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Silmonac Valuation / Burden Invest

801182

ESTIMATE & EVALUATION
of
ORE RESERVES & PRODUCTION
SILMONAC MINES PROPERTY
NEW DENVER, BRITISH COLUMBIA.

W.M.SHARP, P.Eng. NOVEMBER, 1971

TEL: BUS. 987-5322
RES: 987-9520

WILLIAM M. SHARP, P.ENG.
CONSULTING GEOLOGICAL ENGINEER

171 WEST ESPLANADE
NORTH VANCOUVER, B.C.

NOVEMBER 29. 1971

MESSRS. FIGUEROA
DOUGLASS
WALKEY.
(SEP. LETTER TO A. BULLER)

RE. REPORT: 'ESTIMATE & EVALUATION OF ORE RESERVES & PRODUCTION, SILMONAC MINES PROPERTY.' NOV. 23. 1971

THE ENCLOSED PAGES 4, 5, & 6 ARE TO REPLACE THE CORRESPONDING PAGES OF THE ABOVE REPORT RECENTLY MAILED TO YOU.

THESE PAGES HAVE BEEN REVISED ON THE BASIS OF NEW INFORMATION OBTAINED AND KINDLY PROVIDED BY MR. A. BULLER.

THE REVISIONS DO NOT AFFECT THE OTHER SECTIONS OF THE REPORT.

RESPECTFULLY SUBMITTED.

W. M. Sharp.

ENCL.

CABLE ADDRESS
ARBULL - TORONTO

A. E. BULLER LTD.
CONSULTING GEOLOGISTS
SUITE 1715 - 25 KING ST. WEST
TORONTO 1, CANADA

TELEPHONE
(416) 366-0861

November 24, 1971.

Mr. William M. Sharp, P. Eng.,
171 West Esplanade,
North Vancouver, B.C.

Dear Bill:

As I told you on the phone, the senior man of British Metals responsible for concentrate settlements is in the hospital and my friend, the president of the company, was too busy to go over your figures. However, he gave them to a young man in the office who does all the routine work on settlements and I spent a half hour with him this afternoon going over your figures and his, which I presume are correct although they have not been checked by any senior man at the metal company.

You will note that he has put his corrections in red on your calculation sheets. In the case of the lead concentrate, the difference is due to your forgetting to use a 95% factor for payment on lead and your use of the 1972 rather than the 1971 treatment charge (which you had explained you had done deliberately) and a slight difference in the moisture penalty since the average moisture for the Silmonac concentrates has been about 9.5%. Eight per cent is allowed, and there is a penalty of 30¢ a unit above this. Also, in your duty calculations there should be a deduction of 2% from the lead in the lead cons and 2% from the zinc in the lead cons. Since lead is not paid for in zinc cons, there is no duty there on it and there is a 6% deduction from the zinc in the zinc cons before a duty of 1.67¢ is applied.

The only other error in your work is the zinc price. The contract originally used the East St. Louis price as a basis of settlement. This is no longer quoted in the Metal Journal, and by agreement the prime Western price less 0.5¢ is now used. This gives a current price of 16.5¢ per pound.

The young man was not happy about the grades of concentrates you had assumed, and he therefore went back and averaged grades from concentrate settlements over the past several months, and these are as shown on his sheet 1. The prices are also shown on this sheet, and I know you are aware that both lead and silver vary from month to month. Using these average concentrate grades and the prices as shown, he worked out the value per short dry ton for lead and zinc cons as shown on his sheets 2 and 3. These are in U.S. dollars, since he says there is no point in correcting for U.S. dollars at intermediate stages in the calculation.

Mr. William M. Sharp November 24, 1971.

I don't know whether all this answers the questions you had, but I am sending it along for you to play with and hope that it is of some help. I don't know how you now can go from these figures to the value in place of units of the three metals, since it is a matter of opinion how you would distribute treatment and freight charges. Should silver bear any part of these charges which would be incurred anyway whether there was silver present or not? I'd be interested in learning how you take it from here.

With best regards,

Sincerely,

A. E. Buller.

AEB:WS

encl.

TEL: BUS. 987-5322
RES: 987-9520

WILLIAM M. SHARP, M.A.Sc., P.Eng.
CONSULTING GEOLOGICAL ENGINEER
171 W. ESPLANADE, NORTH VANCOUVER, B.C.

November 23, 1971

Burden Investors Services Inc.,
630 Fifth Avenue,
New York, N.Y. 10020
U.S.A.

Attention: Mr. Roy N. Figueroa

Gentlemen:

With this, the undersigned respectfully submits his report "Estimate and Evaluation of Ore Reserves and Production, Silmonac Mines Property, near New Denver, British Columbia".

The final section of the report deals with your specific request (November 5, 1971) for an estimate of the present value of the production payment. This, in view of the currently-apparent limited extent of "positive" and "probable" ore reserves, is largely contingent upon the degree of success which will attend future exploration and development of adjacent areas of the Silmonac lode. At present, it appears that the bulk of the net earnings accruing from mining of ore in the presently-estimated 'positive' and 'probable' categories would be directed towards the repayment of the October 15, 1971 balance of operating capital originally advanced.

