

FAX MESSAGE

* BRIAN PENNY
* Phil MARTINE.
for your comments



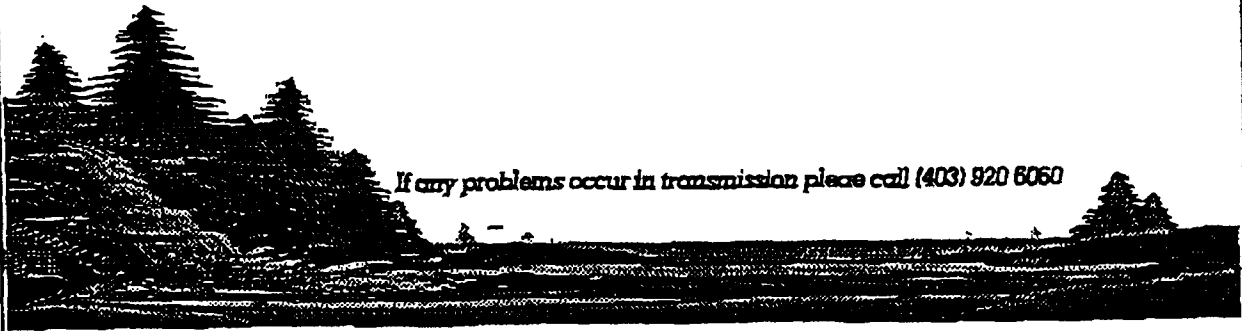
ENVIRONMENT CANADA
Environmental Protection Branch
Prairie and Northern Region
NWT Division
Box 370
Yellowknife, N.W.T., X1A 2N3
PHONE: (403) 920 6060
FACSIMILE (403) 873-8185

TO: JOHN STARD

TELEPHONE: _____

FAX NO: 873-2980FROM: E.D. COLLINS

COMMENTS: PAGES OF THE DRAFT REPORT
THAT MENTION YOUR DISCUSSIONS WITH
RFI DURING OUR JUNE 13 MEETING.
PLEASE LET ME KNOW IF YOU HAVE ANY
CONCERNS A.S.A.P. THANKS

NUMBER OF PAGES 11 (INCLUDING HEADER) _____ (short) _____ (long)DATE: JUNE 24/96

If any problems occur in transmission please call (403) 920 6060

Giant Mine Control Options Report

stream. This also appears to be unlikely. According to Hatch (1996), As_2O_3 has sold for \$2.20 per kg to preservative producers, but this appears to be based on a 1969 reference. The Hatch study further notes that supply has often exceeded demand and only the highest purity arsenic compounds have found a market. A 1981 paper on *Gold Roasting At Giant Mine* indicates that As_2O_3 prices were unstable leading to a growing inventory of baghouse dust containing As_2O_3 . The GNWT 1991 report also mentions the As_2O_3 market and the fact that this substance is largely in storage. No arsenious trioxide was commercially sold in Canada in 1992, 1993, or 1994 (Mining Association of Canada, 1995).

3.2.2.4 Added impact of negotiated options

Both an SVA and a covenant could address issues in addition to atmospheric emissions of arsenic. This opportunity could be attractive to the company.

In particular, an SVA could be developed to address all of the environmental issues relevant to the mining operation. This approach could offer a number of benefits to the mine relative to a regulated approach:

- the opportunity to identify and discuss more complete aspects of the problem, allowing the agreed upon measures to reflect a multi-media, "ecosystem approach" perspective, and to be based on systematic trade-offs among all possible issues;
- increased flexibility in terms of how and when to address an issue;
- some assurances concerning long term certainty in terms of how government policy will develop and be applied;
- a new relationship with government, in which they are treated as equals; and
- an improved public image.

