MEMORANDUM FROM Jurgen R[illegible]edder

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TO J.S. Poyen
Director
Mineral Development Division

THE DEPARTMENT OF
MINES AND PETROLEUM RESOURCES
PARLIAMENT BUILDINGS, VICTORIA, BRITISH COLUMBIA V8V 1X4

DATE Sept. 15, 1975

Re: Precambrian Shield Resources Ltd.
(Carolin Mines Ltd: Aurum - Idaho
Pipestem Project)

OVERVIEW

According to Dr. E.W. Grove's report (see attachment) drill indicated ore reserves are only 200,000 tons and not 1,750,000 tons as reported by Precambrian Shield in their report. It is doubtful if at this tonnage mining of the ore would be feasible even if a gold price of $200 and no incremental royalty is assumed. But it would be speculative to assume a price of gold above $140/oz. in making investment decisions. At this price the company would pay roughly $6.50 in incremental royalty per oz. of gold or $1.00 per ton of ore. Total royalties would be roughly $13/oz. or $2/ton of ore.

FINANCIAL ANALYSIS

If the reported higher grade of .157 oz./ton of ore is assumed one ton of ore would yield a gross revenue of $20.00 assuming a 90% recovery and a price of gold of $140/oz. If Precambrian Shield puts in a 2000/ton per day mill, a minimum investment of around $20 Mn would be required. If no further ore reserves are found the mine would be depleted after two and one-half years. If a 3 year mine life is assumed and low capital cost of 12% the financing cost would be $12.00/ton of ore. This implies that mining, treatment and overhead costs have to be below $8/ton of ore. That this will occur is very doubtful.

In 1974 only one B.C. underground mine had operating costs below $8/ton of ore treated.

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Operating Cost of Selected B.C. Underground Mines

per ton of ore

Mine	Mill Capacity/Day	Metal	Mining Cost	Operating Cost
Granduc Mine	7500	Cu	4.65	12.75
Graigmont Mine	5350	Cu	3.61	5.97
Boss Mountain	1800	Mo	3.86	8.18
Western Mines	850	Zn,Cu,Au,Ag	15.11	30.26
Reeves McDonald	1000	Zn,Pb,Ag	8.28	11.76
Anaconda Britannia	3000	Cu	5.81	15.25

Source: Statistics Canada Reports

It is very doubtful that Precambrian would incur operating costs below $12/ton of ore. This would leave only $8 for amortization and profit.

If one assumes that the capital cost of the project is $20 Mn (this is the minimum, in all likelihood the cost will be above $30 Mn for a 2000 ton/day mine) and that the cost of financing equals 15% before taxes (this is very low also) the company would require ore reserves of at least $3.8 Mn tons grading .157 oz. of gold. According to Dr. Grove the prospect of proving this large tonnage is more than doubtful. A smaller mine would incur higher operating costs. Northair Mines estimates that it will incur operating costs of $32/ton for a 300 ton/day mill.

CONCLUSIONS

From the foregoing analysis it appears that the exploration on the Aurum Idaho and Pipestem was unsuccessful. If Dr. Grove's interpretation of the geology is correct no further money should be spent on that project. If the interpretation of the company is correct drill indicated reserves would have to be doubled before a mine would be feasible. It appears that Precambrian doubts that it can double the tonnage in the area of their recent drilling activity.

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Precambrian's blaming of the incremental royalty for the deferment of bulk testing is like admitting that their gold price assumption is very speculative, as at a price of $140/oz. the incremental royalty would not be an important deciding factor considering the other unknowns.

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