PRINCETON MINING CORPORATION

1990 ANNUAL REPORT



REPORT ON COPPER



MARKETING COPPER Similco Mines Ltd. is a producer of copper concentrate with gold and silver byproducts. Concentrate is trucked from Similco to Vancouver and shipped to Japan for smelting and refining. Since production began in 1972, Similco's total annual output has been purchased by Mitsubishi Materials Corporation of Japan (formerly Mitsubishi Metal Corporation). This long term relationship with Mitsubishi is mutually beneficial and much valued by the two companies. Today, Similco's annual production represents approximately 10% of Mitsubishi's copper concentrate requirements.

OGSHSE LTL, UIS, UUI

1990 was another good year for copper prices with an average price of U.S. \$1.21 per pound compared with U.S. \$1.29 per pound in 1989. As the year progressed, however, high interest rates in many parts of the world, coupled with rising oil prices in the second half of the year, resulted in shaken consumer confidence, reduced copper demand, and lower prices. World economic uncertainty became more pronounced with the Middle East developments in August.

Refined production increased only marginally in 1990 with an overall increase in capacity offset by a series of operational difficulties and production disruptions.

With world economic prospects clouded

by Middle East turmoil, the forecast is for a gradual slowing of economic activity and with increased production, we expect copper prices to remain under pressure in 1991. However this could be offset by continued supply disruptions, and more importantly, the end of the war could signal a significant economic upturn.

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in 1 1d GOLD & SILVER Gold and silver
represent a relatively small portion of
revenue. In 1990, gold and silver prices
averaged U.S. \$383 per ounce and U.S.
\$4.83 per ounce respectively compared
with U.S. \$381 and U.S. \$5.51 in 1989.
The gold price performance was



Japanese copper tank-house - Naoshima Smelter

disappointing as supply again increased, while jewelry and fabrication demand slowed. 1990 silver production exceeded commercial demand, while speculative interest was minimal. Little change in the performance of precious metals from year-end is expected for 1991.





Unloading copper concentrate at Mitsubishi smelter

NINE

SIMILCO OPERATION In 1990,

copper production was down slightly from 1989 levels as the accompanying graph indicates. Although profitability at the Similco mine continued, metal prices were under pressure during the year, and high maintenance costs in both the mine and mill areas, particularly during the last quarter of the year, had an adverse impact on the mine's economic performance.

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The initial mine plan for 1990 was based on a 70/30 split of ore from Pit 1 and Pit 3. The plan provided for a mining rate of 80,000 tons per day for the first six

ANNUAL COPPER PRODUCTION MILLION POUNDS



months of the year dropping to 55,000 tons per day for the last half of the year. During the first quarter of 1990 it became apparent that the fine-grained mineralization and increased hardness of Pit 1 ore was having an adverse effect on mill metallurgical efficiencies, mill throughput and economics.

Subsequently, in May, a revised mine plan was implemented based on a 60/40 ore split between Pit 1 and Pit 3. As a result, the mining rate was held at 65,000 tons per day.

Waste removal for 1990 was high, which is reflected in the accompanying strip ratio graph. The mining rate averaged 64,988 tons per day at a waste-to-ore strip ratio of 2.05 to 1. This will not continue through 1991 given the updated mine plan which will reduce waste removal below that of 1990 levels. The 1991 mine plan is based on an open pit mining rate of 45,000 tons per day at a waste-to-ore strip ratio of 1.1 to 1.



Approximately two-thirds of the ore will originate from Pit 1, while the remainder will be obtained from Pit 3 and the Virginia deposit.