Our preliminary research confirmed the company's potential interest in this approach. Faced with the prospect of a number of costly additional

Giant Mine Control Options Report

environmental control measures, mine officials indicated their preference in informal interviews with us for a management option that ensures an integrated approach to environmental management, and one that allows greater flexibility in terms of implementation. Specifically, the company would prefer a management option which permits an integrated (and hence lower cost) resolution of the atmospheric arsenic, underground storage and sulphur dioxide issues. A covenant could allow the company to address other aspects of the local community's concerns. In particular, it could provide a vehicle for the company to address and resolve community complaints by addressing additional dimensions of the issue such as the need for risk communication and remediation. At minimum, it could establish a process whereby these parties can work out issues face-to-face, provided the parties believe that such a dialogue would be fruitful. As we discuss further, below, the company is less interested in this approach.

3.2.2.5 *Summary of differences among management options*

In theory, each of the management options should impose the same costs on the company to reduce atmospheric emissions of Arsenic. Each option can be structured to provide the company with considerable flexibility in terms of how to achieve a prescribed reduction. Similarly, the timing of each could be structured so as to provide for a realistic investment period for the company. In practice, however, the negotiated options may provide more opportunities for the company to ensure that the timing requirements do not impose undue costs.

In any event, the negotiated options could also address different issues and therefore result in a different overall impact on the company. For example, if a community covenant addressed issues of concern to the community in addition to current arsenic emissions (e.g. risk communication, compensation or remediation), it could cost more to implement than a regulation, but could provide the added benefits of reducing the currently high tension between certain elements of the community and the mine.

Giant Mine Control Options Report

In theory, an SVA could be structured to address all of the environmental issues that are currently - or will be regulated - by the NWT, DIAND, and Environment Canada (e.g. SO₂ emissions, underground storage, atmospheric arsenic, etc.).

Such an integrated approach might allow for a cheaper overall resolution of these issues than the current approach, and is therefore attractive to the company.

3.2.3 Impacts on Government

3.2.3.1 *Regulated performance standard*

The costs to government of designing, promulgating, administering and enforcing a regulation are fairly well understood, albeit difficult to predict with any precision. These costs would include:

- further technical analysis;
- consultations;
- legal drafting;
- Gazetting and further consultation;
- training of enforcement personnel;
- promulgating information to the regulated community;
- monitoring (e.g. reviewing self reported information);
- enforcement (including regular inspections and inspections and investigations in response to public complaints or perceived violations);
- response to public requests for information; and
- administration (such as providing information to CEPA annual reports, Minister's briefing notes, etc.).

Giant Mine Control Options Report

- the Federal government (DIAND, Environment Canada);
- the Territorial government ;
- the NWT Water Board;
- Royal Oak;
- the local aboriginal community (Yellowknives Dene Band); and
- the local municipal government.

This section describes some of the concerns and comments communicated to us by these groups. Since the federal government's position is already well known to the Task Force members, this section discusses the issues of concern for each of the other five stakeholder groups. In some cases these concerns are directly relevant to airborne arsenic and the control options. In other cases, they may not be directly relevant, but may nonetheless influence the likelihood of success of the management options and should therefore be taken into consideration.

We emphasize that the following are observations based on informal discussions with interested individuals. Analysis of these issues was well beyond the terms of reference for our study. Accordingly, we present these concerns as possible issues to be addressed in subsequent analysis if deemed appropriate by the Task Force. We have not attributed comments to any specific individuals.

3.2.5.1 GNWT Department of Renewable Resources

The GNWT Department of Renewable Resources main concern with respect to the mine at present relates to SO₂ emissions. The Department has prepared a draft regulation to control SO₂ and has circulated it for public comment. According to GNWT officials, the government has attempted, without success, to convince officials at the Giant Mine to comply voluntarily with SO₂ guidelines and believes that regulation is required to achieve their emission objectives. When asked whether the GNWT would consider participating in a broader discussion of management options applied to the mine, perhaps in the form of an SVA or community covenant, officials replied in the affirmative but

Giant Mine Control Options Report

emphasized that they would not consider delaying the regulations to accommodate such a process.

