# Green Topics

# Environmental Management in Mining: An International Perspective of an Increasing Global Industry

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## Summary

The international climate regulating environmental management in mining is rapidly evolving through the combined influences of the development of international guidelines, resolutions, protocols, treaties and conventions; the influences of the international lending and aid institutions who seek a consistent but constantly evolving standard of environmental performance from their clients; the legal precedents being developed in courts all over the world; and the activities of multinational countries who tend to rapidly upgrade technological performance through their international activities (particularly influencing developing countries).

In this rapidly evolving regulatory environment, the more 'models' available to this international pool of resource materials that demonstrate practical, cost-effective and (most desirably) incentive based regulatory mechanisms, the better will be the eventual body of 'international standards' we will all have to work with. Australia can make a significant contribution to this process, however, it has only been on the margin of this dynamic, North American and European led process, up to this time.

It is in the Australian minerals and energy industry's best interest to take an active part in the evolution and direction of this process.


## A regulatory 'Gold Rush'

In 1995, one thing all governments desire is to have in place, sometimes virtually overnight, is an effective environmental regulatory system, complete with appropriate 'institutional capacity', comprehensive training and scholarship programs, a mechanism to fund inspection programs and an appropriate level of in-country analytical support. No longer is any government prepared to close its eyes to uncontrolled environmental degradation as a necessary accompaniment to new mining investment—even where new mining investment is an actively sought after prize.

Of course this rush of national governments wishing to 'do the right thing' reflects no sheer altruism on their part. The interest derives very firmly from economic influences, driven by forces such as World Bank Structural Adjustment programs, tied aid, global politics and trade considerations. No longer in any place out-of-sight-out-of-mind.

This process—particularly as viewed from the mining industry perspective—is shrinking the world ever more rapidly, as everyone looks to other's experiences for guidance on how to most effectively set up and implement and enforce these new regimes.

## Australia's contribution to international environmental standard setting

In this context, Australia can provide some of the best 'models' in terms of progressive, practically based approaches to the environmental management of mining and its regulation. Importantly, it is also developing some useful models of mining development agreements developed co-operatively with Aboriginal peoples (as landowners) and addressing issues of social impact.

In Australia we have such an array of ways of doing things—different approaches in each State, different responses determined by varying climactic and physical conditions, different standards reflecting different needs in particular areas and, of course, every mine a unique situation. This Australian experience, covering the management of every possible aspect of mine, land and regulatory management, is now keenly sought by both mine operators and regulators from scores of countries, who generally know little but like what they have seen. Regulators interested in our experience may be responsible for everything from mining regulation through water resource management, National Parks and conservation management, agriculture, soil conservation, 'women in development', health or legal areas.

A selection of Australian material is now finding its way into international publications, guidelines and training materials directed towards environmentally responsible management of the mining industry. Specific areas where our experience is particularly noteworthy include development and implementation of regulatory mechanisms, non-invasive exploration methods, site reclamation, operational environmental management systems, waste material characterisation and waste management practice, contaminated site clean up and environmental monitoring (including the analytical processes). Environmental information databases and GIS system development are other areas of particular expertise.

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The Australian EPA is currently working with the Australian mining industry to consolidate and promote this expertise and experience in a series of information booklets and videos which will contribute to an enhanced international recognition of these Australian skills, capabilities and technologies, supporting (among other things) a promotional program into the South East and Eastern Asian markets.

So what does all this do for those who have taken the trouble and paid the price of developing this expertise, ever raising the standards they then have to meet, not only in Australia, but increasingly in developing countries also? Is this now going to haunt these companies when they seek to explore and develop mines in developing countries? It is the author's observation that it significantly enhances an Australian company's opportunities to operate in another country when the government is familiar with the standard of environmental management presently conducted in Australia—and government support is, of course, all important in gaining access and tenure to mineral deposits and securing favourable operating conditions in the respective country. This trade-off should go a long way to redressing any perceived loss of competitiveness.

### An international standard?

In any case, within a very short space of time, we shall undoubtedly be seeing reasonably consistent standards, regulatory requirements and economic incentives in place throughout the world. If Australian 'models' are elements of this international standard, Australian companies are likely to fare better when operating in other countries, than if a perhaps more prescriptive USA/Canadian led approach becomes the dominant feature of the evolving international model. The more 'models' there are, however, to select from in the pool of international resources currently being drawn from, particularly incentive-based ones, the better this eventual international standard is likely to be for all parties.

Taxation and other economic incentives may vary to accommodate the needs of particular countries, however, a rapidly developing process of standardisation is clearly occurring at present—driven by concern for protection of national assets from long-term degradation as well as the pervasive influence of the lending and aid agencies. Considering the long time frames involved in mining investment, it is good risk management and makes sound business sense to develop mines and processing facilities in compliance with Australian ('home') standards wherever the mine is developed.

### Social and cultural issues

In a sense, management of the physical environment and compliance with standards is often the easy part. Integrating a major, environmentally and socially disruptive operation into a local community is a very much more challenging achievement.

