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WHEN REPLYING PLEASE REFER TO

FILE NO. 67-3

THE GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA

MINERAL RESOURCES BRANCH

DEPARTMENT OF MINES AND PETROLEUM RESOURCES

Box 877,
Smithers, B.C.
22 October 1974

C O N F I D E N T I A L

Mr. J. W. Peck, P. Eng.,
Chief Inspector of Mines,
Inspection and Engineering
Division,
Department of Mines and
Petroleum Resources,
1837 Fort Street,
Victoria, B.C. V8R 1J6

Attention: Dr. James T. Fyles,
Associate Deputy Minister.

Dear Sir,

Re: HALLMARK RESOURCES LIMITED - CRONIN MINE DIVISION.

The following is a brief summary outlining a few of the more pertinent points concerning present conditions at the property and the problems that would be associated with bringing this property into production.

It may be of interest at this point to evaluate past production with a view to indicating the economic limits whithin which the operation must function.

A. ECONOMIC CONSIDERATIONS

A tabulation of reported production for the mine from 1917 to 1973 inclusive indicates the following:

TONS	Au oz.	Ag oz.	Pb lbs.	Zn lbs.	Cd lbs.
24,580	339	250,866	2,869,921	3,150,422	37,903
			116 lbs./ton	128 lbs./ton	1.54 lbs./ton
GRADE	0.01 oz./ton	10.2 oz./ton	5.80%	6.40%	0.07%

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This constitutes a relatively large sample of the vein system and should serve to indicate the recoverable values per ton, including dilution, that may resasonabley be expected in future operations.

The net smelter return, at present metal prices would likely be in the range indicated below and is predicated on a N.S.R. of 50% of the total gross value of the concentrates.

Bradina Joint Venture, for example, received 42% of the total gross value of its zinc concntrates and 65% of the total gross value of its copper concentrates.

Au	0.01	x	150.00	=	1.50/ton
Ag	10.20	x	4.00	=	40.80/ton
Pb	116.00	x	0.20	=	23.20/ton
Zn	128.00	x	0.35	=	44.80/ton
Cd	1.54	x	4.00	=	6.16/ton
TOTAL GROSS/TON				=	$116.46
Net Smelter Return	116.46	x	0.50	=	$ 58.23

Operating costs, based on an average performance of 8 - 10 tons/man shift underground and a labor cost of 80.00 - 100.00 per man per day with a 100 ton/day milling capacity would likely fall within the 30.00 - 40.00 per ton range.

Using the 40.00/ton figure leaves a profit margin of 18.00/ton which must carry repayment of capital and interest.

If we estimate an all-up preproduction cost of 1.5 - 2.0 million a pay-back period of 3 - 4 years is indicated. Minimum ore reserve requirements would thus be in the range of 120,000 tons with an N.S.R. value of 58.00 - 60.00 per ton.

One of the major problems that now arises is that in narrow vein structures, particularly of the type that occurs in "pods" such as the Cronin, it is extremely difficult and costly to prove the required tonnage 3 - 4 years in advance. Drilling is very useful, but unless substantiated by drifting and raising can be misleading.

In the past, many mines of this type operated on the basis of one years reserve ahead and were quite successful, however, a large element of risk

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is involved when adopting this mode of operation.

In view of the above it would appear essential to prove an ore zone of adequate size and value that would be amenable either to open pit or low cost underground methods and to consider a mill capacity substantially greater than 100 tons/day. This, in conjunction with the narrow vein deposits may provide an economically sound operation. Diamond drilling in this case would likely be the preferred method for the initial exploration program.

B. PRESENT CONDITION OF THE PROPERTY

The mill and surface plant is inadequate for anything except perhaps pilot plant work.

The underground workings are generally of ancient vintage and are not suitable for modern haulage methods, primarily due to their small size and poor track conditions. Slashing, retimbering and new track would be required.

The present camp would be adequate during the initial exploration program.

Road access, both the 6 mile section joining the Babine Lake Road and the 2 mile section linking the plant site with the mine could not be considered adequate.

To summarize, it is the writers opinion that present mill and surface facilities are of minimal value. In the event that a decision was made to place the property in production allowance should be made for a completely new mill and surface plant.

Yours very truly,

J. F. Hutter, P. Eng.,
Inspector of Mines and
Resident Engineer

JFH/hh