MUSKETEER MINE (TRAIL VEIN)

Some figures on possible tons available in Trail vein, probable grade of mine run and possible grade of mill run, together with probable cost of operating on a small tonnage basis.

Probable Tonnage available and probable grade.

Known length of favorable section of vein (indicated in two top tunnels)	520 feet
Average depth below surface for bottom tunnel	325 feet.

In the two top tunnels which jointly partly explore a length of 520 feet of vein there are 152 feet of ore bodies of average grade 0.55 oz. at 36" widths.

$$\frac{152}{520} \times 100 = \text{app. } 30\% \text{ ore.}$$

In the lower tunnel 314 feet of drifting give 196 feet of ore body -

$$\frac{196}{314} \times 100 = \text{app. } 60\% \text{ ore of a grade 0.50 at 36" widths.}$$

The arithmetical average of the two results is 45%. For our present purposes it is considered that a figure of 40% ore at a grade of 0.50 oz. across a width of 36" for a length of 520 feet and to a depth of 325 feet is a conservative estimate.

The grade of the material in between the ore sections at 36" widths varies from 0.07 oz. to 0.15 oz. It is considered that an average figure of 0.10 oz. is a conservative figure.

In mining it is assumed that all of the ore will be obtained, but in so doing possibly 50% of the low grade section of the vein will be mined, i.e. 50% of 60% or 30% of the whole will be mined at a grade of 0.10 oz.

Thus, tonnage mined will be made up as follows:

40%	of the whole area mined as ore at		0.50 oz.
30%	" " " " " "	low grade at	0.10 oz.
70%	" " " " " "	at	0.33 oz.

$\frac{70}{100} \times \frac{325 \times 520 \times 3}{12}$ = app. 30,000 tons at 0.33 oz.

= grade & tonnage available for mining.

MILLING GRADE

Mine ..... 36"
Vein nowhere averages more than..... 9"
Balance waste ..... 27"

Assume we sort 50% of the waste or roughly 40% of the whole,

thus as grade of mined is 0.33 oz.

Grade of material for milling is $\frac{10}{6}$ x 0.33 oz. = 0.55 oz.

Tonnage available for milling is $\frac{6}{10}$ x 30,000 = 18,000 tons.

A 25-ton mill treats 25 x 365 = 9100 tons per year.

Thus there is in the Trail Vein above the low level approximately 2 years' ore for a 25-ton mill at a grade of 0.55 oz.

In the operation suggested we would

Mine 40 tons per day at 0.33 oz.
Sort 15 tons per day at 0.00 oz.
Mill 25 tons per day at 0.55 oz.

Recover probably 25 x 0.50 = 12.5 oz. or $437.00 per day.

PROBABLE COST OF OPERATION.

In the following analysis it is assumed that a 25-ton mill is installed and operated three shifts and that no development ore is treated. It is also assumed that a hydro-electric plant, sorting plant and compressing plant is installed. It is also suggested that if the mill is capable

of treating slightly larger tonnages profits would be substantially increased by treatment of development ore.

	Per day cost.
Mining 40 tons per day (stoping labour, bonus, timber, explosives) 40 x $2.60	$104.00
Development (one crew - 7 feet per day at $6.50...	45.50
Development (supplies at $1.00 per foot	7.00
Blacksmith and helper	11.00
3 mechanics at $6.00	18.00
Foreman at $7.00	7.00
Mine and Mill Superintendent	10.00
Accountant	6.00
Assayer	6.00
3 Mill Operators at $5.00	15.00
2 Sorters and crushermen at $5.00	10.00
Mill Supplies	10.00
Repairs, transportation etc.	50.00
	$299.50

Crew			
Mining	10		
Development	4		
Blacksmith shop	2		
Mechanics	3		
Foreman	1		
Superintendent	1		
Accountant	1		
Assayer	1		
Mill	5		
	28	men. @ average $6.00	$168.00
		Supplies	132.00
			$300.00

Recovery,	$437.00
Cost	$300.00
Profit	$137.00 per day.
	$50,000.00 per year

For two years' operation, 100,000.00 - or sum available for plant installation at the present time.