

# PROPERTY FILE

PROPOSED PROJECT FOR EXPLORATION  
AND DEVELOPMENT OF RED BIRD PROPERTY

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REMAC, BRITISH COLUMBIA

January 17, 1975

Hecla Mining Company  
P. O. Box 320  
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Reeves MacDonald Mines Ltd  
Remac  
British Columbia

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## PROPOSED PROJECT FOR EXPLORATION AND DEVELOPMENT OF RED BIRD PROPERTY

### SUMMARY

Reeves MacDonald Mines Limited operates the Reeves MacDonald Mine at Remac, British Columbia. Remaining ore reserves are small and the economics of the current situation indicate that the mine should be promptly shut down. However, the immediately adjacent Red Bird property, owned by the Hecla Mining Company, contains known though only partially explored mineralization but has no mining or concentrating installations.

Reeves MacDonald and Hecla have been discussing the possibility of forming a joint venture which would bring together the two properties, thus providing the basis for an attractive underground exploration program. The plan being considered involves initiating the underground exploration program and at the same time developing and mining two low-grade ore zones, one in Red Bird ground and one in Reeves MacDonald property. The proposed mining operations would be economically marginal if the new British Columbia mining taxes were not imposed, but would cover fixed mine costs so that the main exploration program would not be burdened with overhead costs. If these taxes are applied, the proposed mining program would run at a significant loss and not contribute toward the fixed costs of the exploration program. In these circumstances neither Hecla nor Reeves MacDonald would contemplate undertaking the exploration program, leaving no alternative but to close the Reeves MacDonald mine.

Clearly, with the new British Columbia mining taxes being such an important factor in the decision-making process, both of the two companies would like to ascertain from the British Columbia Government whether or not a suspension of the new mining taxes could be allowed for the term of the exploration program.

A complicating factor in the current situation is that the labor contract with the Reeves MacDonald hourly employees expired on January 16th and negotiations with the Union, the United Steelworkers of America, Local 901, are in suspense, pending resolution of the tax situation and the decision on whether or not the property will continue in operation.

## BACKGROUND

### Reeves MacDonald

The Reeves MacDonald Mine is located at Remac, British Columbia, about twenty miles east of Trail, and just north of the Canadian-U.S. border. The property was staked in 1918. Some development work was done in the period 1925 to 1930. In 1949 the property was brought into production and, apart from two relatively short periods, has operated continuously since that time. The surface plant and the main workings are on the east bank of the Pend Oreille River. In 1970 the Annex Mine on the west of the river was brought into production following depletion of ore in the main mine workings.

The ore is processed in a concentrator at the mine site and the concentrates are trucked to The Bunker Hill Company smelter at Kellogg, in Idaho. Since the start of mining, to the end of 1974, production has amounted to 69,800 tons of lead and 275,500 tons of zinc, from 7,216,000 tons of ore mined.

The company payroll is approximately 80 hourly employees and 18 salaried staff.

### Red Bird (Hecla Mining Company)

The Red Bird property, consisting of sixteen Crown-granted mining claims, is located west of the Pend Oreille River and immediately to the west of the Reeves MacDonald ground. Early locations on the property were made prior to 1924, followed in the period 1925 to 1929 by about 1,200 feet of underground development (old Red Bird workings) in oxidized zinc mineralization. The property was acquired by Hecla Mining Company in 1944, and the zone of oxidized zinc mineralization was further explored. It was optioned to Consolidated Mining and Smelting Company (Cominco) in 1961-1962. During this period, Cominco extended the old Red Bird workings an additional 692 feet, and completed 1,990 feet of underground diamond drilling, proving a strike length of approximately 2,000 feet of oxidized zinc mineralization. The drilling showed oxidation to a depth of 1,000 feet below the surface; no sulfides were encountered, and the property was returned to Hecla. In 1973-1974, at Hecla's request, exploration in the eastern part of the Red Bird property was done by Reeves MacDonald from their Annex 800 Level. Diamond drilling indicated the apparent faulted downward extension of the Reeves MacDonald Annex-West Annex zinc-lead orebody. Preliminary estimates suggest that a potential two to three million tons of zinc-lead sulfide mineralization may be present, assuming that this zone extends down to the 240 elevation. Additional potential exists in the possible development of oxidized mineralization in this zone as well as in the separate old Red Bird zone.



