exploration promotes economic activity and has significant multiplier effects throughout the economy as it draws on goods and services from the wider community. Moreover it is one of the few genuinely decentralised industries within Australia and it has a capacity to transfer wealth from the cities into the remoter parts of this continent.

Economic altruism, however, will not generate exploration activity. Mineral and energy exploration will not be undertaken unless there is a widely held, and genuinely held, belief that exploration activity will pay for itself, either through the discovery of economically exploitable ore deposits, or through some other form of monetary return.

In this submission I will look at the different participants in the mineral exploration industry and how these different players view the probability of gaining a return from exploration expenditure. I will also look at some historical data on the nature of ore deposit discovery and I will suggest some measures which could promote increased exploration activity within Western Australia.

THE INDUSTRY PARTICIPANTS

There is a continuum of participants in the mineral exploration industry but they can all be fitted into four main groups:

- Individual and syndicate prospectors and prospector/miners.
- Small, or “junior”, explorers, usually public companies, which hold a portfolio of tenements but do not own any producing mines.
- Small mining companies which have a cash flow from a producing mine, or mines, and which may or may not hold mineral tenements which are remote from the mine site.
- Large, or “major”, resource companies which have significant cash flows from multiple mining operations.

Group number one is outside the ambit of this submission, because the activities of this group generate minimal downstream economic effects.

Group number two has always been the classic mainstay of exploration activity, here in Australia, and around the capitalist world. These companies spring up whenever there is a commodity boom and disappear from public view just as quickly when the market turns down and the aspirations of the company prospectus are not fulfilled. They have a fragile existence because they do not have any income. They live off their capital and entirely rely upon selling equity in their dream to fund their exploration activity. If no-one wants to buy the dream, these companies cannot, and do not, go exploring. These companies are small and have limited internal resources, but this group can have a disproportionately large multiplier effect on the economy of Australia. They spend a lot of the money at their disposal on outside services. These companies may not always spend their money efficiently or wisely, but they usually spend it fairly rapidly, and they spend it here. Any measures, which can make this group of explorers more active, will have an immediate impact on the economy through knock-on effects and could have a long-term effect through increased mineral discovery.

In the past the dividing line between groups three and four was probably a matter of subjective judgement, but recent trends within the industry are making this division much more marked. The large companies are becoming larger through mergers and the takeover of the companies in the middle ground. Both groups three and four fund exploration from cash flow. Exploration expenditure is, for them, a business expense, which can be written off against taxable income. This makes exploration activity relatively cheaper for groups three and four than for group two.

For the small, group three operators exploration funding will tend to rise and fall with commodity prices. They are, to some extent, tied to the same boom and bust cycles as the group two companies. In group three companies, exploration funding also has to compete with all the other operational and capital demands upon cash flow. Going to the market to raise funds for exploration is an option for group three companies, but this is not very attractive as it dilutes the profit stream to the existing shareholders. When small (and sometimes large) operators go to the market it is usually to retire debt and keep a struggling operation in production, not to raise funds for exploration. Overall, group three companies tend to be small contributors to exploration expenditure within Australia.

The group four, major, companies, to a large extent, have the capacity to fund exploration activity independently of cyclic economic factors. They have the capacity to sustain ongoing, technologically advanced exploration activity entirely from within their own resources. These companies ought to be most active, and have their greatest success, during the downturns in the exploration cycle because the competition for tenements is reduced.

Groups two and four, the junior explorers and the large corporations, are the two groups which have the greatest impact on exploration activity within Australia. Any incentives to increase exploration activity need to be directed towards these two groups. The incentives for each group will need to be different, reflecting the different character of the two groups.

THE MAJOR CORPORATIONS

In recent years the dominant trend amongst the large players, in the mineral exploration business, has been towards increasing corporate size and reduction in numbers through mergers and takeovers. In Australia this trend has been accompanied by a shift in control of activity to offshore entities. I had personal experience of this process when Electrolytic Zinc was taken over by North Broken Hill, who subsequently took over/merged with Peko Walsend to form North Limited, a fairly large Australian resource company. North, in their

turn were taken over by the multi-national Rio Tinto. Other examples of this process include the gradual merging of the companies Forsayth, Lauchlan Resources, Whim Creek, Grants Patch, Sundowner, Austwhim and Archaean Gold to form the Plutonic Group. Plutonic was then taken over by Homestake who have now been taken over by Barrick Mines. Acacia Resources fell to Anglo Gold, and in January of this year Normandy Mining, and all the subsidiary companies which it had absorbed, were taken over by Newmont. As I write this submission, the recent merger of Delta Gold and Goldfields to form Aurion Gold has just become the subject of a takeover bid by Placer Dome.

