

**FALCONBRIDGE NICKEL MINES LIMITED**

INTER-OFFICE MEMORANDUM

DATE: April 6, 1979

TO: Directors - Giant Yellowknife Mines Limited

COPIES TO:

FROM: D.J. Emery

SUBJECT: ARSENIC UPGRADING PLANT

Research by the Falconbridge Engineering, Marketing and Metallurgy departments plus our Mine personnel has shown a good potential for selling an upgraded Arsenic product from Giant. The upgrading scheme shows excellent chances of making a high rate of return on the new investment.

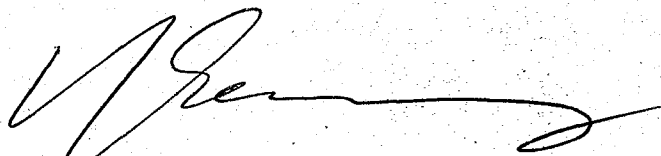
Capital for the plant and equipment is \$825,000 and a Transportation contingency of \$100,000 for a maximum 6,000 Tons/Year of product. Current baghouse production would produce 3150 Tons/Year of product. It is contemplated that another 2850 Tons/Year of product can be obtained from treating stored residues from Giant or the Con mine.

Estimated operating profit would range from \$450,000 if the operation is limited to current baghouse production and as much as \$1,149,000 if the maximum tonnage is processed. A significant portion of the operating profit would be derived from gold recoveries (see Table I & enclosures).

This project would eliminate the need for new As<sub>2</sub>O<sub>3</sub> storage facilities underground that would require a capital expenditure of \$717,000 in 1979-80 and an operating cost of \$115,000 annually to store the next four years of As<sub>2</sub>O<sub>3</sub> dust production.

The project should receive approval in principle because of the favourable economics and to avoid the necessity of immediately starting on the new underground storage, with the understanding that it will only proceed if:

- (a) Necessary Government approvals are received.
- (b) The pilot plant results show expected product quality and commercial viability.
- (c) Firm commitments are obtained for 3000 Tons of finished product through Falconbridge Canada Ltd.



D.J. Emery

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attach.

# GIANT YELLOWKNIFE MINES LIMITED

TABLE I

## ARSENIC PROJECT FINANCIAL SUMMARY

	<u>Current Production</u>	<u>Current Production plus Recovery of Stored Dust</u>
Crude Input Analysis	90% As <sub>2</sub> O <sub>3</sub> .1 oz Au	80% As <sub>2</sub> O <sub>3</sub> .25 oz.
Refined As <sub>2</sub> O <sub>3</sub> Produced	3150 Tons/Year	6000 Tons/Year
<u>ANNUAL REVENUES</u>		
Sales Value at G.Y.K. As <sub>2</sub> O <sub>3</sub> - April 4, 1979	\$ 693,000	\$1,320,000
Sales Value at G.Y.K. Gold - April 4, 1979	<u>97,000</u>	<u>518,000</u>
TOTAL	\$ 790,000	\$1,838,000
<u>ANNUAL COSTS</u>		
Operating Costs As <sub>2</sub> O <sub>3</sub> - Upgrading	\$ 327,000	\$ 622,000
Operating Costs Gold - Recovery	<u>12,000</u>	<u>67,000</u>
TOTAL	\$ 339,000	\$ 689,000
<u>ANNUAL OPERATING PROFIT</u>	<u>\$ 451,000</u>	<u>\$1,149,000</u>
<u>CAPITAL COSTS</u>		
Capital for Plant	\$ 825,000	\$ 825,000
Capital Reserve for Transportation	<u>100,000</u>	<u>100,000</u>
TOTAL	\$ 925,000	\$ 925,000

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