The present mine plan involves mining



Gear replacement on primary SAG ma

	MINEF	AL RES	ERVES 0% Copper Cut-off			
ar de marine de sec		Tons Millions	Grade % Cu	Strip Ratio W O		
	SCHEDULED R	ESERVES				
жение 5524	Pit No. 1 Pit No.3 2- Virginia	14.9 21.6 6.9	0.47 0.45 0.36	0.78 0.73 1.12		
	Subtotal OTHER	43.4	0.44	0.81		
	Pit No.2 Pit No.3 Stockpiles	39.0 73.0 12.4	0.33 0.45 0.25	1.78 3.27		
	Subtotal	124.4	0.39	2.48		
	TOTAL	167.8	0.40	2.05		

the Scheduled Reserves detailed in the Mineral Reserves chart above. Definition OPENSE 2442 drilling in 1990 on the <u>Virginia deposit</u> was successful in delineating a mineable reserve which has been incorporated into the present mine plan. The total mineral reserves are 167.8 million tons of which 43.4 million tons will be mined under the present plan. The extent to which the balance of the reserves will be mined will depend on future copper prices, operating costs and taxes.

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The lower copper production for 1990 was a function of lower mill throughput. The head grade averaged 0.50% copper at an average throughput of 20,386 tons per day, down from the 1989 rate of

SIMILCO	1990	1989	1988	
Ore Milled (tons x 1000)	7,441	8,312	7,925	
Waste Mined (tons x 1000)	15,935	15,829	11,855	
Copper Produced (lbs x 1000)	56,418	57,420	59,956	
Gold Produced (ozs.)	13,617	17,277	16,864	
Silver Produced (ozs.)	311,660	432,220	407,863	



Replacement of SAG mill liners

22,677 tons per day. This lower rate reflects the increased hardness of Pit No.1 ore and high maintenance activity in the concentrator where SAG mill availability was 82.4%. The low availability was the result of continued gearing failures and welding repairs on the primary mills. Availability is expected to improve in 1991. Copper recovery averaged 75.6%, similar to that achieved in 1989. This improved during the last quarter following the installation of additional flotation cells designed to enhance the rougher flotation recovery. Recoveries have increased 2 to 3% since installation. Approximately \$6.0 million in new capital was spent on the operation in 1990.



New OK 38 flotation cells

Major mill improvements were made with the purchase and installation of the OK 38 flotation cells, pumps and mill gearing. This figure also includes miscellaneous mine capital and \$2.0 million spent on property exploration.

ELEVEN

EXPLORATION TARGET AREAS COPPER MOUNTAIN-1990



SIMILCO EXPLORATION

Exploration in areas adjacent to the existing Similco operations continued in 1990 with the expenditure of \$2 million. Exploration targets are highlighted in the above plan.

Sixty-five thousand feet of drilling successfully defined a new mineable copper-gold ore reserve in the <u>Virginia</u> area, located 2500 feet east of the primary crusher. The initial phase of the mining plan will involve the extraction of 6.9 million tons of 0.36% copper and 0.005 oz/ton gold with a 1.1 to 1 strip ratio. Virginia ore exhibits a lower grindability index, and improved copper and gold recovery. Gold grades in the concentrate will be 2 to 3 times the current levels produced from Pit 1 and Pit 3 ore. Mineralization outlined in 1990 in the OG 2245E 013 Alabama deposit appears to be connected to the Virginia deposit and will

be the subject of future definition drilling. Expectations are that further mineable ore reserves similar to the Virginia will be delineated.

Surface exploration and induced polarization has delineated numerous high quality copper targets throughout the Copper Mountain camp.

Continuation of the exploration program is expected to generate further mineable reserves for the Company.

PRINCETON REGIONAL

DEVELOPMENT The Princeton area has long been an important source of placer gold, coal and copper, and as a result, the growth of the local economy has been tied to mining fortunes for many years.

The last coal mines were closed in the early 1960's while the original Similco mine site, the Copper Mountain mine closed in 1957. In 1971 Newmont Mining Corporation reactivated mining in the camp. With the Company's purchase of Similco from Newmont in 1988, commitments have been made to extend the mine life into the mid 1990's, supporting the local economy much longer than anticipated back in 1988.



Similco drilling program

PRINCETON EMPLOYMENT BY SECTOR

GOVERNMENT 5.2%

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rogram

The Similco Mine is situated 15 kilometres west of Princeton on the Hope-Princeton Highway, and has been in operation since 1972. The Similco mine employs over 300 people and plays an important economic role as one of the region's largest employers.

Open pit mining - shovel and trucks



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