3.2.5.2 NWT Water Board

We did not meet with representatives of the Water Board, but it is clear from discussions with other stakeholders and from a review of the Giant Mine's water license, that this body and the process it administers play a central role in the overall regulatory regime applied to the mine. All parties expressed concern over the arsenic trioxide storage issue. The chief concern has to do with who will be responsible for what are likely to be very high costs of cleaning up the site once the Mine closes. At present, the water license requires Royal Oaks to conduct a study of the issue and to amend its Abandonment and Restoration Plan based on the results of this study. Members of the Water Board Technical Advisory Committee (TAC) are apparently dissatisfied with Royal Oak's progress to date on this issue. It is difficult to predict what effect this issue may have on the upcoming license renewal in 1998.

3.2.5.3 Municipal Government

Municipal government officials are concerned about the health effects of arsenic and about the public's concern over these health effects. But it is their opinion that the negative effects of airborne arsenic are more perceived than real. They are also aware of the economic benefits flowing from the Giant Mine in terms of both direct tax contribution and indirect economic effects. They made it clear that they would not want to see the mine close, and that the majority of the population of the city felt the same way. Although relations between the mine and the community were certainly been better under previous owners, animosity toward the mine has lessened considerably since the end of the strike to the point where current relations can best be described as "indifference".

Giant Mine Control Options Report

3.2.5.4 Yellowknives Dene Band

Yellowknives Dene Band members are concerned about human health effects arising from past and present operation of the area's two gold mines. They do not generally make a distinction between arsenic and other contaminants. Rather, they are concerned about the health effects from exposure to chemical contaminants in general. They believe that their water is unsafe to drink, that their food (in particular the fish from Yellowknife Bay) is unsafe to eat, and that the air is unsafe to breathe. They base their concerns on the historical observations of the elders, and on the fact that the incidence of cancer appears to be rising in recent years. In particular, they noted that over the last winter, two elders who have continued to fish in Yellowknife Bay died of cancer. The community attributes these deaths to exposure to chemical contaminants from fish, and see this as further evidence of a significant health risk.

According to Yellowknives Dene representatives, relations between the band and the mine have never been good. They believe that a verbal commitment was made by the original mine officials to pay royalties to the Yellowknives Dene family who first discovered gold in the region and reported this find to members of the non-aboriginal community in the late 1940s. The community still believes that the family should receive these royalties. At present, no members of the Yellowknives Dene community is employed by the mine.

When asked about any preference between the three management options, Band officials expressed no strong opinion. They did, however, say that they have made several attempts to open lines of communication with mine officials without success, and that the community covenant might be an excellent way to improve relations.

When asked what issues they would like to negotiate, band officials listed the following:

1. redirect surface water effluents out of Back Bay and allow the Bay to recover;
2. control stack emission;

Giant Mine Control Options Report

3. control dust from the tailings area;
4. solutions to the underground storage issue since the community sees this as a long term threat to the entire Yellowknife Bay;
5. compensation for water bills, since the community can no longer drink the water from the Back Bay;
6. compensation for additional fishing and food gathering costs, since community members now have to travel greater distances to reach fishing and gathering areas; and
7. resolution of the royalty dispute between the mine and the family who first discovered gold in the area.

3.2.5.5 Royal Oak Giant Yellowknife Mine

Royal Oak officials acknowledged to us that their relationship with the community is poor and they take partial responsibility for this fact. Their view is that the community assumes that a lack of regulations for SO₂ and arsenic means that the company is emitting pollutants in an uncontrolled fashion. The company has made few attempts to publicize their environmental control efforts or the fact that their compliance record is extremely good. They further acknowledge that relationships between the company and the community have soured over the last several years, although they did not elaborate as to possible reasons for this.

Mine officials expressed considerable interest in SVA without hesitation. The main reason for their interest was the opportunity to deal directly with government agencies within a single management process. They expressed concern over a potential lack of coordination between SO₂ and arsenic control options, and hoped that a one-window approach would lead to a more integrated regulatory regime; one that created an opportunity to set priorities among issues.

Giant Mine Control Options Report

range from \$.35 to \$7.1 million over an average life span (i.e. approximately 70 years). These estimates are probably low since they do not account for reduced ingestion or reduced sub-lethal impacts, nor do they account for potential environmental benefits. Costs to the company could range from \$1.2 to \$2.1 million in capital investment and between \$168,000 and \$206,000 in annual operating costs. The estimated annualized costs to the company thus range from \$350,000 to \$490,000 using a discount rate of 5%.