The reported estimate of 'possible' ore reserves is considered to be both realistic and conservative, in that it is based on conservative assumptions of grade and an attainable rate of exploration and development advance - future market conditions permitting - over the next 12-14 months. Beyond this, continued exploration of the easterly and westerly extensions of the lode into geologically-favourable areas should result in the discovery of new ore bodies - if a reasonably high rate of exploration and development advance can be sustained.

The personal assumptions and approximations entering into the following calculations of production revenue, unit metal values, and operating costs are believed to be of less importance than those involved in the calculation of the more fundamental ore

Continued.....

reserve figures. Consequently, the former are not expected to introduce errors large enough to invalidate subsequent valuation estimates. However, any comments or suggestions in this regard will be appreciated.

Yours very truly,

W. M. Sharp, P. Eng.

I N D E X

SCOPE OF ASSIGNMENT & REPORT

Initially, the writer was directed to determine the present fair market value of royalty payments that may be made to Burden Investors Service, Inc. on future production from the Silmonac mine. However, from his preliminary appraisals of the mine data pertaining to this assignment, the writer judged that the apparent ore reserves, as of October 15, 1971, were insufficient to produce significant earnings over and above those required to complete the pay-back of the operating capital originally advanced. The writer advised his clients of this situation, and was subsequently directed to furnish his opinions on the probability and feasibility of increasing ore reserves by further development and exploratory work; this was to be accompanied by a valuation of such 'possible' ore reserves, with consideration of the discovery-probability factor and appropriate discounts for present worth.

This report is based on the following premises:

1. A factor of 10 cu. ft. per ton applies to the in-place ore reserve estimates.
2. The minimum mining width is approximately 5 feet.
3. Metal prices as quoted in E & MJ on October 31, 1971. – Pb 17¢ Zn 17¢
4. Duties on lead and zinc as derived from mine statements. (contract @ 16.5¢)
5. Mill through-put of approximately 3000 dry tons per month. no Pb 1.5¢/lb Zn 1.5¢/lb
6. Concentrate treatment and production charges as given in the British Metals purchase agreements and mine statements, as of September 30, 1971.

The writer visited the mine office at New Denver, B.C. during the week of October 18-24, 1971 in order to acquire the background data for this report - principally the new information which had been accumulated since his previous visit during February, 1970. The recent visit entailed:

Continued.....

1. Studies of geological and production maps.
2. Concurrent discussions re the geology and mine operations with Messrs. A. Buller, W. Hogg, and P. Dickson.
3. Compilation of a rough reference plan which included details of the mine geology, exploration-development headings, stopes, pillars, diamond drill holes - plus development, stope, and drill hole assays. This comprises the writer's ore reserve plan.
4. Compilation of supplementary sample-assay detail and production data.
5. Discussions of geological details and mapping procedures with Messrs. Hogg and Buller.

The following background work on which this report is based has been accomplished since the above visit.

1. Completion of ore block plots, with revisions as required, on the 20-scale reference plan.
2. Preparation of a 12-section set of dip-normal cross-sections, including workings, diamond drill holes, and geology.
3. Transfer of cross-sectional detail to the reference plan.
4. Calculation of weighted-average grades and tonnages of individual ore blocks and pillars.
5. Calculation of the combined weighted average grades and tonnages contained in the indicated blocks and delineated pillars - providing the table 'Ore Reserve Estimates'.
6. Subsequent calculations of net values of concentrate and ore, as required for this report.
7. Delineation and calculation of 'possible' (geologically-inferred) ore blocks.
8. Preliminary calculations pertaining to production and development rates.

Mr. Hogg recently advised that the preparation of ore reserve plans and estimates is in progress at the mine office. These are sure to include more detail and furnish more exact data than those prepared by the writer.

Continued.....

ACKNOWLEDGMENTS

Messrs. W. C. Douglass and R. N. Figueroa have provided the writer with the requisite background data dealing with the financial aspects of this assignment.

Messrs. A. E. Buller and Wm. Hogg provided considerable assistance at New Denver by way of the provision of special geological cross-sections, tabulations of stope and mine production, monthly operating records, etc. They also contributed much of their own time towards personal discussions of geological and operational details.

The writer hereby expresses his appreciation and thanks to the above persons for the various kinds of assistance received.

ORE RESERVE ESTIMATES

Definitions

(a) Generally, ore contained in pillars is classified as 'positive'.

(b) Generally, ore blocks contiguous to stope walls (with more-or-less confirmation by channel sampling), and those reasonably well delineated by drill-hole intersections are classified as 'probable' ore.

(c) Ore blocks which may comprise (hidden) extensions of 'probable' ore blocks and/or those which are inferred principally by the geological parameters are classified as 'possible' ore.

