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WILSON & CO. (CANADA), LTD.

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VANCOUVER

BRITISH COLUMBIA

# NORTH COAST MINE

## CONCEPTUAL OPEN PIT & ECONOMIC EVALUATION

PROJECT 1217-100

JANUARY 1983



WRIGHT ENGINEERS LIMITED

Vancouver

Canada

SECTION 4MININGDESIGN OF OPEN PIT

Geological cross sections and plans of each underground mining level were produced by Tatsuya Takeda, P.Eng (Mitsui Consulting Geologist) from the records made available to him from the previous mine operations. Mineralized areas were outlined as low and medium grade on each mine level and the potential tonnage calculated. (See Table 1). The mine level spacing varies from 85 feet to 211 feet. WEL has not had access to the mine records, but accept the plans and sections by Mr. Takeda as geologically inferred mineralized areas. The reserves as calculated from widely space level plans cannot be classified as proven or probable ore without access to all the mine records. The term used by Mr. Takeda as a "Summary of Ore Potential" is more descriptive and the tonnage calculations has been based on the average of the areas outlined on each level multiplied by the distance between levels. (See Table 3).

The pit was designed manually based on the level plans and cross sections of the mineralized zones. The -130 level of the underground workings was first selected as a pit bottom. A pit wall slope of 45 degrees was assumed but no attempt was made to include haul roads or safety berms. This overall slope may be optimistic, however the walls of the glory holes are almost vertical and have stood for half a century. A pit slope study will be required for detailed pit design.

The first trial pit entailed excessive stripping of the high wall to the northeast that gave a strip ratio of 7 tons of waste to 1 ton of ore. The bottom in the north section was raised so that the pit limit would be at the 1,200 foot contour and the strip ratio dropped to approximately 3:1 without the loss of excessive potential ore.

## MINEABLE RESERVES

The geological reserves as calculated by MCL (Table 1) to the -110 level, is given as 33.2 million tonnes of medium grade or 77.5 million tonnes of medium and low grade.

The mineable reserves within the pit limits were calculated by measuring the mineralized areas on each level within pit limits and multiplying the average areas by the distance between levels. No attempt was made to segregate medium and low grade areas. With more definitive data, the Hoskold's Formula could be used to determine tonnes and average grade of individual blocks. The average area times height is well within the accuracy of the input data and the conceptual design of the pit.

The calculated mineable reserves of medium and low grade is shown in Table 3 and Table 4 as 46.8 million tonnes. Total waste is calculated at 139.3 million tonnes for a strip ratio of approximately 3:1. The ratio of medium grade to low grade would be the same as calculated by MCL for the geological reserves or approximately 20 million tonnes of mineable medium grade.

The detailed design of a pit will require additional drilling and access to all the mine engineering records. It may be possible with detailed planning and production schedules to selectively mine to a higher grade in the early years with the low grade stockpiled for later processing. For the purpose of this preliminary evaluation, the average strip ratio and grades given in the terms of reference have been used.

Pit waste can be disposed of outside the pit limits to the northwest and to the east. Design of waste piles have not been included in the conceptual pit design.

**TABLE I**  
**SUMMARY OF ORE POTENTIAL**  
**HIDDEN CREEK MINES LTD.**

Elevation	Level	Total Volume of High, Med. & Low Grade Category Ore	Original Volume of High, Med. & Low Grade Category Ore Before Mining	Balance for Low Grade Category Ore	Specific Gravity	Tonnage Potential Metric Tonnes (Low Grade)	Original Tonnage of High & Med. Grade Ore (Estimated)	Total Output of High Grade Ore	Balance for Med. Grade Ore (Estimated)	Total Ore Potential (Med. & Low Grade Combined)
		(m <sup>3</sup> )	(m <sup>3</sup> )	(m <sup>3</sup> )	(est)	(MT)	(MT)	(MT)	(MT)	(MT)
Above 715' ASL	Above 700	1,243,698	736,339	507,359	3.0	1,522,100	2,597,900	N/A		
715' ASL	700	2,480,184	1,598,496	881,687	3.0	2,645,100	5,620,500	N/A		
630' ASL	630	3,017,074	1,597,855	1,419,219	3.0	4,257,700	5,611,900	N/A		
536' ASL	530	5,016,801	2,931,001	2,085,800	3.0	6,257,400	10,275,000	N/A		
391' ASL	150	6,998,042	3,580,539	3,417,503	3.0	10,252,500	12,601,400	N/A		
180' ASL	180	4,928,812	2,374,785	2,554,027	3.0	7,662,100	8,362,600	N/A		
25' ASL	0	4,583,182	1,893,933	2,689,248	3.0	8,067,700	6,628,800	N/A		
-119' EL.	- 130	2,154,808	924,976	1,229,832	3.0	3,689,500	3,237,400	N/A		
(Approx.) -214' EL.	- 220									
<b>Total</b>		30,422,601	15,637,924	14,784,675	3.0	44,354,100 *	54,935,500	21,781,725 **	33,153,000	77,507,100
						Est. Grade 0.4% Cu Equivalent at 0.2% Cu Cut-off	(Spec. Gr. 3.5 est.)	(2.5% of Cu)	Est. Grade 0.75% Cu Equivalent	Est. Grade 0.55%

\* Excluding ore potential in Gamma Zone which has not been studied.

\*\* Includes some shipment of high grade ore from No. 1 ore body between -220 L and -535'L.