

FALCONBRIDGE NICKEL MINES LIMITED

INTER-OFFICE MEMORANDUM

DATE: November 28, 1980

DRAFT

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TO: J.O. Kachmar

COPIES TO: S.O. Fekete, D.J. Emery, D. Zeraldo

FROM: P.J. Raleigh

SUBJECT: RE: ADDITIONAL ARSENIC SALES FROM GIANT YELLOWKNIFE

In an effort to evaluate the desirability of expending both manpower and capital on the work needed to expand Giants penetration into the North American arsenic market, the following situations require study:

1. The advisability of additional shipments of crude arsenic trioxide (As_2O_3) to users or processors.
2. The advisability of upgrading crude As_2O_3 at Yellowknife for both gold recovery from residues and high grade As_2O_3 sales.

The following Basic Data is used in the presentation:

1. Pure As_2O_3 is worth 33.25¢/# U.S. at Tacoma.
2. Net bulk at Giant after allowing handling and transport to customer is assumed to be 20¢/# U.S.

Gold recovery is 70% of that contained in crude As_2O_3 .

Gold price is \$600.00 U.S.

Current production is being sold for $(7¢) + \frac{1}{2}(35-25) = 12¢/\#$ U.S.

Gold in current production is 0.08 oz/T and is returned to Giant for treatment and gold recovery. All charges are on the As_2O_3 selling price.

Capital invested to date is not part of the ongoing consideration. Gold recovery from residue will not require additional capital.

Disposal of residue will not require additional capital. No crude material will be shipped if upgrading is undertaken.

Case I Shipping Crude - present contract is for 7×10^6 #/year

IA Maximum desired market share 12×10^6 #/year

Capital cost for recovery from stopes dry for
 5×10^6 #/year estimated at C\$400,000.

Operating cost for recovery from stopes as per S.O.Fekete
C\$55.00/Ton.

Case I

As ₂ O ₃ Sales $7 \times 10^6 \times 0.12$	840,000
Gold Values $4000 \times 600 \times .7 \times .08$	130,000
Total Sales U.S.	<u>\$ 970,000</u>

Costs are base costs.

Probable life: min 3 years
max 7 years

Case IA

As ₂ O ₃ Sales $12 \times 10^6 \times 0.12$	1,440,000
Gold Values $6660 \times 600 \times .7 \times .08$	221,600
Total Sales U.S.	<u>\$1,661,600</u>

Operating Costs

$3160 \times 55 = \text{C\$ } 173,800$

Capital Costs = C\$400,000

Probable life of operation 7 years

Case II

Sale of 12×10^6 #/year of As_2O_3 Purified from Current Production and U.G. Recant Production

As_2O_3 Sales $12 \times 10^6 \times 20¢$	2,400,000
Gold	221,000
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U.S. \$	2,621,000

Operating Costs Can. \$	643,000
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Capital Cost Can. \$	S.O.F.	1,050,000
	U.G. Capital	400,000
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		1,450,000

Probable life 7 years

IIA

Sale of 12×10^6 #/year of As_2O_3 purified from current production and U.G. old As_2O_3 dust.

As_2O_3 Sales $12 \times 10^6 \times 20¢$	2,400,000
Gold $.5 \times .7 \times 600 \times .3500$	735,000
$.08 \times 7 \times 600 \times .3500$	115,500
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Sales U.S. \$	3,250,500/year

Costs -- Crude As_2O_3 and Processing 643,000 + 165,000 =
808,000 C\$/year

Capital Costs

Process Plant	1,050,000
U.G. Recovery	400,000
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	1,450,000

Probable life 7 years

Case III Con Pond Material

Plus Current Production Processed Through a New Plant.

Assume Con Pond Material .4 oz Au/Tonne

Gold values Shared 50% to Con

50% to Giant

As ₂ O ₃ Sales	2,400,000
Gold 4,000 x .7 x 600 x .08	132,000
3,500 x .7 x 600 x .4/2	294,000
U.S. \$	<u>2,726,000</u>

Operating Costs \$C 691,000

Capital Cost \$C 1,876,000

Project life 10 years

Case IV Con Pond Material

Plus Old Underground Material

Con Pond Gold Shared 50-50 with Cominco

Assay Values for old U.G. .5 Ag

Con Pond .4 Ag

Con Pond @ 70% As₂O₃ - 50% = 4100 T

Old U.G. @ 70% As₂O₃ - 50% = 4100 T

Sales 12 x 10 ⁶ x .20	2,400,000
Gold Con @ 50% 4100 x .4/2 x 600 x .7	344,400
U.G. 4100 x .5 x 600 x .7	<u>861,000</u>
U.S. \$	3,505,400

Operating Costs C\$	896,000
Capital Cost C\$	2,276,000

Estimated life 12 years

We wish to have an evaluation made which will assist us in determining which of the routes should be pursued.

- (a) Continue shipping crude
- (b) Upgrade current product or any of the options IA to IV.

It must be recognized that direct shipping of a product less than 85% purity is not economical.



P.J. Raleigh

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