This process has reduced the number of explorers and consequently reduced employment and employment opportunities which flow from exploration activity. An even more disturbing aspect of the trend is that some of these major corporations see themselves purely as mining houses and have a policy of not doing any exploration. The takeover of Homestake by Barrick, for example, resulted in the closing down of the Homestake exploration department. Even that long-standing icon of Australian exploration, WMC Resources has ceased all grass-roots exploration activity. These corporations do not regard exploration as a viable way of growing their business. They choose instead to grow their business through merger and takeover. Large corporations now go exploring with financial analysts and not with exploration geologists.

The driving force behind these trends in the mining and exploration business is risk management. Large mining companies are business entities first, and miners second, and possibly explorers a distant third. They operate in the modern global business world and they remain viable by succeeding as businesses. Achieving this success by the mining, and possibly processing, of natural resources has come about only because they have a corporate history in the industry and a belief that they understand this industry better than any other. As major business entities, the large mining corporations have to compete with other types of major business for the money which the big institutional investors have at their disposal. The big money in the investment world is increasingly at the control of superannuation and pension funds. These investors require steady strong annual returns to satisfy the demands of their equity holders. They are not interested in the occasional bonanza return. Large mining corporations have had to design their business plans to fall in with these requirements. This is why all their actions are controlled by risk management. Exploration is regarded as a high-risk activity.

There are studies, by mineral economists, which support the view that exploration is a high-risk activity. In the early 1970s Western Mining Corporation was coming to terms with the dramatic growth that the discovery and development of the Kambalda nickel deposits had brought to the company. They wanted to be confident that they were putting their exploration effort into the places which had the greatest potential for mineral discovery. To help make these decisions they commissioned a study by a mineral economist, Brian McKenzie, to look at the amounts of money spent on exploration in different parts of Australia and to relate this to the value of discovered ore resources. They hoped that the study might show that exploration success in some areas was cheaper than in others. The study was biased towards the effectiveness of “modern” exploration. Certain very major mineral deposits, such as Broken Hill, were not counted on the income side of the ledger because they were regarded as fortuitous prospecting discoveries and not the result of any systematic exploration activity. The study by McKenzie showed that the cumulative historical claims for money spent on mineral exploration in Australia were greater than the value of the mineral deposits discovered by that exploration.

A similar study, with a slightly different emphasis was published in the late 1990s. This study concluded that running a mining operation in Australia was very profitable; that

developing and operating a mine in Australia was also very profitable; but that exploring for, discovering, developing and operating a mine in Australia was an economically marginal activity. Studies like these are the reason why large corporations in the mineral resources business regard exploration activity as an unacceptable risk. Increasingly they are relying on other organisations to take this risk and then pay a premium to buy the successes of the risk takers.

Any measure, which is designed to make undertaking exploration activity more attractive to a large corporation, will have to take cognisance of the desire to minimise risk, which drives these corporations.

THE SMALL EXPLORATION COMPANIES

There are two types of small companies which are involved in the business of exploration.

- Those which are running a business, which happens to be exploration.
- Those who are going exploring and happen to be doing it as a business.

History would suggest that there are more of the former type than the latter in Australia. In recent years the conversion of many resources companies into dot-com technology companies attests to the speculative business nature of these companies. The collapse of the dot-com boom and subsequent return of some of these companies to a mineral exploration focus only emphasises their intrinsic business nature. Small companies are also into risk management, but they have a very different philosophy of risk. They are willing to gamble their resources on a possible bonanza return. They manage this risk by selling it on, to like-minded gamblers, through the stock exchange. Shareholders take equity in these companies because they have a potential for dramatic capital gain. No-one buys these shares for an annual income, these companies never pay a dividend. Irrespective of how much or how little technical exploration expertise these companies may have, they all ultimately depend upon gambling money to provide the capital which funds their exploration activities. Because they have no income stream, they are very dependant upon a buoyant market sentiment and a ready supply of money which is looking for a high risk - high return investment. Unless success comes fairly quickly for these companies they are always faced with a struggle to raise operating capital.

The only real assets, which these companies have, are the mineral tenements held in their name. Offices and equipment can be rented, technical expertise can be hired on an as-needs basis, but the tenements are hard assets, which have to be protected. The cost of keeping tenements will take priority over doing any real work on them. This was very well demonstrated in recent times when the Western Australian Government tried to introduce an expedited approval system for tenements held up by Native Title Claim issues. The Department estimated that there were 2,250 tenements which could be granted through this process. In the event, less than 25 applications sought to take advantage of this procedure. Granting of those contested tenements would have brought with it, a requirement upon the companies to spend money, which they did not have, on exploration of the tenements. As long as the tenements remained in an administrative limbo they could be claimed as a company asset but without any need to meet expenditure commitments on them. The company remains viable, the directors receive their fees and the shareholders can retain the dream of a future bonanza.