## CURRENT SITUATION

The Reeves MacDonald Mine has, in spite of intensive exploration efforts, essentially run out of ore reserves. A few thousand tons of fair grade ore remain but the extraction of this material is unlikely to be profitable. The only significant tonnage of mineralization known, the K zone, is low grade. Preparation for the development and mining of this zone was started in mid-1974, but the lower metal prices projected for 1975 will make any such mining operations very marginal, and the application of the new British Columbia mining taxes will put the operation into a definite loss position. On this basis the mine should be shut down and the plant and equipment disposed of.

The Red Bird property, into which the Reeves MacDonald-type mineralization is known to extend, is immediately adjacent to the Annex area of the Reeves Mine. In order to explore the Red Bird property thoroughly, Hecla would have to sink a shaft and, if successful in their exploration, would subsequently have to construct a concentrator and other related facilities. The likely tonnage and grade of any orebodies found in the Red Bird ground would not support the heavy costs involved in shaft sinking and in constructing a new plant.

Clearly neither property, as they now exist separately, has much immediate value. However, if joined together in a joint venture, the two properties complement each other ideally. The Red Bird contains the exploration targets and the Reeves has the mine access and equipment, plus a concentrator and related facilities.

For the past two months representatives of Hecla and Reeves MacDonald have been discussing the possibility of putting together a joint venture which would allow the two properties to be combined. Both parties are genuinely interested in setting up a joint venture but before negotiations can be carried any further the tax situation has to be resolved.

## THE PROPOSED PROJECT

Hecla and Reeves MacDonald representatives have developed a plan of action for the exploration of the Red Bird ground. Funds available to each company for exploration are limited and, furthermore, the risks involved are high. Thus the plan of action necessarily includes a significant element of self-support. By first mining the Reeves K zone, some contribution to over-all costs would be generated (if the new taxes were not applied) thus permitting further exploration of the upper part of the main Red Bird zone. The entry gained

into the upper part of the Red Bird for exploration purposes would also provide access for the mining of some low grade, marginal Red Bird ore above the entry level. This mining would, in turn, provide some contribution to the exploration of the lower part (240 Level) of the Red Bird zone, again if the new taxes were not applied.

Using best estimates of tonnages, grades, recovery, metal prices and costs, it appears that mining of the K zone and the Upper Red Bird would be breakeven operations but would absorb the mine's fixed (i.e., indirect) costs. Thus, the exploration of the Lower Red Bird area would be on a direct cost basis only and not burdened by normal overhead costs.

### THE TAX PROBLEM

Neither Reeves MacDonald nor Hecla are willing to start the Red Bird exploration project, as outlined above, if the new British Columbia mining taxes are applied to the ores that will be mined as part of and during the exploration project.

It is understood that the taxes can be deferred but this would only lead to the establishment of a debt overhanging the joint venture. If the exploration were not successful, the tax would still have to be paid. Even if the exploration was successful, the likely ore-body size and grade, judging from actual historical results in the Reeves mines, would be such that the burden of deferred taxes, on top of current taxes at that time, would destroy the profitability of the operation.

In order to proceed further in the negotiations to develop a joint venture exploration program, the two companies want to ascertain from the British Columbia Government whether or not the new royalty and super taxes could be suspended during the exploration phase.