Positive + Probable Ore Reserves (Solid)
= 29,200 dry tons @ Ag, 17.2 oz/T; PB, 5.9%; ZN, 6.9%; (CD, 0.048%)
Plus Allowance for Broken Ore Reserves,
= 800 dry tons @ the above grade
Total = 30,000 dry tons @ AG, 17.2 oz/T; PB, 5.9%; ZN, 6.9%; (CD, 0.048%)

Possible Ore = 36,500 Tons @ the above grade.

Continued.....

CONCENTRATE EVALUATIONS

LEAD CONCENTRATES - Net returns per dry ton — **Oct. 15/71 Prices**

(AG, 100 oz./T.; PB, 66.0%; ZN, 7.3%) ... AG, @ $1.30/oz.
PB, @ $0.141/lb.
ZN, @ $0.165/lb.

(= Avg. grade produced 1971 to Sept. 30, to nearest 1/10%)

$ U.S. 1.00 = $ Can. 1.01

Payments

AG @ 100.0 x 95% = 95.0 oz. X (1.30 - .01) X 1.01..... $ 123.780

PB @ (66.0 - 1.5)% = 1290# X 95% X $(0.1410 - .015) X 1.01.... $ 155.96

ZN @ 7.3% = 146# X .0175 X 1.01..... $ 2.580

GROSS PAYMENTS ..... $ 282.32

Less:

Treatment Charge.. $23.00 (relevant to report)
Rep. & Assaying... 0.66 (per record)
Moisture Penalty.. 0.41 (per record) $24.07 X 1.01..... $ 24.31

NET VALUE, F.O.B. U.S. SMELTER ..... $ 258.01

Less:

Duty on Lead = (66.0 - 2.0)%, or 1280# X .015....19.20
Duty on Zinc = (7.3 - 2.0)%, or 106# X .0167... 1.77
Freight to Smelter (per record).....15.30..... $ 36.27

NET VALUE PER TON, F.O.B. MILL ..... $ 221.74

Continued.....

CONCENTRATE EVALUATIONS Cont'd.

ZINC CONCENTRATES - Net returns per dry ton

(AG, 80.0 oz.; ZN, 54.1%; PB, 1.0%; CD, 0.40%)...

(= Avg. grade produced 1971 to Sept. 30, to nearest 1/10%)

Oct. 15/71 Prices

AG, @ $1.30/oz.
ZN, @ $0.165/lb.
PB, @ $0.141/lb.
CD, @ $1.50/lb.

$ U.S. 1.00 = $ Can. 1.01

Payments

AG @ 80.0 oz. X 80% = 64.0 oz. X $1.30 X 1.01 ..... $ 84.03

ZN @ 54.1% or 1082.0# X 85% = 919.7# X 0.165 X 1.01 ..... $ 153.27

PB @ 1% = 20# - no payment .....

CD @ 0.4% = 8# - 2.6# = 5.4# X ($1.50 - .50) X 1.01 ..... $ 5.45

GROSS PAYMENTS ..... $ 242.75

Less:

Treatment Charge (per sched. ZN @ 16¢, 1972) = 54.37
Rep. & Assaying (per record) = 0.54
Moisture Penalty (per record) = 0.57 55.48 X 1.01 ..... $ 56.03

NET VALUE, F.O.B. U.S. SMELTER ..... $ 186.72

Less:

Duty on Zinc = (54.1 - 6.0)%, or 962# X .0167 ... 16.07
Duty on Lead = NIL
Freight to Smelter (per record)..... 15.66 ..... $ 31.73

NET VALUE PER TON, F.O.B. MILL ..... $ 154.99

Continued.....

UNIT METAL VALUES - NET SMELTER Less Duty & Freight Truck- Net millhead Value

Silver (Ag) @ $1.041 per oz.

Lead (Pb) @ $0.077 per lb.

Zinc (Zn) @ $0.067 per lb.

Cadmium (Cd) @ $0.54 per lb.

The above include deductions for metal losses, price, treatment, Pb & Zn duty, and freight.

UNIT METAL VALUES - MILL-HEAD BASIS

Silver (Ag) = 1.041 X 96% ..... $1.00 per oz.

Lead (Pb) = 0.077 X 95% ..... $0.073 per lb.

Zinc (Zn) = 0.067 X 91% ..... $0.061 per lb.

Cadmium (Cd) = 0.54 X 91% ..... $0.48 per lb.

The above include deductions for mill (tailings) losses.

NET VALUE OF ESTIMATED ORE RESERVES

Grade: Ag, 17.2 oz./T.; Pb, 5.9%; Zn, 6.9%; Cd, 0.048% (GROSS VAL)

Silver	- 17.2 oz. @ $1.00	$ 17.20
Lead	- 5.9% = 118 lbs. @ 0.073...	$ 8.62
Zinc	- 6.9% = 138 lbs. @ 0.061...	$ 8.42
Cadmium	- 0.048% = 0.96 lbs. @ 0.48..	$ 0.46
	TOTAL	$ 34.70 per dry ton

per Cale. Feb/72 Total - $ 35.74. " " "

Continued.....

