Presentation to the Constitutional Court of Indonesia Regarding Mining and the 1999 Forest Act

June 2, 2005

Catherine Coumans, Ph.D.
MiningWatch Canada

Selamat Pagi Majelis Hakim yang Mulia. I would like to thank this court for inviting me to come from Canada to address you today.

I will briefly discuss three issues in relation to the concerns before this court:

1. "No Go" Zones for Mining
2. Environmental concerns associated with mining (water and soil)
3. Mining companies' inappropriate involvement in developing and changing legislation that affects them

Recognizing the need for "No Go" Zones for Mining

A discussion of mining in the context of protected forests must start with the recognition that mining does not hold a privileged position over and above all other economic activities or above all other human needs and values **and** that mining is not always the highest and best use of a particular piece of land.

Some mining companies have recognized that from the perspective of "Sustainable Development" and "responsible mining," there are certain standards of best practice that they must meet, and certain limitations on their activities that they must accept.

Responsible companies are willing, for example, to make public commitments that they will never use certain technologies, such as Submarine Tailings Disposal (dumping mine waste into the sea), as it is unproven and potentially very harmful. Responsible companies accept high standards for their environmental and social practices. These companies also agree not to use bribery to achieve their goals, nor armed forces to quell opposition. Responsible companies accept that there are certain areas in the world where mining is **not** an appropriate activity. And responsible companies would never threaten a sovereign government with legal action if they are not granted exemptions from laws of the land aimed at protecting that country's highly valuable and fragile ecosystems for this, and future, generations.

Increasingly, there is an awareness that certain areas are not appropriate for mining and should constitute "No Go"Zones for mining.[1] These "No Go zones" include:

- Small Islands (where waste disposal forms an unacceptable burden)
- Mountain tops (especially in tropical regions where waste disposal forms a high risk)
- Protected Forests

Canada and Indonesia have in common that we are among only a handful of countries that boast the greatest proportion of the world's remaining forests. Our governments and our people recognize that these

[1] See Miranda et al, 2003. Mining and Critical Ecosystems: Mapping the Risks. This text provides case studies from the Philippines and Papua New Guinea.

forests are an incredibly valuable commodity, and becoming more valuable with each year as such intact forest regions become increasingly rare on earth.

An intact forest ecosystem provides a range of sustainable, and free, goods and services that, valued in monetary terms, are irreplaceable.

- Forests provide free services such as cleansing water and air of pollutants
- Forests provide highly valued and renewable forest products and livelihoods
- Forests provide a rich genetic pool that is the basis for many of the world's highly profitable pharmaceuticals.
- Forests prevent costly erosion
- Forest prevent salination
- Forests provide protection for critical watersheds
- And, finally, forests will help Indonesia meet Kyoto commitments

Increasingly, the sustainable values of forests are recognized in the land use planning of governments. In good land use planning, decision are made about what is the highest and best use of various types of land taking into consideration the needs of the current population and future generations.

From a sustainable land use planning perspective, mining is an inappropriate industrial use of valuable and fragile protected forests because of mining's serious and long lasting impacts on soil and water resources. I will discuss this further in the next section.

Some mining companies have accepted the importance of protecting critical ecosystems and that protected areas are not appropriate places for mining. Recently, the International Union for the Conservation of Nature and the multinational mining company members of the International Counsel on Minerals and Metals have been engaged in a dialogue regarding the issue of mining in protected areas. The members of the International Counsel on Minerals and Metals have now agreed not to mine in World Heritage protected areas and they are continuing the dialogue to look at other types of protected areas as off-limits to mining.

Unfortunately, as countries such as Canada increasingly recognize the value of their forests and take steps to protect them, less responsible mining companies go overseas in search of countries that are not protecting their forests – or where they can influence governments to reduce their protection.

Environmental Concerns Associated with Mining in a Protected Forest

The 1999 Forest Act defines a protected forest as an area that is set aside to sustain and manage critical watershed functions, protect fresh water resources, prevent the intrusion of salt water, prevent soil erosion and flooding and maintain soil fertility. These are all critically important functions of an intact, healthy forest. It appears that many of the protected forest areas in Indonesia are also areas with steep slopes.