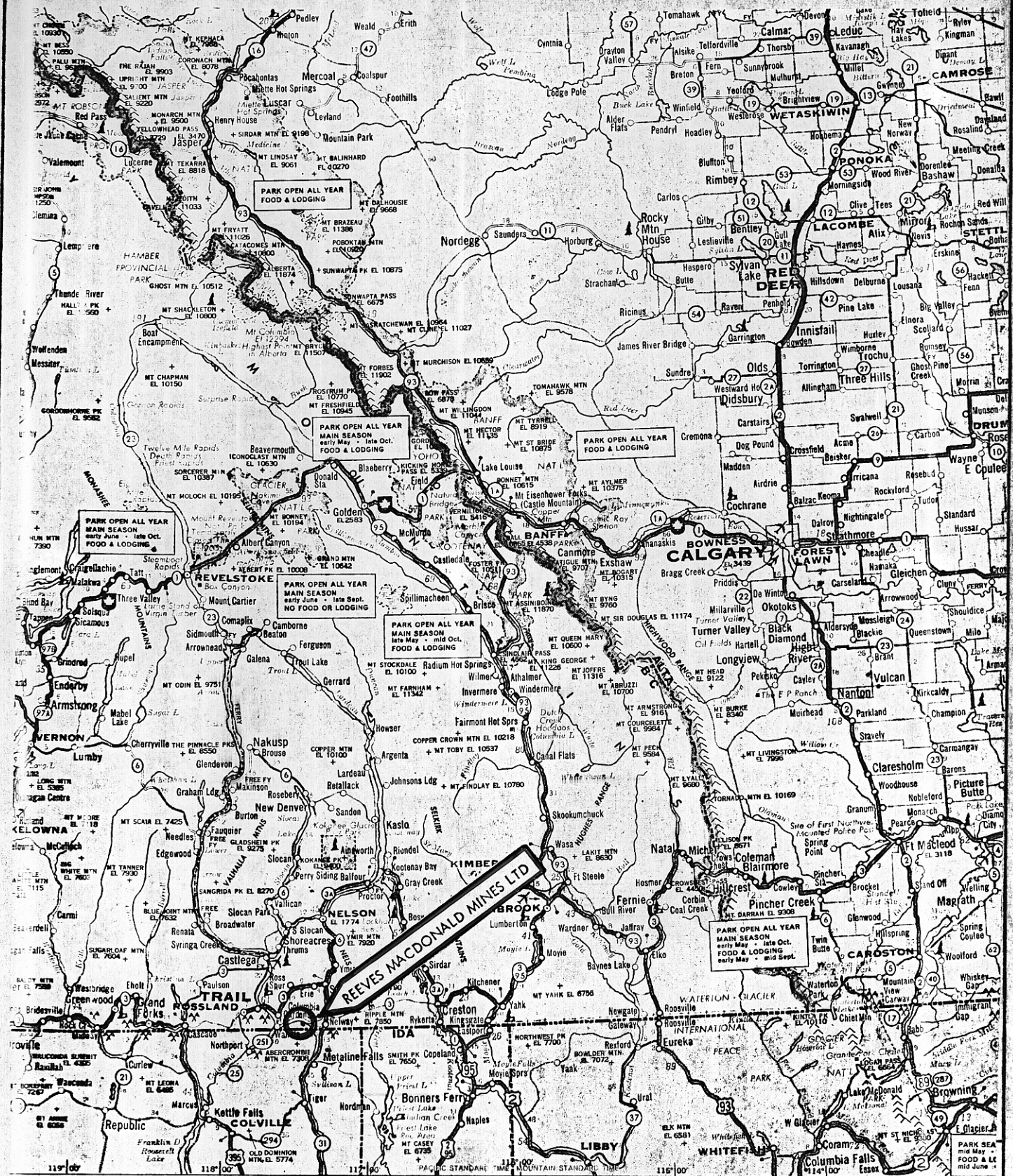
### CONTRIBUTION BY ALL PARTIES

At stake in the decisions to be taken are the continued existence of Reeves MacDonald Mines Ltd. as an on-going, viable enterprise and the livelihood of the one hundred or so employees of the company and those dependent upon them. Recognizing the gravity of the situation, Reeves MacDonald has indicated to Hecla its willingness to place