STATEMENT OF NET OPERATING EXPENSES

The following are taken from year-to-date figures presented on the Statement of Operating Profit, September 30, 1971, but 'rounded' to the nearest 5¢ per ton.

open stoping w steel/rock bolt/pillar support of backs & slushing (0-2 stage) to loading chutes.

Exploration (excluded here)	$ 0.00	per dry ton	3.50 (2)
Extraction (including stope prep.)....	$ 8.85	per dry ton	8.75 (1)
Mine-to-Mill Haulage.....	$ 1.00	per dry ton	1.00 (3)
Milling.....	$ 5.85	per dry ton	6.00 (4)
Office Expense.....	$ 2.05	per dry ton	2.00 (5)
General Expense.....	$ 1.75	per dry ton	1.75 (6)
TOTAL	$19.50	per dry ton	23.00

STATEMENT-REPAYMENT OF PRODUCTION CAPITAL

Bursler

Pre-production advance.....	$ 841,000.
Paid back to date.....	$ 480,000.
Balance payable.....	$ 361,000. as of Oct. 15/71

240,000 ± - Jan 15/72.

Range of net operating profit

GROSS EARNINGS ESTIMATES

3000 T/mo. = 100 T/day (7 day)

Constants:

(a) Production of 3000 tons per mo. of ore @ mill-head net value..... $ 34.70/T

(b) Net operating expense, incl. 340' per mo. stope prep. cost..... $ 19.50/T

Feb/72 = $20.25

Variables:

(a) Amount of tunnel & diamond drill exploration/mo.

(b) Metal price (concentrate revenue) & op. cost variations not considered.

Estimate (A) - Salvage basis (exploration excluded)

Gross (Net) operating profit @ $34.70 - $19.50	$ 15.20/T
Less allowance for B.C. Mining Tax	$ 1.44/T *
GROSS EARNINGS (net op. profit) ...	$ 13.76/T

Gross earnings, 30,000 T (10 mo.) 'positive' & 'probable' ore (net op profit) 30,000 x 13.76	$412,800.
Gross earnings, 36,500 T (12 mo.) 'possible' ore ..... 36,500 x 13.76	$502,240.

* Note B.C. Mining Tax calc.

$\left(\frac{\$15.20 \times 30{,}000 \text{ T} - 25{,}000}{30{,}000}\right) \times 10\%$ where 30,000 tons = total for year (or "year's production")

Estimate (B)

Include explor. drifting & X-cutting.... @ 100'/mo. @	$ 50./ft.
Include diamond drilling..... @ 500'/mo. @	$6.50/ft.
Exploratory tunnelling & diamond drilling expense....	$ 2.75/T
Gross (Net) operating profit	$12.45/T
Less B.C. Mining Tax	$ 1.16/T
(Gross Earnings)	$11.29/T
net op. profit	
Gross earnings - 30,000 tons, 'positive' & 'probable' ore	$338,700.
Gross earnings - 36,500 tons, 'possible' ore	$412,085.

Estimate (C)

Include explor. drifting & X-cutting.... @ 200'/mo. @	$ 45./ft.
Include diamond drilling..... @ 750'/mo. @	$6.50/ft.
Exploratory tunnelling & diamond drilling expense....	$ 4.63/T
Gross (Net) operating profit.....	$10.57/T
Less B.C. Mining Tax.....	$ 0.98/T
(Gross Earnings)	$ 9.59/T
net op. profit	
Gross earnings - 30,000 tons, 'positive' & 'probable' ore	$287,700.
Gross earnings - 36,500 tons, 'possible' ore	$350,035.

Estimate (D)

Include drifts, cross-cuts & raises.... @ 300'/mo. @	$ 40./ft.
Include diamond drilling..... @ 1000'/mo. @	$6.50/ft.
Exploratory tunnelling & diamond drilling expense....	$ 6.17/T
Gross (Net) operating profit	$ 9.03/T
Less B.C. Mining Tax	$ 0.82/T
(Gross Earnings)	$ 8.21/T
net op. profit	
Gross earnings - 30,000 tons, 'positive' & 'probable' ore	$246,300.
Gross earnings - 36,500 tons, 'possible' ore	$299,655.

Estimate (E)

Include drifts, cross-cuts & raises.... @ 400'/mo. @ $ 40./ft.	
Include diamond drilling..... @ 1250'/mo. @ $6.50/ft.	
Exploratory tunnelling & diamond drilling expense....	$ 8.04/T
Net operating profit	$ 7.16/T
Less B.C. Mining Tax	$ 0.63/T
Gross Earnings	$ 6.53/T

Gross earnings - 30,000 tons, 'positive' & 'probable' ore	$195,900.
Gross earnings - 36,500 tons, 'possible' ore	$238,345.

Estimate (F)

Include drifts, cross-cuts & raises.... @ 500'/mo. @ $ 40./ft.	
Include diamond drilling ..... @ 1500'/mo. @ $6.50/ft.	
Exploratory tunnelling & diamond drilling expense....	$ 9.92/T
Net operating profit	$ 5.28/T
Less B.C. Mining Tax	$ 0.44/T
Gross Earnings	$ 4.84/T

Gross earnings - 30,000 tons, 'positive' & 'probable' ore	$145,200.
Gross earnings - 36,500 tons, 'possible' ore	$176,660.