There are a number of reasons why open pit mining is not compatible with the aims of forest protection as set out in the 1999 Forest Act.

1) Open pit mining removes and degrades large areas of top soil for the pit(s), for roads, for waste dumps and for infrastructure (buildings, housing etc.).
2) Mine waste (tailings and waste rock) from open pit mining presents major risks for dam failure and catastrophic waste releases – particularly in mountainous areas and in high rainfall conditions
3) Mine waste from sulphuric ore bodies can become acidic in a process known as Acid Mine Drainage threatening surface and ground water quality with environmentally toxic levels of metals and low pH.

Open Pit Mining's Biggest Problem – Waste

Volume

The biggest environmental problem facing mining companies world wide is the problem of their (frequently toxic) mine waste. Modern open pit mining has a very high "waste to product" ratio. There are roughly 99 tonnes of waste to each tonne of copper retrieved and the production of a single 18 Karat gold ring weighing less than an ounce generates at least 20 tonnes of mine waste.[2]

It is not an exaggeration to say that mine waste — waste rock (from blasting) and tailings (the ground up rock material left over after the target metal has been removed) — is mining's main product. The numbers above do not even factor in the topsoil that is removed for an open pit. This material is called "overburden" by the industry. While preservation of topsoil is a goal in a protected forest, topsoil is a waste product in open pit mining.

It has been estimated that the Canadian mineral industry produces one million tonnes of waste rock and 950,000 tonnes of tailings per day totalling 650 million tonnes of waste per year.[3] This is more than 20 times the amount of municipal solid waste produced per year by all residences, industries, commercial institutions and institutions in Canada combined![4] Globally, humans now move more earth by mining than is carried to the sea by all the world's rivers.[5]

The sheer volume of mine waste is a source of danger to the environment and to human communities, particularly when mining takes place in the mountains, as is frequently the case in countries along the "rim of fire."

In the mountains, mining companies often situate their tailings dams in valleys at the headwaters of rivers. It is extremely difficult to maintain huge volumes of mine waste in the mountains in the face of gravity and tropical rainfall and typhoons, which add pressure on dams. Catastrophic dam bursts, many of which have been recorded in the last ten years, threaten communities and the waters of the rivers below.

More commonly, the daily toxic leaks and seepages from these dams in the mountains have serious implications for river water quality and for communities living downstream from the mines.

Toxicity: Contamination of surface and ground water

Mine waste poses an environmental threat not only through its sheer volume, but also because of its toxicity. Most hard rock metal mines are associated with sulphide ore bodies that are prone to a chemical process known as Acid Mine Drainage (AMD). When sulphide in the waste rock and tailings is exposed to air it oxidizes, when the oxidized tailings come into contact with water, for example through rainfall, environmentally toxic sulphuric acid is produced. This acid may have a pH of 3 or lower while normal pH for environmental water is around 7. A pH of 3 is comparable to than battery acid. Not only does the acid

---

[2] Gardener, G. and P. Sampat. 1998. Mind over Matter: Recasting the Role of Materials in Our Lives. Worldwatch Paper 144. Washinton: Worldwatch Institute.
[3] Government of Canada. 1991. The State of Canada's Environment. Ottawa.
[4] Total municipal and solid waste generation in Canada is estimated at about 30 million tonnes per year. Winfield, Mark and C. Coumans et al. 2002. Looking Beneath the Surface: An Assessment of the Value of Public Support for the Metal Mining Industry in Canada. Footnote 15 p. 10.
[5] Young, J. and Sachs. 1994. The Next Efficiency Revolution: Creating A Sustainable Materials Economy. Paper 121. Washington: Worldwatch Institute.

drainage itself make ground and surface water toxic to most normally occurring flora and fauna, but the acid also leaches heavy metals out of the tailings and waste rock and carries them into the environment where they may threaten animal and human health. According to the United States Environmental Protection Agency, water contamination from mining poses one of the top three ecological security threats in the world.[6]

It is very important to understand that this chemical process of Acid Mine Drainage does **not** stop when the mine is finished. Many modern open pit mines only last for 10-15 years, but AMD from the mine waste they leave behind can easily continue for hundreds and even thousands of years. There are historic mines in Europe dating back to the time of the Romans that are still leaching acid and metals into the Baltic Sea today.

