PLACING RECLAMATION IN THE BROADER CONTEXT OF ENVIRONMENTAL IMPACT MANAGEMENT

A PANEL DISCUSSION INCLUDING:

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The panelists' presentations have been transcribed from recordings with limited editing.
Ray Crook (Moderator)

- By way of introduction, I would comment that prior to about fifteen years ago there was probably no consideration of "minesite reclamation" at all.

- Over the last fifteen years we've developed the concept of site rehabilitation and reclamation as narrowly defined in the Mines Act and many people in the industry feel that this is the only type of environmental mitigation that should be required.

- Increasingly, however, through the Mine Development Review Process, approval-in-principle is requiring considerably more than just a reclamation program.

- New requirements include a water management plan, a waste management plan, as well as complying with ambient, off-site air and water quality objectives and mitigating impacts on wildlife and fisheries, which often go well beyond the mine site and can only be dealt with effectively at a regional level.

- Thus current environmental impact management programs go far beyond mere site reclamation. Today's task is to ask ourselves how reclamation relates to these broader programs. I'm going to ask Norm Ringstad to lead off the discussion from the point of view of the Ministry of Environment and Parks, and then I'll ask each of the other panelists to give their perspectives.

Norm Ringstad, Ministry of Environment and Parks

- I'd like first to reinforce Ray's observation that in the 1970s reclamation was seen by almost everyone involved in the industry as the only activity required for short and long term impact mitigation.

- I've always held the view that reclamation is only one of a number of tools necessary for impact management. Others are to avoid impacts altogether or to minimize them by good on-site mine planning, and off-site mitigation to replace habitats or resources lost in the time period between mine development and final decommissioning.

- I'd like to return to a figure from John Dick's presentation this morning in which he graphed three different scenarios of resource status (or supply) and resource use (or demand) and the impacts of one or more industrial projects on that relationship.

- In particular, I'd like to talk about the top figure in which John has indicated his view that in a situation where resource supply exceeds current levels of use, no off-site replacement should be required and all that is necessary is effective reclamation at mine closure.

- I take exception to this view for a number of reasons. First, very often one mine with associated access only serves to open up an area to further development, and second, if the "first in" are absolved of their mitigation responsibilities, mitigation becomes
increasing burdensome for subsequent operators. I believe that each operator must be responsible for offsetting all of the impacts identified as resulting from their project.

- I agree with John's contention that in a region with several projects there should be a collective acceptance of responsibility and cooperative programs of impact management by both government and the industry. As John indicated, such an approach is likely to be more cost effective and will be perceived by the public as contributing to good resource husbandry.

Ron Hillis. Utah Mines Ltd.

- We in the mining industry have always contended that there must be some reasonable limit to our impact management responsibilities; depending, of course, on the value of the resources we're disturbing.

- Reclamation is one responsibility that, I think, we all accept and if it is combined with other impact mitigation activities and built into mine planning from the outset, it can be very effective.

- Compensation for, or replacement of, lost resource values over the life of the mine (or the duration of the impacts) is another issue that probably needs to be addressed here. This issue came up during an economic study of our Island Copper operation about eight years ago. As you may know we discharge our tailings into Rupert Inlet, a marine system that supports a significant commercial and recreational fisheries resource. The economic study was undertaken as a masters thesis and looked not only at the costs over the projected life of the mine but also the cost of estimated long-term resource and resource use impacts. When we extrapolate this kind of philosophy up to the end it could be argued that we're economically advised to leave the area alone; i.e. don't exploit the mineral resource.

- We have to make sure that we don't get into that realm and that's why there obviously has to be some consideration given to some logical and considered evaluation of the level of compensation that a company should be responsible for.


- Reclamation is a major component of long-term impact management. I believe the objective is to maintain an efficient, cost-effective operation that minimizes adverse impacts on the environment and mitigates impacts through reclamation over time.

- Environmental impact management can in most cases be accomplished through comprehensive water and waste management and reclamation planning for wildlife habitat restoration.

- A cooperative approach to studying the environmental impacts associated with mining operations is needed. Monitoring to develop background information for
effective planning and to set realistic objectives is required, and an effective monitoring system must be developed to quantify impacts.

- In short-term reclamation the objective is to provide a vegetation cover that stabilizes the land surface. In long-term reclamation, new technology must be developed and implemented to achieve effective reclamation.

- Mitigation for reduction in wildlife winter and spring range can be accomplished through effective reclamation. Only where impact analysis demonstrates that the disturbance from mining has reduced winter and spring range below the carrying capacity necessary for the maintenance of wildlife populations should offsite habitat enhancement or replacement be considered. This may include selective cutting, burning, fertilization and the planting of selective species.

- In my philosophy, the key words for environmental impact management are monitoring, realistic objectives, factual decisions, and mitigation by reclamation.

Tony Milligan, Westar Mining Ltd.

- Effective reclamation is possible if it's well planned and prudently carried out, however, it has one serious drawback - it's always after the fact. It may be many years before a piece of land can be put back into production once mining commences. This may or may not be important depending on resource values and land use.

- I can only speak from my experiences at Westar, where land use objectives for the property were established some years after mining began. Much of the mine site was zoned as important ungulate habitat, primarily of two types - summer range and critical winter range.

- Summer range is not a limiting factor for elk, moose, deer and bighorn sheep in the Elk Valley. Winter range, however, is a critical to population maintenance and the loss of significant areas of winter range for a period of ten to fifteen years can have real impacts on animal numbers.

- There are a number of options for dealing with serious winter range reductions. As already discussed, we can enhance other winter ranges in the vicinity of the mine to make up for the loss of productivity or we can increase allowable hunter harvest or relocate animals to reduce the population to carrying capacity. Last year we used a combination of hunting and relocation, in partnership with the Ministry of Environment and Parks, to reduce elk numbers on our property.

- We have had excellent cooperation from government agencies, conservation clubs and the public in carrying out these programs. A lot of people criticize us because they say we're "in bed with government". My response is "so what". We see more problems being solved through consultation and cooperation than through confrontation.
Bruce Switzer, Switzer Environmental Engineering Ltd.

- The main thing that bothers me in what we're discussing here, and I know that it bothers a lot of senior people, is that mining seems to be held to standards that aren't applied to agriculture, private construction, forestry or other sectors. I think that when we consider reclamation on a specific project it should be considered within the context of broader land use management plans.

- Having said that, I consider reclamation as having two phases. There is a start-up phase where a very large area is disturbed in a very short period of time and a sound water management and reclamation program must be in place as the mine is being constructed. This takes us to the second phase of reclamation and the subject of resloping waste dumps. The costs of resloping will probably be in the order of tens of millions of dollars. In this day when most mining companies are hanging on by their fingernails, I think this represents an unreasonable cost.

- I think that if there is some very significant social or environmental value that justifies resloping, then that condition should be established in the regulatory review at the front end of the approval process, rather than at some point down the road after you're in operation. Presumably the purpose for this so-called 26° angle of biological repose is to return the land to whatever was there before and in most cases this is extremely difficult to justify.

- What I'm going to propose, as a more reasonable approach to this second phase of reclamation, is that I don't think dumps should be touched at all. Assuming they're stable, assuming there isn't an erosion problem they should be left as they are. An analogy that comes to my mind is Annacis Island where Richmond is located. Annacis Island was probably the most productive agricultural land in Canada, maybe argueably in North America. Well, its all been paved over and you could put every mine in British Columbia on the Island and still have room left over.