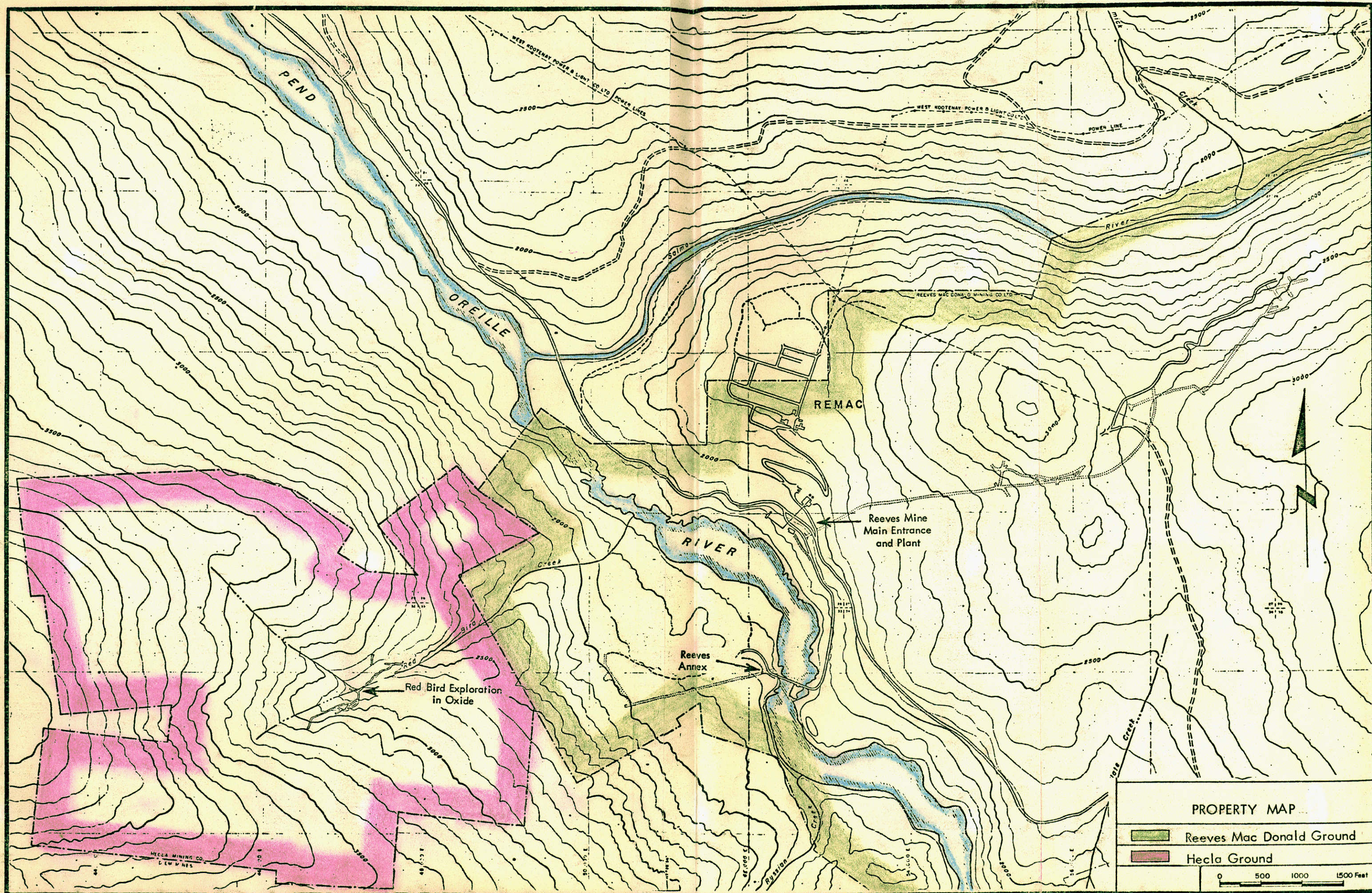
all its resources into the exploration project; Bunker Hill, as a Reeves stockholder, and as the smelter, is willing to agree to a "sweetheart" smelter contract, i.e., a contract especially favorable to Reeves; Hecla is vitally interested in the possible joint venture, as it is the only economical way to explore and mine, if profitable, the Red Bird property mineralization; the United Steelworkers of America, Local 901, are demonstrating deep interest and concern in the future of the property and in spite of wanting prompt resolution of the contract negotiations have extended the deadline.

Reeves MacDonald and Hecla are, therefore, asking the British Columbia Government whether they will also contribute to this joint effort to keep the mine in operation and its personnel gainfully employed by suspending the new mining taxes for the duration of the exploration phase of this project. If such a commitment was given by the Government the two companies would resume negotiations and, simultaneously, Reeves would reactivate the labor negotiations. Of course, either or both of these negotiations might fail but a pre-requisite to any further progress is Government willingness to suspend the taxes.