ESTIMATED SCALE OF OPERATION TO PROVIDE PAY-BACK OF OPERATING CAPITAL

Net mill-head value of ore reserves.....		$ 34.70/T
Less:		
Net operating expense, incl. 340'/mo. stope dev. =	$19.50/T	
Explor. drifts & cross-cuts @ 75'/mo. @ $50./ft. =	1.25/T	
Exploratory diamond drilling, 300'/mo. @ 6.50/ft. =	0.65/T	$ 21.40/T
Net operating profit		$ 13.30/T
Less B.C. Mining Tax		$ 1.25/T
Gross Earnings		$ 12.05/T

Gross earnings - 30,000 tons, 'positive' & 'probable' ore	$361,500.

PRESENT VALUE ESTIMATES ON 'POSSIBLE' ORE RESERVES

General Assumptions:

(a) Probability that 36,500 tons will accrue from one (1) years additional (continued) exploratory work.

(b) Net operating expense, incl. 340'/mo. stope prep. @ $19.50/T.

(c) Production @ 3,000 tons per mo. ore of net value - $34.70/T.

(d) Discovery-probability = 50%; discount on earnings 25% per yr.

(e) Estim. life 'positive' & 'probable' ore reserve from October 15/71 to July 15/72.

(f) Estim. life 'possible' ore reserve from July 16/72 to July 15/73.

Estimate (A) - no allowance for exploratory work.

Gross earnings, unit basis = $13.76/T or $41,280 per month.

(1) Gross earnings July 15/72 - Dec. 31/72 = 5½ X $41,280 = $227,040.

(2) Gross earnings July 1/73 - July 15/73 = 6½ X $41,280 = $268,320.

Pres. Value (1) 50% X $227,040 due 1 yr. hence; disct. @ 25%
= 0.8 X $113,250... $ 90,816.

Pres. Value (2) 50% X $268,320 due 1½ yr. hence; disct. @ 25%
= 0.72 X $134,160... $ 96,595.

Total Present Value of 'Possible' Ore Reserves ..... $187,411.

Estimate (B) - Incl. 100'/mo. explor. tunnel; 500'/mo. dia. drill.

Gross earnings, unit basis = $11.20/T or $33,870 per month.

(1) Gross earnings July 15/72 - Dec. 31/72 = 5½ X $33,870 = $186,285.

(2) Gross earnings Jan. 1/73 - July 15/73 = 6½ X $33,870 = $220,155.

Pres. Value (1) 50% X $186,285 due 1 yr. hence; disct. @ 25%
= 0.8 X $ 93,142.50... $ 74,514.

Pres. Value (2) 50% X $220,155 due 1½ yr. hence; disct. @ 25%
= 0.72 X $110,077.50... $ 79,256.

Total Present Value of 'Possible' Ore Reserves $153,770

Estimate (C) - Incl. 200'/mo. explor. tunnel; 750'/mo. dia. drill

Gross earnings, unit basis = $9.59/T or $28,770 per month.

(1) Gross earnings July 15/72 - Dec. 31/72 = 5½ X $28,770 = $158,235.

(2) Gross earnings Jan. 1/73 - July 15/73 = 6½ X $28,770 = $187,005.

Pres. Value (1) 50% X $158,235 due 1 yr. hence; disct. @ 25%
= 0.8 X $ 79,117.50... $ 63,294.

Pres. Value (2) 50% X $187,005 due 1½ yr. hence; disct. @ 25%
= 0.72 X $ 93,502.50... $ 67,322.

Total Present Value of 'Possible' Ore Reserves ..... $130,616.

SUMMARY

Operation (A), including 340'/mo. of stope preparation, but with no allowance for exploratory work, would most nearly meet the requirements concerning the best immediate return on the $500,000 production payment. However, operations (B) and (C) contain other built-in assets, in that they provide for a continuation of exploratory work; hence offer better probabilities for the long-term maintenance of ore reserves.

The writer's provisional layouts of five 'possible' ore blocks are such that 4000 feet of drifts, crosscuts, and raises would be adequate for their development. This would be provided by the included 12 X 340'/mo. = 4080 ft. of stope preparation allowed for in general item of 'ore extraction'.