This is where the blots on some Australian expatriate miners come to the fore—and I must admit to having been astonished at the vehemence from unexpected (international) quarters of the criticism levied at Australia's better known examples. Whatever the situation may have been in the past, and despite the 'buyers market' presently out there as many countries scramble for the mining investment prizes, it is today, undoubtedly a privilege, rather than a right, to be provided the opportunity to develop a mine in another community's territory.

This being the case, the people within that community must be satisfied that the right thing is being done by them if the operation is going to proceed smoothly and successfully.

### Mining as sustainable development

In today's jargon, mining in terms of 'sustainable development' can be interpreted to mean that a transparent process is put in place whereby adequate revenues generated by the exploitation of a non-renewable resource are suitably invested to ensure the future development of long-term sustainable livelihoods for the members of the affected community. This generally means development of small businesses, economic empowerment of women, renewable and sustainable local utility development particularly with regard to power and water supply, provision of essential services such as education, sanitation and health and infrastructure development (with some provision for long-term maintenance) and protection of environmental quality. It is imperative that mechanisms be implemented to direct mineral-derived wealth into these areas in such a manner as to avoid activation of the notorious 'Dutch Disease' which leaves most of the country's inhabitants facing economic ruin through currency inflation, and has often left a country (particularly a developing country) worse off than if the mineral wealth had never been generated.

It is not necessarily the responsibility of the mining company to implement or control all of these activities. However, it is vital that the mining company takes an active interest in ensuring that these things do happen as it is the miner who will suffer if the outcomes of the mining activity do not meet the expectations of the community (or are seen to be detrimental to a broad section of the community). Increasingly, development of small business enterprises are being actively encouraged and supported by mine developers, however, there is still considerable scope to ensure that exploitation of the mineral resource effectively provides a kick-start to the establishment of a long-term, sufficiently diversified and sustainable economic and environmentally acceptable base for communities' on-going existence.

While it can be argued that these responsibilities are those of government—and this I don't at all deny, if development of a better equipped and more economically sustainable community isn't established in the wake of mining, then the industry will continue to attract unwelcome attention from affected communities and increasingly effective non-government groups. Questions concerning exploitation of 'non-renewable resources' being exploited at unacceptable environmental and social cost will continue to be raised, and the country of origin of the developer condemned—the criticism of Malaysian companies due to logging practices in PNG is a good illustration of this.

### Past mining practices and land degradation—A mining industry responsibility

Another area that is increasingly coming under the international spotlight, and which generally places the industry in a

bad light is: how to reclaim the large-scale degraded areas, generated by mining and mineral processing practices, where there is no apparent source of funding for the clean-up. This has particularly become an issue in countries where the government has owned the operation but is now privatising as an urgent measure to generate revenue and restructure debt-ridden economies. The government usually has little or no funding for land reclamation, adoption of the 'polluter pays principle' generally means no international aid money will be made available for clean-up of a private-sector generated environmental problem, there is no private party to whom liability can be ascribed, yet an on-going source of environmental contamination, wildlife hazard and contributor to public health problems remains active.

Of course the obvious solution is to attract a new investor to purchase the operation and implement the clean-up. While this can and does in some cases prove to be a happy solution, in other situations such as in the centrally planned communist regime countries (e.g. Poland), the extent of contamination is so great in places and potential liabilities and risks so high that it is unrealistic to expect an investor will be attracted to the investment (the first priority) if it is burdened with the clean-up cost. If the site is not cleaned up, then what sort of environmental standards should apply? An audit can, in theory, identify pre-existing contamination and define a degraded environmental baseline above which any contamination becomes the liability of the new owner, however this is obviously a poor way of addressing environmental and community well-being.

It is undoubtedly the proper course that some means of clean-up be identified and implemented so that new investment and on-going operation is tied to the maintenance of an acceptable environmental baseline level. It is also appropriate that individual companies take responsibility for the clean-up of their old sites, even if long since abandoned. For communities to find the financial resources required for clean-ups and to be able to accommodate all such sites is patently unrealistic. It would seem much more practical, where no past owner is available to take responsibility, to develop a method of organising appropriate local groups to provide some material means of assistance, to contribute to a land reclamation exercise. Of course there needs to be motivation, as well as organisation and expertise. The opportunity for mining companies to provide active assistance and leadership in the development of such projects in countries where they have a close interest would seem to be a most valuable role that the industry could fill. With the well-honed negotiating skills that the industry is renowned for, surely there is scope to ensure a trade-off incentive is built in to any new mine development agreement between a co-operative 'reclamationist' company and the government.

Environmental and community well-being and reclamation of damaged land rate very high in the areas that urgently require assistance and leadership from a source that has both the necessary skills and the will to apply them. Surely this type of commitment coming from the mining industry is the kind of initiative and leadership that would be well received by the global Environmental Lobby.

### How the new environmental ethic is shaping the global minerals industry of tomorrow

Environmental lobby groups have had an enormous influence on the global perception of what is proper corporate and government responsibility for land and environmental resource management. Interestingly, much of what has been promoted over the years by this group as proper levels of stewardship, is now accepted by most of the population.