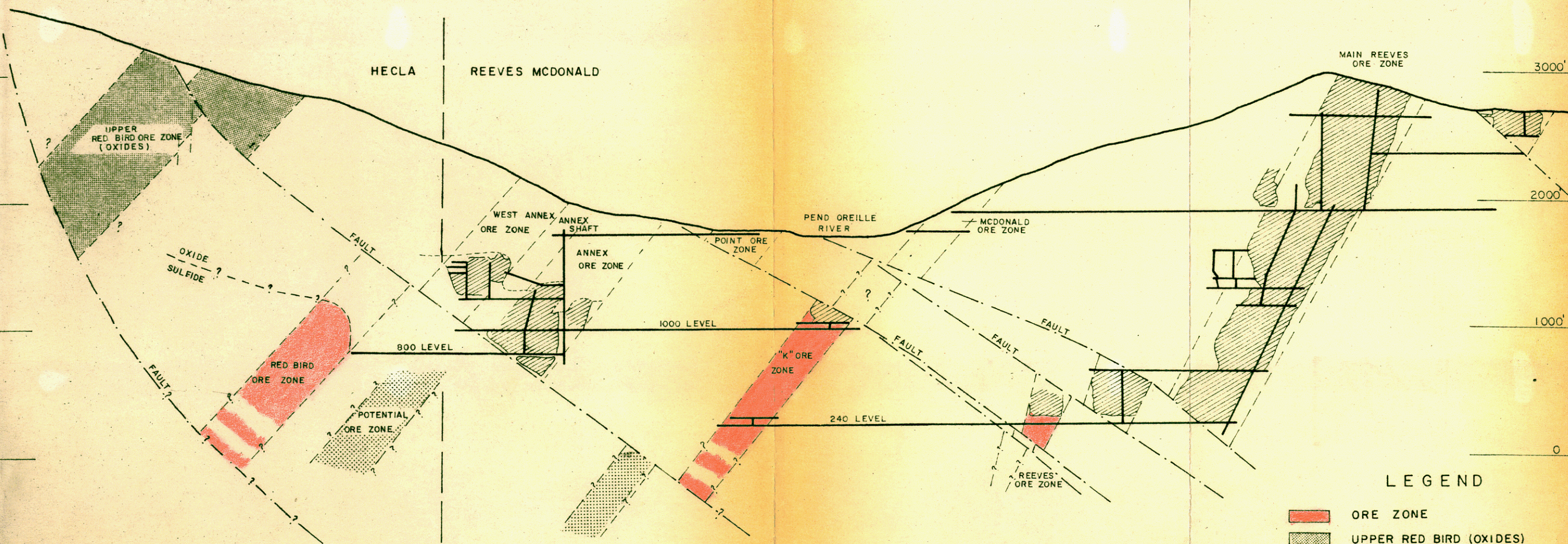
The attached financial analysis sheets show the revenue, cost, tax and cash flow data for the proposed exploration and development project. Obviously the analyses required that certain assumptions on ore grade, tonnage, recovery, metal prices, etc. be made. It could be that the assumptions are not correct and that the mining operations, without the tax, could do better than break even and provide some positive cash flow. However, Hecla and Reeves will undertake a firm obligation to put any and all such operating income back into the exploration program, rather than retain such earnings or pay them out to stockholders.













REEVES MacDONALD MINES, LTD.  
Economic Evaluation of Hecla/ReMac Joint Venture  
240K and Red Bird Above 800 Level Only  
Forecasted Operating Income Statement 1975-77  
(000s Omitted)

	<u>1975</u>	<u>Per Ton</u>	<u>1976</u>	<u>Per Ton</u>	<u>1977</u>	<u>Per Ton</u>	<u>Total</u>
Net Smelter Returns	\$2,348.6	\$16.75	\$3,065.4	\$15.67	\$3,330.8	\$17.03	\$8,744.8
<u>Deduct B.C. Royalties</u>	<u>211.4</u>	<u>1.51</u>	<u>275.9</u>	<u>1.41</u>	<u>299.8</u>	<u>1.53</u>	<u>787.1</u>
Net After Royalties	<u>\$2,137.2</u>	<u>\$15.24</u>	<u>\$2,789.5</u>	<u>\$14.26</u>	<u>\$3,031.0</u>	<u>\$15.50</u>	<u>\$7,957.7</u>
Operating Costs -							
Mining	\$1,312.3	\$ 9.37	\$1,831.6	\$ 9.37	\$2,198.0	\$11.24	\$5,341.9
Milling	279.0	1.99	390.0	1.99	425.1	2.17	1,094.1
Other Direct	409.4	2.92	571.4	2.92	616.8	3.15	1,597.6
Amortization & Depreciation	94.2	.66	94.2	.48	224.7	1.15	413.1
Total Costs	<u>\$2,094.9</u>	<u>\$14.94</u>	<u>\$2,887.2</u>	<u>\$14.76</u>	<u>\$3,464.6</u>	<u>\$17.71</u>	<u>\$8,446.7</u>
Joint Venture Operating Income (Loss)	<u>\$ 42.3</u>	<u>\$ .30</u>	<u>\$ (97.7)</u>	<u>\$ (.50)</u>	<u>\$ (433.6)</u>	<u>\$ (2.21)</u>	<u>\$ (489.0)</u>