Respectfully submitted,

W. M. Sharp, P. Eng.

CONCENTRATE EVALUATIONS

LEAD CONCENTRATES - Net returns per dry ton Oct. 15/71 Prices

(AG, 100 oz./T.; PB, 66.0%; ZN, 7.3%)... AG, @ $1.30/oz.
(= avg. grade produced 1971 to Sept. 30, to nearest $\frac{1}{10}$ %) PB, @ $0.141/lb.
ZN, @ ~~$0.17/lb.~~ # 0.165/lb.
$ U.S. 1.00 = $ Can. 1.01

Payments

AG @ 100.0 x 95% = 95.0 oz. X (1.30 - .01) X 1.01 ..... $ 123.780
PB @ (66.0 - 1.5)% = 1290# X 95% X $(0.1410 - .015) X 1.01 ..... $ ~~164.165~~ 155.96
ZN @ 7.3% = 146# X .0175 X 1.01 ..... $ 2.580
282.32
GROSS PAYMENTS ..... $ ~~290.53~~

Less:

Treatment Charge.. $23.00 (relevant to report)
Rep. & Assaying.. ~~0.66~~ 0.65 (per record)
Moisture Penalty.. ~~0.41~~ 0.60 ↑ ~~$24.25~~ 24.07 X 1.01 ..... $ ~~24.49~~ 24.31
↳ (per record)
NET VALUE, F.O.B. U.S. SMELTER ..... $ ~~266.04~~ # 258.01

Less:

= (66.0-2.0)% of 1280# x .015
Duty on Lead = ~~1320# X 0.015~~ ..... ~~19.80~~ 19.20
Duty on Zinc = ~~146# X 0.0149~~ ..... ~~2.18~~ 1.77
Freight to Smelter (dry-ton basis)* .. ~~15.00~~ 15.30 ..... $ ~~36.98~~ 36.27
(per record)
NET VALUE PER TON, F.O.B. MILL ..... $ ~~229.06~~ # 221.74

= (7.3-2.0)% of 106# x .0167 - - -

~~* Quoted @ $13.85 per wet-ton~~

Continued.....

CONCENTRATE EVALUATIONS Cont'd.

ZINC CONCENTRATES - Net returns per dry ton

(AG, 80.0 oz.; ZN, 54.1%; PB, 1.0%; CD, 0.40%)
(= Avg grade produced 1971 to Sept. 30, to nearest 1/10 %)

Oct. 15/71 prices
AG, @ $1.30/oz.
ZN, @ ~~$0.17/lb.~~ # 0.165/lb.
PB, @ $0.141/lb.
CD, @ $1.50/lb.

$U.S. 1.00 = $ Can. 1.01

Payments

AG @ 80.0 oz. X 80% = 64.0 oz. X $1.30 X 1.01 ..... $ 84.03
ZN @ 54.1% or 1082.0# X 85% = 919.7# X ~~0.17~~ 0.165 X 1.01 ..... $ ~~157.91~~ 153.27
PB @ 1% = 20# - no payment .....
CD @ 0.4% = 8# - 2.6# = 5.4# X ($1.50 - .50) X 1.01 ..... $ ~~5.40~~ # 5.45

GROSS PAYMENTS ..... $ ~~247.34~~ # 242.75

Less:

Treatment Charge.. ~~$53.75~~ (per sched. Zn @ 16¢, 1972) = 54.37
Rep. & Assaying... ~~0.65~~ (per record) - - 0.54
Moisture Penalty.. ~~0.60 $55 X 1.01 ..... $ 55.55~~ 56.03

NET VALUE, F.O.B. U.S. SMELTER ..... $ ~~191.79~~ # 186.72
(per record)

Less:

Duty on Zinc = ~~1082# X $0.0149.... $16.12~~ (54.1 - 6.0)% of 962# x .0167 - 16.07
Duty on Pb - nil
Freight to Smelter ~~(dry-ton basis)*~~ ~~15.00~~ (per record) 15.66 ..... $ ~~31.12~~ 31.73

NET VALUE PER TON, F.O.B. MILL ..... $ ~~160.67~~ 154.99

~~* Quoted @ $13.85 per wet-ton~~

Continued.....

UNIT METAL VALUES - NET SMELTER ~~BASIS~~ LESS DUTY & FREIGHT

Silver (Ag) @ ~~$1.054~~ 1.041 per oz.
Lead (Pb) @ ~~$0.081~~ 0.077 per lb.
Zinc (Zn) @ ~~$0.071~~ 0.067 per lb.
Cadmium (Cd) @ ~~$0.57~~ 0.54 per lb.

The above include deductions for metal losses, price, treatment, Pb & Zn duty, and freight.

UNIT METAL VALUES - MILL-HEAD BASIS

Silver (Ag) = ~~@ $1.00 per oz.~~ 1.041 x 96% - $1.00 per oz.
Lead (Pb) = ~~@ $0.073 per lb.~~ 0.077 x 95% - $0.073 per lb.
Zinc (Zn) = ~~@ $0.061 per lb.~~ 0.067 x 91% - $0.061 per lb.
Cadmium (Cd) = ~~@ $0.48 per lb.~~ 0.54 x 91% - $0.48 per lb.

The above include deductions for ~~mine (fines) loss & mill (tailings) above.~~ mill (tailings) losses.

NET VALUE OF ESTIMATED ORE RESERVES

Grade: Ag, 17.2 oz./T.; Pb, 5.9%; Zn, 6.9%; Cd, 0.048%

Silver	- 17.2 oz. @ $1.00	$17.20
Lead	- 5.9% = 118 lbs. @ 0.073..	8.62
Zinc	- 6.9% = 138 lbs. @ 0.061..	8.42
Cadmium	- 0.048% = 0.96 lbs. @ 0.48 ..	0.46
	TOTAL	$34.70 per dry ton

Continued.....