Indeed, the collaborative atmosphere between mining and non-mining environmental specialists that was generated by the 'Enviromine Australia' initiative in Sydney in 1992, demonstrated the extent to which the environmental initiatives taken by much of the industry have been endorsed by a wider population. Repeatedly we were told, however, that the initiatives would be much enhanced by a clearly articulated commitment by the industry to take appropriate measures to support community concerns. An Australian Minerals Strategy (drawing on the recommendations from 'Enviromine Australia' among other sources) would be of major benefit here.

In the international arena we are currently seeing two significant cases being played out in the courts that will undoubtedly continue to affect our industry. The best known here in Australia, is the Ok Tedi matter currently in the Victorian Supreme Court. The claimants in this case represent 6000 landowners from PNG's Fly Region seeking approximately $2bn in compensation for alleged environmental damage and changes to their lifestyle caused by waste disposal from the Ok Tedi Mine. Of equal significance, however, are the Texaco Inc, South American Oil Contamination cases which are contributing to the development of a classic format for an international, environmental damages case before the US courts. As a brief précis and in the words of D. Nelson and W.B. Prince (1995):

> *Residents of Ecuador (and more recently Peru) have filed actions in New York and Texas asserting a variety of causes of action arising out of the alleged contamination of air, ground and water in Ecuador from historical oil and gas operations. The alleged injuries are claimed to affect as many as 500 000 Ecuadorians in an area that covers one third of Ecuador ... the Texas court dismissed the claim ... the New York court retained jurisdiction until further discovery had taken place. The success of the New York plaintiffs appears to have come from the single allegation that* ***the alleged misconduct resulting in the damages occurred in the US.***
>
> *The defendant's multiplicity of defenses ... were dismissed by a court which seems to have bent over backwards to facilitate the plaintiffs' successful proof of its cause of action ...*
>
> *The frustration US courts are experiencing in attempting to fashion fair and equitable procedural remedies for international plaintiffs' becoming obvious ... judges are reaching to embrace international considerations of liability concepts for multinationals ... today's policy considerations are tomorrow's legislative enactments ... the court reached what may be cited as a giant leap for international environmental agendas by concluding that "perhaps the most pertinent [authority] in the present case is the Rio Declaration on Environment and Development ... The Declaration in a very real*

*sense has been described as "a carefully expressed statement of jurisprudential intention ... **a register of world community legislative intent** ... The Rio declaration has given voice to environmental trends emerging country-by-country worldwide: open access to information, citizen participation, liability/ compensation schemes for pollution damage, and environmental assessments". [author's emphases]*

The implications of cases such as these, lies in both their ready incorporation into the body of 'international law' as well as providing a mechanism for the body of 'soft law' (international guidelines and resolutions) to be drawn into domestic law. As an illustration, recent changes to our own legal framework, as a direct reflection of the international conventions and treaties to which Australia is a signatory, includes passages such as:

*Ecologically sustainable development requires the effective integration of economic and environmental considerations in decision-making processes. Ecologically sustainable development can be achieved through the implementation of ... the precautionary principle—namely that if there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as reason for postponing measures to prevent environmental degradation ... (NSW Protection of the Environment Administration Act, 1991).*

## Conclusion

In the context of this contemporary international and domestic legal framework and the trends we see evolving it is important that the Australian industry contribute with our best 'models' to the fashioning of the evolving 'international standard'. It is also more important than ever that the minerals industry establishes its rightful place in society by not merely seeking technological excellence, but also by demonstrating the will to apply to community problems the skills and resources already forming an integral part of modern day mining company management. This commitment, combined with the motivation to become an industry that the global community seeks to support as a valued member of the community, could radically change the image and place of the mining industry in society. This would seem to be the appropriate and most ethical path to ensuring that communities will, over the longer term, have the interest to accommodate and legally provide for, the necessary requirements of land access and security of mineral resource development tenure that are fundamental to a thriving industry.

## References


1. Epps, J.M. 1994. Mining and Environment—An International Perspective, in *Proceedings of the 19th Annual AMIC Environmental Workshop*, Volume 1. Karratha, Western Australia.
2. Nelson, D., and Prince, W.B. 1995. Developing an Environmental Regulatory Model—Piecing Together the Growing Diversity of International Environmental Standards and Agendas. *International Resources Law 11: A Blueprint for Mineral Development.* Mineral Law Series, 1995:2 (Rocky Mountain Mineral Law Foundation: Colorado). ◆


## Industry laments demise of the US Bureau of Mines*

The US Congress has voted to close the US Bureau of Mines, which over the past 85 years has developed an unrivalled pool of expertise and access to mineral information. Some of its operations will be transferred to other agencies, but important environmental and remediation and pollution prevention research will be terminated. Industry executives have expressed alarm at the possible loss of the Bureau's mineral information activities, which include statistical gathering and the maintenance and analysis of more than 100 commodities in 190 countries. Outside the USA, the reaction from industry has been one of anger. In a hard-hitting commentary, the editor of the *Mining Journal* describes the Bureau as being 'in the vanguard of the world's mining research establishments and if it is dismantled or dispersed, we will all be the poorer'. ◆

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