Acid Mine Drainage and Metal Leaching are a major threat to both surface and ground water.

Mining companies will argue that they will cap off their tailings impoundments after mining finishes to seal them off from oxygen and so slow down the AMD process. And they will tell you that they will collect the runoff from these capped impoundments and treat it with lime to bring up the pH and precipitate out the metals before releasing the clean water back into the environment. The truth is that we cannot point to many examples in the so-called developed world where such model closures have been carried out, let alone in Asia Pacific. It is worth remembering that closure activities largely happen after the mine is closed and is no longer generating any profits. In Canada alone there are over 10,000 abandoned mines – many of them are producing Acid Mine Drainage. The clean up of these mines, for so far that is even possible, is now the responsibility of the Canadian tax payer and is estimated by the Mining Association of Canada to be C$ 6 billion.[7]

And even if a mining company in Indonesia does secure its mine waste in the mountains and caps it off to slow down the AMD process. Will that company still be here a 100 years from now, ten years from now, even 5 years from now, to make sure the dams do not burst flooding toxic waste down the rivers, or simply to catch the AMD runoff and treat it with lime on a regular basis so it will not contaminate the environment?

Imagine all of this happening in a protected forest. For a mine with a relatively short mine life (10-20 years), usually foreign owned so that most of the profits leave the country, Indonesia could be left with millions of dollars of liability and clean up costs.

Open Pit Versus Underground Mining

This brings me to the issue of open pit versus underground mining. There are a number of important considerations in this regard. First of all, underground mining produces less mine waste. This, as my discussion above makes clear, is a major advantage. Secondly, it does not damage the above ground landscape as much, which is important both from an aesthetic point of view – a mountain is still a mountain and not a hole in the ground – as well as from a conservation point of view as flora and fauna are less affected. Finally, an underground mine is often somewhat easier to reclaim. It remains highly questionable whether any type of mining is appropriate in a protected area, but if there were to be mining, underground mining would be preferable. It is my understanding that at least 7 of the 13 concessions seeking special exemptions from the 1999 Forest Act prohibition on open pit mining could be mined through underground mining. It should be explored further why mining companies that could mine via underground methods – which are not prohibited in the 1999 Forest Act – are asking to be allowed to use

[6] Coumans, C. 2002. STD Toolkit. p. 1.
[7] Robinson, A. Mining Industry Lobbies for Future of Industry. The Globe and Mail. September 14, 1994.

open pit methods. I would respectfully submit that in a protected forest, economic considerations are insufficient grounds to grant exemptions for a form of mining that may be cheaper for the company but will cost Indonesians of this and future generations dearly.

Mining companies' inappropriate involvement in developing and changing legislation that affects them

All over the developing world, Mining Acts are being redrafted in ways that make countries more lucrative places to do business for international mining companies. More often than not governments are urged by the world's major lending institutions, the World Bank, the International Monetary Fund, to "open" their natural resources up to international mining companies under favourable conditions for the industry in order to generate revenues with which to pay back World Bank debts. And more often than not, mining industry executives from major companies from the "developed" world are at the table advising on how the new laws should be drafted.

There is something very disturbing when the industry that needs to be regulated is involved in determining the very conditions for its operations. There is a serious loss of checks and balances in this system It gets worse when, over time, a government recognizes the urgent need to set more stringent measures in place to protect the natural heritage of the country for future generations, and that government finds itself threatened with legal action by the very companies it is hosting under favourable conditions, even though that government is fully in its right to change legislation as and when it is necessary.

[I have to step out of my role as expert witness here to say that as a Canadian citizen I am deeply ashamed that Canadian companies have been implicated in threatening to sue the Indonesian government for its rightful and laudable effort to provide greater protection to highly valuable and fragile forest ecosystems.]

Responsible mining companies understand the importance of protecting critical ecosystems and they respect limitations on how and where they can mine and they respect the duty of governments to set those limitations, Responsible companies do not threaten governments, they do not try to bribe government officials, or to force governments to make decisions that put them into a constitutional crisis, such as the one being considered in this hearing. It is noteworthy in this context to realize that more than half of the companies seeking special status are foreign owned.