ORE RESERVE ESTIMATES

'POSITIVE' & PROBABLE CATEGORY

AS OF OCTOBER 15, 1971

INDICATED BLOCKS

	ORE BLOCK No.	AREA Sq. FT.	AVG. THICK FT.	GROSS TONS.	AG. OZ.	PB %	ZN %	(CD % ON TOTALS)	GROSS TONS x AG. OZ.	GROSS TONS x PB %	GROSS TONS x ZN %
	B-1	224	5.0	110	30.0	8.0	8.0		3300	880	880
	B-2	30	5.0	15	57.0	20.0	14.0		855	300	210
	B-3	38	5.0	20	12.0	5.0	5.0		240	100	100
*	B-4	2850	6.0	1,710	29.5	9.7	10.3		50,500	16,580	17,600
	B-5	4420	5.7	2520	18.3	4.5	7.6		46,100	11,340	19,170
	B-6	3950	5.7	1,870	22.0	6.0	8.5		41,150	11,220	15,900
	B-7	1512	5.6	850	22.0	19.0	6.8		18,700	16,140	5,780
	B-8	1000	6.9	690	25.5	9.0	7.5		17,600	6,200	5,170
*	B-9	936	5.0	460	12.0	5.0	5.0		5,520	2,300	2,300
*	B-10	3900	5.6	2180	11.6	7.3	8.9		25,300	15,910	19,400
*	B-11	1310	7.0	920 (1044)	14.9	0.5	14.5		13,700	460	13,330
	B-12	1895	5.6	1060	19.1	3.0	10.7		21220	3,180	11,330
	B-13	3030	5.5	1670	15.5	4.5	8.8		25.850	7,510	14,700
	B-14	1300	8.4	1090	31.4	11.8	8.4		34,220	12,880	9,150
	B-15	380	5.0	190	17.4	2.8	10.7		3,305	152	20,350
	B-16	523	5.0	260	18.9	4.2	7.4		4,910	1,090	1,920
	B-17	780	5.2	400	14.0	4.4	7.7		5,600	1,760	3,080
	B-18	247	11.0	270	29.9	17.2	5.6		8.070	4,640	1,510
	B-19	680	6.0	400	12.0	5.0	6.0		4,800	2,000	2,000
*	B-20	837	5.2	435	16.0	4.4	4.9		6,960	1,915	2,130
	B-21	3980	5.0	1,990 (796)	20.9	3.8	6.4		41,600	7,570	12,730
	B-22	26	6.0	15	29.9	12.4	2.4		448	186	36
*	B-23	950	5.0	475	12.1	4.5	6.2		5,750	2,140	2,940
	B-24	1460	6.2	900	27.3	10.4	5.3		24,580	9,360	4,760
	B-25	1585	5.0	790	18.4	5.4	7.9		14,520	4,260	6,240
*	B-26	1540	6.0	924	29.6	8.4	15.3		27,350	7,760	14,130
	B-27	473	8.0	380	35.0	6.3	22.0		13,300	2,395	8,310
	B-28	1850	8.0	1,480	24.0	8.5	8.5		35500	12,580	12.580
	B-29	947	5.5	520	12.4	6.7	3.2		6.450	3,495	1,640
*	B-30	600	5.0	300	17.5	8.5	4.3		5,250	2,550	1,290
*	B-31	790	5.0	395 (479)	13.5	4.5	4.0		5.340	1,780	1,580
			TOTAL	24,389				TOTALS	513,988	170,633	232,246

	AG. OZ.	PB. %	ZN. %	
GROSS TONS, INDICATED ORE BLOCKS - 24,389 @	21.0	7.0	9.5	(BASIS = 100% OF GROSS AREA OF ORE BLOCKS.)
NET-TONS, EXCL. FUTURE PILLARS - 14,633 @	21.0	7.0	9.5	(BASIS = 60% " " " " " ")
DILUTE-RECOV. TONS INDIC. ORE BLOCKS - 19,023 @	16.2	5.4	7.3	(BASED ON 14,623 TONS + 30% WEIGHT-DIL. (= 36.9% VOL.-DIL.))
NET-TONS IN FUTURE PILLARS - - - - - 9,756 @	21.0	7.0	9.5	(BASIS = 40% OF GROSS AREA OF ORE BLOCKS.)
NET-RECOV. TONS IN FUTURE PILLARS - - 5,854 @	"	"	"	(BASIS = 60% OF 9756 TONS.)
DILUTE-RECOV. " " " " " " 8,196 @	15.0	5.0	6.8	(BASIS = 5854 TONS + 40% WEIGHT-DIL. (= 49.25% VOL-DIL.))