Note: Above data exclude costs of exploration and development of Lower Red Bird target area.

REEVES MacDONALD MINES, LTD.  
Economic Evaluation of Hecla/ReMac Joint Venture  
240K and Red Bird Above 800 Level Only  
Cash Flow  
(000s Omitted)

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>Total</u>
CASH PROVIDED:				
Net Income	\$ 42.3	\$ (97.7)	\$ (433.6)	\$ (489.0)
Depreciation - New Equipment	56.7	56.7	56.7	170.1
Amortization - Preparation Costs	37.5	37.5	168.0	243.0
Total Cash Provided	\$ <u>136.5</u>	\$ <u>(3.5)</u>	\$ <u>(208.9)</u>	\$ <u>(75.9)</u>
CASH EXPENDED:				
Mine Preparation	\$ 75.0	\$ 446.0	\$ -	\$ 521.0
Equipment	226.9	-	-	226.9
Total Cash Expended	\$ <u>301.9</u>	\$ <u>446.0</u>	\$ <u>-</u>	\$ <u>747.9</u>
Annual Cash Flow	\$ <u>(165.4)</u>	\$ <u>(449.5)</u>	\$ <u>(208.9)</u>	\$ <u>(823.8)</u>
Cumulative Cash Flow	\$ <u>(165.4)</u>	\$ <u>(614.9)</u>	\$ <u>(823.8)</u>	

Note: Above data exclude costs of exploration and development of the Lower Red Bird target area.



REEVES MacDONALD MINES, LTD.  
 Economic Evaluation of Hecla/ReMac Joint Venture  
 240K and Red Bird Above 800 Level Only  
 Production Assumptions

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>Totals/ Average</u>
<b>PRODUCTION:</b>				
<u>240K - Blocks 1, 2 &amp; 3 (tons)</u>	109,200	195,600	15,200	320,000
Grade -				
Lead (%)	1.67	1.67	1.67	1.67
Zinc (%)	4.37	4.37	4.37	4.37
Silver (ozs/ton)	0.29	0.29	0.29	0.29
Cadmium (%)	0.02	0.02	0.02	0.02
<u>Red Bird - Zone 2 (tons) Above 800 Level</u>			113,400	113,400
Grade -				
Lead (%)			0.03	0.03
Zinc (%)			4.19	4.19
Silver (ozs/ton)			1.10	1.10
Cadmium (%)			0.04	0.04
<u>Red Bird - Zone 3 (tons) Above 800 Level</u>			67,000	67,000
Grade -				
Lead (%)			0.07	0.07
Zinc (%)			4.77	4.77
Silver (ozs/ton)			0.36	0.36
Cadmium (%)			0.05	0.05
<u>Remnants of Other Zones (tons)</u>	31,000			31,000
Grade -				
Lead (%)	1.67			1.67
Zinc (%)	4.37			4.37
Silver (ozs/ton)	0.29			0.29
Cadmium (%)	0.02			0.02
<b>CONTAINED METAL:</b>				
Lead (tons)	2,341.3	3,266.5	334.8	5,942.6
Zinc (tons)	6,126.7	8,547.7	8,611.6	23,286.0
Silver (ozs)	40,658	56,724	153,268	250,650
Cadmium (lbs)	56,080	78,240	163,800	298,120
<b>AVERAGE GRADES:</b>				
Lead (%)	1.67	1.67	0.17	
Zinc (%)	4.37	4.37	4.40	
Silver (oz/ton)	0.29	0.29	0.78	
Cadmium (%)	0.02	0.02	0.04	