Small companies can only be a significant force in mineral exploration when stock-market boom times give them an abundance of funds to spend on the ground. The recent trends

amongst small explorers have seen them either, be liquidated through lack of capital, or convert to a technology or finance company, or be taken over by a larger organisation. For many of these companies, being taken over is the best way of returning value to their shareholders.

Any measure, which is designed to make undertaking exploration activity more attractive to a small company, will have to be aimed at making access to speculative money more easy.

FACTORS IN EXPLORATION SUCCESS

By any objective measure the large corporations should be the most successful explorers. They have the capacity to pay for the best ideas, the best and newest technology, and back it up with the best in support services. Small companies traditionally spend too great a proportion of their resources on fancy offices, directors' fees and perks, company cars and business lunches. Real in-the-ground expenditure is small. Large corporations should beat small companies every time. Practice does not bear this out. Indeed, there is a popular belief that small companies are better at finding new ore deposits and that large companies are only good for developing and expanding discovered resources. The popular claim is that small companies are more closely involved with their projects and have a greater desire to find a deposit, whereas large organisations are too bureaucratic and to ponderous in their actions to seize opportunities. There may be some truth in this belief, and it is sometimes used as a justification for the lack of exploration activity by large corporations, but close examination shows that it is not entirely true. There may be more small companies who make new discoveries than there are large companies who do so, but equally there are far more small companies who fail to make a new discovery than there are large companies who so fail.

The rate of new deposit discovery is directly related to the number of participants engaged in exploration activity. Ore deposits are discovered during boom times at a far greater rate than they are during the bust times.

The study, referred to above, by Brian McKenzie for WMC in the early 1970s, also concluded that the best place to spend an exploration dollar was in the Western Australian nickel belt. This study was undertaken following the crash of the late 1960s' nickel boom. This boom was fuelled by massive stock-market activity. The name Poseidon still holds a folkloric place in the Australian psyche as a symbol of fortunes made and lost and missed out on. It was a common belief amongst the professional, technical explorers of the time that most of the money raised on the stock-market, during the nickel boom, was either spent badly, or straight out wasted, by small boom-time companies, who did not know what they were doing, but were having a good free time while they were doing it. Even if this was true, the McKenzie study showed that the value of the discoveries made during the nickel boom more than paid for all the exploration, good and bad, undertaken during that time.

Much to the chagrin of technically expert geologists, exploration success seems to be at least as much due to activity as it is to expertise. Activity may even be more important than expertise in producing new mineral discoveries. The technological wizardry available to the exploration industry has increased exponentially in modern times, but the rate of new mineral discovery has not significantly changed. Most ore deposits are still found during boom times.

The public provision of geoscientific data, and the involvement of public research institutions, such as university geology departments, in resources projects are of

relevance to the success of exploration programmes, but the relationship is not direct or simple. An outside observer would assume that a logical exploration strategy would first research a deposit style, get clever about it and then go out and find a new deposit. In practice the reverse is true. New discovery comes first, then research is undertaken to understand the nature of the deposit. This is because the research institutions only study the successes, they never study the failures. Only the successes can provide the information base to support an academic study and only the successes can afford to pay for supporting the research. In a similar, but less pronounced, way the State Geological Surveys and Federal bodies such as AGSO and CSIRO also tend to follow the trends rather than predict or promote them. This is largely due to the limited availability of public funding which would allow these institutions to undertake more speculative work at their own initiative.

Mineral explorers, both large and small, are deeply interested in publicly available data and are constantly lobbying for more funding to help produce more data sets and more geological interpretation. This is another part of risk management. Anything which is publicly available is something which does not have to be paid for in full. The more data which is available at low cost, the greater is the chance that someone will see an exploration opportunity in that data. One of the most valuable activities which public geoscientific organisations can undertake is the collection, preservation, indexing and integration of the Statutory Reports in their Open File systems. These reports contain a history of exploration activity and results for any area under consideration. The data contained in these reports can prevent new explorers from having to re-invent the wheel on a project. Any actions which can make this historical open file report data more accessible and more useable would be of great interest to the exploration industry. The conversion of historical hard-copy data to electronic database formats is high-priority activity in making this data accessible and useable.