DELINEATED PILLARS

	ORE BLOCK No.	AREA Sq. FT.	AVG. THICK FT.	GROSS TONS	AG OZ.	PB %	ZN %	(CD % ON TOTALS)	GROSS TONS x AG. OZ.	GROSS TONS x PB %	GROSS TONS x ZN %
	P-1	65	6.0	40	82.0	26.0	20.2		3,280	1,040	808
	P-2	122	8.0	97	82.0	26.0	20.2		7950	2,520	1.960
	P-3	580	5.9	340	46.5	9.9	9.2		15,800	3,360	2,785
	P-4	286	6.5	185	57.5	0.0	20.9		10,620	0.000	3.870
	P-5	168	7.0	115	15.3	3.3	6.7		1,760	380	765
	P-6	400	5.0	200	28.4	0.12	9.1		5.640	24	182
	P-7	90	5.0	45	15.0 EST.	5.0 EST.	5.0 EST.		675	225	225
	P-8	319	6.5	210	29.5	20.0	10.5		6,200	4,200	2,205
	P-9	308	6.5	200	57.5	8.7	16.0		11,500	1,740	3,200
	P-10	205	7.5	155	17.0	4.7	11.6		2.635	728	1,800
	P-11	143	7.2	100 (687)	13.2	2.9	9.2		1,320	290	920
	P-12	294	5.5	162	10.0	6.3	5.4		1,620	1,020	875
	P-13	726	7.6	550	31.4	14.5	8.2		17,250	7,970	4,510
	P-14	900	5.5	495	25.3	15.6	5.8		12.530	7,720	2,870
	P-15	256	6.3	160	18.1	14.6	5.5		2,895	2,335	880
	P-16	200	6.0	120	44.4	14.7	6.7		5,330	1,765	804
	P-17	288	6.0	170	48.8	37.3	9.9		8,250	6,330	1,682
	P-18	105	5.5	55	39.1	22.6	8.6		2,150	1,242	473
	P-19	828	6.3	520	34.4	9.0	13.8		17.880	4,680	7,180
	P-20	162	6.5	105	29.2	14.2	5.9		3.065	1,490	620
	P-21	348	5.5	190 (252)	21.0	3.6	9.8		3.990	684	1,860
	P-22	432	7.0	300	25.5	7.0	11.6		7,650	2,100	3.490
	P-23	138	8.0	110	19.5	4.0	8.5		2,720	440	935
	P-24	736	5.2	380	13.8	5.7	6.1		5.250	2,165	2.320
	P-25	170	5.0	85	25.0	10.0	5.0		2,125	850	425
	P-26	650	7.5	490	23.0	11.9	5.7		11,280	5,830	2.795
	P-27	560	6.5	365	13.4	8.6	5.2		4.890	3,140	1,900
	P-28	312	6.0	187	11.9	7.6	7.4		2,225	1,420	1,385
	P-29	210	5.0	105	12.0	5.0	5.0		1,260	525	525
*	P-30	576	10.0	576	13.4	7.0	5.4		7.720	4,030	3,105
	P-31	1100	7.1	780	23.7	3.3	9.5		18500	2565	7.400
	P-32	350	5.0	175	14.0	10.7	8.7		2455	1,875	1,520
	P-33	420	7.2	300	16.2	6.1	5.2		4,860	1,830	1,560
	P-34	430	8.7	415 (426)	25.0	7.8	6.7		10 380	3,235	2,780
			TOTAL	8,482				TOTALS -	223,655	79.748	70,614

	AG. OZ.	PB. %	ZN. %	
GROSS TONS IN EXISTING PILLARS - - - - 8,482 @	26.3	9.4	8.3	(BASIS = 100% OF GROSS DELIN. AREA.)
NET-RECOV. TONS IN EXIST. PILLARS - - 5,089 @	26.3	9.4	8.3	(BASIS = 60% OF 8,482 TONS.)
DILUTE-RECOV. " " " " - - - 7,124 T. @	18.8	6.7	5.9	(BASED ON 5,089 TONS + 40% WEIGHT-DIL.)

SUMMARY - POSITIVE + PROBABLE ORE RESERVES

	AG. OZ/T	PB. %	ZN. %	CD. % (@ 0.006 Tl. Cd. per 1% Zn)
FROM EXISTING (ACT. 15/71) PILLARS - 7,124 DRY-TONS @	18.8	6.7	5.9	0.04
FROM INDICATED (NEW) ORE BLOCKS 19,023 " - " @	16.2	5.4	7.3	0.05
FROM FUTURE PILLARS - - - - - 8,196 " - " @	15.0	5.0	6.8	0.045
TOTAL - - - - - 34,343 DRY + TONS @	16.5	5.6	6.9	0.047
LESS 15% OF 34,343 DRY TONS FOR POSSIBLE MARGINAL & NON-RECOV. ORE - 5,143 " - " @	12.4	3.8	6.9	0.04
TOTAL MINEABLE ORE, EXCL. RESID. PILLARS = 29,200 DRY TONS @	17.2	5.9	6.9	0.048
" " " , PLUS BROKEN RESERVE = 30,000 " "				

* INCL. PROPORTION OF POSS. MARGINAL OR NON-RECOV. ORE.

→ MILL HEAD VALUE OF $34.70 PER SHORT DRY-TON.

W. M. Sharp