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March 1, 1980.

Mr. Glenn Warner,
Chairman,
N.W.T. Water Board,
P.O. Box 1500,
YELLOWKNIFE, Northwest Territories.

Gentlemen:

On Thursday, February 21st, in Toronto, a meeting of senior staff of Giant, Falconbridge Metallurgy, Falconbridge Engineering and Falconbridge Marketing officials was held to consider -
-the hot water leach method of arsenic upgrading
-the progress to date of meeting the final standards for our tailings effluent.

Considerable work has been done in the past year on a hot water leach method which proved to be feasible as far as producing a high grade product was concerned, but the capital costs of which for various reasons had grown considerably to \$4.2 million. In addition, it was decided that the residues from treating the Cottrell dust and the Con material would still contain significant amounts of arsenic, and would prevent us from meeting the Water Board requirements.

As a result of this and the time limitation of meeting the May 1981 deadline of our Water Licence, the following four decisions were made:

1) Alkaline Chlorination/Ferric Iron Precipitation

We will proceed at once with the design and construction of a combined alkaline chlorination/ferric iron precipitation method or alternative 5 in the DPAT report, for treating our final tailings effluent. A capital request of \$1 million was approved, and the Mine staff is to have the responsibility for the design and construction of this facility.

Though this method will technically work, and will reduce the necessary levels of CN and As to meet the standards there are

several problems such as -

-Any excess of Cl in the final effluent will kill the fish that are now returning to Baker Creek.

-How to obtain the enormous quantities of Cl needed in time.

-How to Handle and feed this Cl and with safety.

-What to do with the sludge or precipitate formed in the removal of the As. It may be that we will have to dry this and store it underground which will add to the cost of the operation.

2) CN Elimination

We will continue to explore other methods of CN elimination such as-

HSA Reactor

Ion Exchange

Cominco Trail Method

If we can discover a method that will do the job, is easy to control and less of a hazard than alkaline chlorination, and will be less costly to operate, then we will pursue it and thus reduce our operating costs for the DPAT method.

3) Other Methods of As Upgrading

We will proceed with a laboratory investigation of a high temperature fuming method which is being used elsewhere in the world, and which promises to be able to treat our baghouse dust, the cottrell dust and possibly the Con material.

For this purpose a budget of \$50 thousand has been approved and samples of-

Giant baghouse dust

Giant cottrell dust

Con material

have been sent to the Falconbridge Metallurgical Laboratories at Thornhill, Ontario.

4) Sale of Raw Baghouse Dust

In the meantime, Falconbridge marketing has located a market for raw baghouse dust in the United States, and a decision was made to construct a load out facility at Giant, probably of Sprout-Waldron design and construction, at a cost of approximately \$200 thousand, which has been approved. Falconbridge Engineering will be responsible for overseeing this project, with the mine staff picking the site.

In addition, an emergency vacuum pick up vehicle will be purchased which will be available at the mine site in case of an accident to the customers vehicles which will carry the baghouse dust out of the Territories. As the mine staff has already investigated several different types of such vehicle both in Canada and the United States, they will be

responsible for obtaining this equipment. A budget of \$100 thousand has been approved, which may be exceeded by the time the 'extras' which we require are built in.

5) In Summary

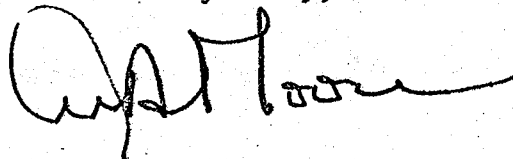
As before, we have endeavoured to keep the Water Board informed of our plans in connection with the tailings effluent and our baghouse dust, cottrell dust and the Con material. It has not been an easy process to examine, test, design and cost a method or methods that will solve the problem or problems, without creating another one. And to do these tests, locate and secure the necessary lab-sized equipment, design the full scale plant, travel all over North America to view portions of the plant sized equipment needed and to cost everything, all within the time limitations imposed by the Water Board, has not been easy.

I don't suppose that you are aware that the lead time for ordering the quantity of chlorine required for the DPAT process that we are planning on using is 12 months.

In any case, you are now aware of our plans, and at present we cannot tell you any more. We hope to be treating the final effluent before May 1981. We expect to be shipping baghouse dust inside 12 months. And we should know whether this fuming method of As upgrading has any merit within 6 months.

You might be interested to know that of the \$624 thousand spent by Giant in 1979 on Enviromental Control Measures, that \$189 thousand was spent on Research and Development, looking for the elusive method or methods that will solve our enviromental problems.

Yours very truly,



W. A. Moore,
Manager, Giant Mines.

WAM:kb

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