There is a counter-argument to the public provision of datasets. There may be an element of cynicism in this argument but it is also underpinned by a sound philosophical view of exploration. It may be in the public interest to have new explorers re-invent the wheel on prospects. They may spend money to collect data which they would not spend if that data was publicly available. Non-provision of data may promote more economic activity than providing it would. More seriously, there is a very real danger that when large datasets are publicly available, everyone in the industry uses them. Everyone tends to follow the same ideas about the exploration potential of any particular area because these are the publicaly available and, therefore, true “facts” about that area. One of the reasons why the major corporations do not find lots of new deposits during the downturns in industry activity is because they all follow the same prescription approach to exploration. They all have the ability to buy all the latest information and all the newest technology to process it. And they all come to the same conclusions about prospectivity. During the boom times tenement pressures and frenetic competition prevent explorers from spending too much time agonising about prospectivity. The small companies, and some of the larger ones, just go out and do the work on the ground. As has been argued already, ore deposits are found during these boom times. There are numerous case-histories, from around the world, of major mineral discoveries being made because someone decided that the conventional view, of an area’s prospectivity, was wrong. Public availability of geoscientific data may be a double-edged sword.

If the discovery of new mineral deposits is an aim in Australia, the most important initiative, which can be taken, is the encouragement of as many active explorers on the ground as possible.

GOVERNMENT ACTIONS TO ENCOURAGE EXPLORATION

Ideally policy initiatives would try to generate conditions of perpetual mineral boom. Such an outcome is beyond the ability of government policy to achieve. Booms result from complex interplays of supply of and demand for commodities, the manipulations of the futures' market, financial trends and fashions in investment. Government policies must be aimed at stimulating activity during the downturns in mineral cycles. It has been argued above that the significant players, the large corporations and the small companies, both regard mineral exploration primarily as a business activity. Policy initiatives must be business orientated.

Large corporations will only undertake exploration if the risk to their bottom line can be removed, or at least significantly reduced. Some way has to be found of making exploration pay for itself irrespective of discovery success. The easiest way to do this is through taxation concessions. These corporations can already write off exploration expenditure as an expense against their income but this does not seem to be enough of an incentive. Allowing a taxation deduction of 125% or 150% of exploration expenditure may be enough to lure large companies into increased exploration activity. To ensure that this incentive would lead to real exploration activity, the allowable activities under the taxation concession would have to be strictly specified. For example, drilling, geophysical surveys, geochemical sampling and analyses, fuel used on mining tenements, and wages and salaries of employees whilst they are in field locations would be allowable, whereas capital items, office facilities, office salaries and wages, leasing of non-field vehicles, management overheads, and legal costs would not be allowable.

The same taxation incentives would apply to the small companies, but they do not have any income to write off the expenditure against. To make the initiative work for these small companies the concept of flow-through taxation credits would have to be initiated. Under this system, a company, which accrues taxation credits, which it cannot use, can pass them on to the share-holders in the company. In this way an investor in an exploration company could receive a taxation credit which he or she could use as a deduction against other incomes. This could greatly increase investment in junior exploration companies.

These taxation initiatives are in the preserve of the Federal Government. It is harder for a State Government to provide financial incentives of the same potential impact. Some suggestions are:

- Pro rata reduction in payroll tax for the time employees spend on field activities.
- Pro rata reduction in vehicle licence fees for the time they spend on mineral tenements.
- Return of tenement rentals once the expenditure requirement on a tenement has been met. The same rules on allowable expenditure outlined above could apply.
- Let expenditure on office activities, in designated remote parts of the State, be an allowable exploration expenditure.

There is one major issue, which has not been considered yet, which has the potential to totally discourage exploration activity. This is the issue of security of ongoing activity. No company, large or small, will go exploring if there is the possibility that exploration success can be defeated by factors outside the ambit of a Mining Act. If an explorer believed that the exploitation of a discovery could be prevented, by the retrospective application of an

environmental or cultural or political objection, then that explorer would not start the process of exploration.

A large resources company, for which I previously worked, had an evaluation check-list which was used to standardise the way in which it evaluated resources projects. In this list was an item called the “Fatal Flaw”. This item forced project evaluators to look for any factor which could threaten the viability of a project. In most cases the fatal flaw was not a technical issue. That is, it was usually not matters of tonnage or grade, which could kill a project. Usually the fatal flaw was of a broadly political nature. Issues such as sovereign risk, ability to repatriate profits, social stability or unrest, and on-going development approval processes, were the biggest project killers because they represented unacceptable risks to investment.

If Australia is to avoid losing potential mineral exploration activity because of “Fatal Flaw” factors, consideration must be given to changing the various Sate Mining Acts so that the granting of an exploration tenement grants the right to mine any deposit discovered on that tenement. Unless the right to exploit any exploration success is guaranteed, explorers will leave Australia and go to those parts of the world where this right is in place.