Those estimates focus on the costs and benefits *vis à vis* a single mine. From that perspective, the decision of whether or not a regulation is warranted may turn on the extent to which the government is willing to invoke the precautionary principle. In addition, the government will have to determine whether the added benefits of developing a regulation that might apply to other emitters of arsenic in the future tips the balance in favour of developing a regulation at this time.

A second problem with respect to the regulatory approach is that most stakeholders - including the Mine, the NGOs, the aboriginal community and the local government - view airborne arsenic as less important than other environmental issues involving the mine.

4.2 Community Covenant

As we have observed above, both negotiated agreement options offer the added potential to address other aspects of the problem rather than being restricted to air emissions. The key issue with respect to both options is whether the relevant parties can be expected to be willing to enter into an agreement.

Our preliminary interviews suggest that some of the stakeholders might be interested in a covenant between community representatives and the mine. In particular, the local ENGOs and the Yellowknives Dene Band are interested in addressing a wider range of issues with respect to the past and present operations of the mine than could be included in a regulation. A covenant might

Giant Mine Control Options Report

provide the opportunity for such a negotiation. Aside from the actual substantive issues it addresses, a covenant should also provide an opportunity for opening up lines of communication and restoring trust.

Notwithstanding these potential benefits, however, the prospects for this option appear to be low. It is not clear that any of the stakeholders would be satisfied with the lack of enforcement "teeth" that might be provided by a community covenant on its own. An additional concern articulated to us by a number of stakeholders is: which parties should participate in such an agreement. Who speaks for the community? And if the list of participants gets large in order to accommodate the diversity of interests, would the negotiations be manageable? The most significant problem with this option is that the mine does not appear to be interested in engaging in negotiations over these issues with community groups, and does not face any significant incentive to do so.

4.3 Structured Voluntary Agreement

An SVA could take one of two forms: a negotiated agreement between the mine and the federal government focused on atmospheric emissions of arsenic only, or an agreement among the mine, the NWT and the federal government. There are few prospects for the first model, while the second model could be explored further.

The key issue with respect to either model is whether the company would be willing to enter into an agreement. In theory, there are three factors that might induce the mine to consider negotiating an agreement focused only on arsenic:

- significant community concerns with respect to airborne arsenic that are likely to impair the company's ability to continue to operate profitably;
- market pressures that might compel the mine to want to "green" its image; or
- sufficient concern on the part of the company about maintaining good will with the community.

Giant Mine Control Options Report

Although this study has not addressed these considerations in great detail, our preliminary observations suggest that none of these conditions exist in this case.

The mine might, however, be interested in an SVA that addressed a wider range of environmental issues. The main reason the mine would be interested in such an agreement is the potential for developing a long-term integrated approach to its environmental issues. This raises two issues:

- would this incentive be sufficient to induce the mine to include atmospheric emissions of arsenic in the negotiations even though the threat of regulatory intervention on that particular issue may be low?
- in any event, what are the prospects of inter-jurisdictional cooperation with respect to such an approach?

Although we did not pursue these issues in detail, our preliminary observations suggest that the answer to both is positive. Although they did not indicate to us precisely which issues they would be willing to negotiate, officials from the mine suggested that they would be very interested in negotiating a comprehensive package of the environmental issues they face. And while the NWT intends to pursue the promulgation of the SO₂ regulation, it would be interested in exploring the possibility of whether negotiations could help resolve outstanding issues such as the liability for the contaminated site upon closure of the mine.

In addition to addressing these two concerns, an SVA would have to address at least two additional issues in order to be effective. First, it would have to overcome concerns expressed to us by some members of the local community about the need for effective enforcement powers. More analysis is required in order to determine whether the community stakeholders would be satisfied with a non-regulated approach. Second, it will be important to ensure that the community trusts the government to negotiate on its behalf. Many of the local aboriginal groups and ENGOs have expressed concerns in a number of fora