FALCONBRIDGE

K. BLOWER

JUL 10 1984

Memorandum

Date: June 29, 1984

To: D. J. Emery

Copies to: L. G. Bonar, K. Blower, K. Morton, P. J. Raleigh, S. O. Fekete, File

From: T. J. Desanti

Subject: GIANT - ARSENIC TRIOXIDE

A meeting was held in New York on June 18 with W. F. Drinkard, President of the Applied Research Group Inc. (ARG) to discuss the status of the work being done by ARG regarding the potential joint venture with Giant to produce copper arsenate at the Equity Silver plant in British Columbia. Comments below:

1. In view of the interest expressed by Giant in the joint venture, ARG are developing the costs required to run a pilot operation at the Equity plant. Drinkard looks for a test run of 2 to 6 months at an input rate of 1,000 TPY of As_2O_3. C. Edwards, operating manager at Equity Silver, will produce the costs concerned and these should be ready by mid-July. Drinkard hopes to secure the portion of the Equity plant required at zero rental cost for the test. He asked that Giant supply crude As_2O_3 for the test at zero cost FOB Giant with any gold recovery waived by Giant. Freight costs on the As_2O_3 would be included in the test costs. The writer recommends this approach be accepted by Giant since it is preferable to putting current production underground. ✓

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2. Drinkard estimates the joint venture would use about 25% of the existing Equity plant. Equity is attempting to utilize the leach section of their plant for other outside feed. A cyanide circuit was recently installed and would recover gold from the residue produced in upgrading Giant's crude As_2O_3.

3. The anticipated pilot plant operating rate based on an input rate of 1,000 TPY of Giant As_2O_3 is compared below with the proposed initial and final target production levels for copper arsenate at the Equity plant.

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To J.

Cc: T. R.

K.M.

Date 10 July 84

From Len

	PILOT PLANT	INITIAL TARGET	FINAL TARGET
	6 Mil PPY of CCA 3 Mil PPY CA	10 Mil PPY of CCA or 5.2 Mil PPY of CA	40 Mil PPY of CCA or 20.8 Mil PPY of CA
Giant As_2O_3 100% Basis	1,000 TPY	1,700 TPY	6,800 TPY

Note: 1 lb. of CCA contains 52% CA

4. Drinkard estimates the profit concerned at the final target rate of 20.8 million PPY copper arsenate (40 mil PPY CCA) to be:

	CDN$/MT		CDN¢/lb
Estimated CA Delivered sElling Price	$1,452		65.9
Estimated Costs at Equity	653		29.6
Estimated Transportation Costs from Equity to Charlotte, N.C.	275		12.5
Total Costs	928		42.1
Estimated Profit FOB Equity	524	CDN	23.8¢
		US	19.0¢

Note: Drinkard originally projected a profit of US 20¢/lb at the 10 million PPY CCA production rate so the profit margin above could be significantly lower at the 10 million PPY rate. Projected costs at this lower level will be provided shortly.

5. The delivered CA selling price of CDN 65.9¢/lb (US 52.7¢/lb) provides the following overall CCA cost delivered Charlotte:

	Per Pound CCA USF
Cost of CA @ 52% (.52)(52.7)	27.4¢
Cost of Chromic acid @ 48% (.48)(.80)	38.0¢
Total Cost Per Pound CCA	65.4¢

Based on the available information from Koppers, the 65.4¢/lb cost FOB Charlotte would be competitive with the projected Koppers equivalent cost of about US 68¢/lb. Consequently, if the costs projected by ARG at the 40 million PPY CCA rate can be achieved, the joint venture would produce a competitively priced product.

6. Drinkard is agreeable to pricing the CA FOB Equity so the profit is made by the Canadian joint venture i.e. Giant would not be involved in any U.S. company.

Summary:

ARG will provide in July (i) the estimated operating costs at the 10 million PPY CCA (5.2 million PPY CA) rate and (ii) the estimated pilot plant test work cost.

Prior to making any decision on the pilot plant and the ultimate joint venture, two factors must be clarified. Firstly, Giant and ARG must together meet with Equity to determine what arrangement can be made to supply plant facilities and recover Giant gold after completion of the test work. Secondly, Giant and ARG must have discussions with Osmose and possibly other U.S. consumers to confirm whether the joint venture has good prospects for reaching the 40 million PPY CCA rate. Giant has not been involved in any of these discussion to date.

The final and key point is that Giant has to determine whether it can recover the high gold-bearing As_2O_3 stored underground. Unless the gold revenue is available to the joint venture, and the availability of crude As_2O_3 approaches the final target rate of 6,800 TPY, the joint venture concept would be of little interest to ARG. They would have no problem in maintaining operations at 10 million PPY of CCA with their current As_2O_3 supply source. √

T. J. Desanti

TJD:dmf