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REEVES MacDONALD MINES LTD.  
Economic Evaluation of Hecla/ReMac Joint Venture  
240K and Red Bird Above 800 Level Only  
Assumptions

1. The Red Bird Zones 1, 2 and 3, above the 800 Level, are continuous ore zones projected between diamond drill intersections.
2. From present interpretation the #1 ore zone would not be mined above the 800 Level as the ore appears to be oxidized.
3. While present information indicates the possible existence of a fourth ore zone, it has been assumed it cannot be mined because of its proximity to the hangingwall.
4. The mineable zones are assumed to have a minimum of faulting.
5. It is assumed that Zone 2 and 3 are not oxidized below the projected sulfide-oxide line.
6. It is assumed that intersected water can be controlled with only a minimum of grouting.
7. Development of the Upper Red Bird ore will begin March 1, 1976, with a production level of 16,300 tons of ore per month being reached in February 1977.
8. The borehole will be completed in March 1975.
9. The following concentrate tonnages and grade have been assumed:

	<u>Dry Tons/100 Tons of Ore</u>	<u>% Pb</u>	<u>% Zn</u>	<u>% Cd</u>	<u>Ozs/Ton Ag</u>
Zinc -					
Zone #2	7.06	0.43	54.00	0.53	11.20
Zone #3	8.04	0.87	54.00	0.56	3.13
240 K	7.18	2.22	51.90	0.21	1.20
Lead -					
240 K	2.11	60.86	10.07	0.04	3.66

10. It is assumed concentrates will be sold under the terms of the existing ReMac concentrate contracts modified to include current labor, fuel and energy escalators.
11. Equipment will be purchased and delivered as scheduled.

12. At the established basic values and at projected escalation rates and metal prices, "super royalty" will be payable to the British Columbia Government at the rate of 4% of net smelter value.
13. Projected manpower requirements during mining of the 240K are estimated as follows:

Skip Tenders	3
Hoistmen	3
Trammers	10
Slusher and Muckers	9
Raise Miners	4
Timbermen	3
Mechanics (Underground)	2
Miners	8
Miscellaneous	6
Total Mine	<u>48</u>
Mill and Assay Office	11
Surface	5
Compressor	4
Mechanics	5
Electrical	3
Staff	18
Total	<u>94</u>

Mining of the Upper Red Bird ore zone will require two trammers and one timberman in addition to the above listed manpower for a total of 97 people.

14. Ore reserves are assumed to be sufficient to allow continuation of the project through mid-1979 and depreciation of new equipment and amortization of development costs have been recognized accordingly.
15. It is assumed a new contract will be negotiated with the labor union with wage and fringe increases less than those currently asked by the union. Labor escalators used are 1975 - 33%, 1976 - 10%, 1977 - 10%. For example, the miner's rate is currently \$4.67 per hour with an additional 99¢/hour fringe benefit cost, for a total of \$5.66 per hour. The assumed increases would result in a \$7.53 cost (wage and fringe) in 1975, \$8.10 in 1976, etc.
16. No provision has been made for payment of Federal (or Provincial) income taxes on the assumption that B.C. royalty will be a deductible item.

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REEVES MacDONALD MINES, LTD.  
Economic Evaluation on Hecla/ReMac Joint Venture  
Price and Cost Escalation Assumptions

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>Average</u>
METAL PRICES:				
Lead (¢/lb)	21.50	21.00	21.50	21.33
Zinc (¢/lb)	34.50	34.50	34.50	34.50
Silver (\$/oz)	3.65	5.00	5.25	4.63
Cadmium (\$/lb)	2.62	3.25	3.50	3.12
COST ESCALATORS: (1)				
Hourly Labor - Regular, Bonus, Fringe	33%	10%	10%	17.7%
Staff Salary & Fringe	33%	10%	10%	17.7%
Supplies (fixed and variable)	15%	7%	5%	9.0%
Freight (hauling concentrates)	18.6%	5%	5%	9.5%
Freight (metal)	20.3%	5%	5%	10.1%
Average Smelter Labor Rate (\$/hr)*	6.503	6.984	7.506	-
Average Zinc Plant Labor Rate (\$/hr)*	6.273	6.737	7.241	-

(1) from 1974 base

\* includes all fringes

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REEVES MacDONALD MINES LTD.  
Economic Evaluation of Hecla/ReMac Joint Venture  
240K and Red Bird Above 800 Level Only  
Development and Equipment Costs

The sequence for developing the Red Bird #2 and #3 zones above the 800 level is planned as follows:

1. Grout the present 800 face and advance the drift 100 feet west and then south 550 feet to cross the three zones.
2. Drive the 1250 drive in a westerly direction to the projection of the three zones.
3. Excavate a borehole station on the 1250 level for 550 feet bored-raise to the 800 level for second exit and ventilation.
4. Raise on the #2 and #3 zones to a scam level and install chutes.
5. Prepare the area for mining.
6. The first development ore is expected to be processed three months after approval to proceed.

The following are planned equipment requirements:

8 Jacklegs	\$ 19,500
4 Stopes	10,000
2 Longhole Drills (123)	22,250
2 Bars, Arms, etc.	1,875
4 20 H.P. Slushers	16,250
4 36" Scrapers	5,250
2 50 H.P. Slushers	15,000
2 48" Scrapers	3,875
8 60 cu. ft. Cars	35,000
2 Trolley Locomotives	25,000
2 Rectifiers	17,500
4 7.5 H.P. Tuggers	7,750
Fans, Welder, Dump Cylinders, Switch Gear	20,750
Sub-Total	<u>200,000</u>
Contingencies	26,875
Total Equipment	<u><u>\$226,875</u></u>

Note: Above program and equipment list do not include exploration and development driving and diamond drilling for the Lower Red Bird target area.

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REEVES MacDONALD MINES, LTD.  
Economic Evaluation of Hecla/ReMac Joint Venture  
240K and Red Bird Above 800 Level Only  
Development and Equipment Cost Schedule  
(000s Omitted)

	1975			1976						
	<u>Feb.</u>	<u>March</u>	<u>April</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Total</u>
<u>RED BIRD DEVELOPMENT:</u>										
800 Level Drift (650 ft. @ \$154/ft)				\$ 33.4	\$ 33.4	\$ 33.4	\$ -	\$ -	\$ -	\$100.2
1250 Level Drift (1200 ft @ \$154/ft)				30.8	30.8	30.8	30.8	30.8	30.8	184.8
550 Foot Raise (\$140/ft)				-	-	-	25.6	25.7	25.7	77.0
5000 Foot Diamond Drilling (\$14/ft)				-	-	23.3	23.3	23.4	-	70.0
Grouting 800 Level Face				4.6	4.7	4.7	-	-	-	14.0
Total Red Bird Development				<u>\$ 68.8</u>	<u>\$ 68.9</u>	<u>\$ 92.2</u>	<u>\$ 79.7</u>	<u>\$ 79.9</u>	<u>\$ 56.5</u>	<u>\$446.0</u>
<u>240K ZONE DEVELOPMENT:</u>										
Bore Hole	<u>\$ 75.0</u>	<u>\$ -</u>	<u>\$ -</u>							<u>\$ 75.0</u>
Total Development	<u>\$ 75.0</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 68.8</u>	<u>\$ 68.9</u>	<u>\$ 92.2</u>	<u>\$ 79.7</u>	<u>\$ 79.9</u>	<u>\$ 56.5</u>	<u>\$521.0</u>
<u>EQUIPMENT PURCHASE</u>	<u>\$ 75.0</u>	<u>\$ 75.0</u>	<u>\$ 76.9</u>							<u>\$226.9</u>
Total Development & Equipment Costs	<u>\$150.0</u>	<u>\$ 75.0</u>	<u>\$ 76.9</u>	<u>\$ 68.8</u>	<u>\$ 68.9</u>	<u>\$ 92.2</u>	<u>\$ 79.7</u>	<u>\$ 79.9</u>	<u>\$ 56.5</u>	<u>\$747.9</u>

Notes: Development cost rates are based on current cost experience escalated for expected cost increases in labor and materials.  
Above costs do not include exploration and development driving and diamond drilling costs for the Lower Red Bird target area.

Neil Blaney - Res Mgr @ Reeves

re audit. to check costs in brief

P4 h. statements for 1974

Ron McN. -