

Mt. Nansen Mines Limited  
PROPOSED BUDGET 1968-69  
Mt. Nansen Operation  
October 17, 1968

Dolmage-Campbell & Assocs. Ltd.

00077 C

**DOLMAGE, CAMPBELL & ASSOCIATES**  
CONSULTING GEOLOGICAL & MINING ENGINEERS  
808 BANK OF CANADA BUILDING  
VANCOUVER 1, B.C.

012907

**MT. NANSEN MINES LTD.**

**PROPOSED BUDGET (October 1, 1968 - July 31, 1969)**

**MT. NANSEN OPERATION**

October 17, 1968

H.O. Howey

Consultant

Vancouver, Canada

**DOLMAGE, CAMPBELL & ASSOCIATES**

**CONSULTING GEOLOGICAL & MINING ENGINEERS**

**808 BANK OF CANADA BUILDING**

**VANCOUVER 1, B.C.**

The budget submitted has been prepared from information submitted by staff members at Mt. Nansen and from calculations made by the writer. It is not valid to use previous cost figures in establishing a budget since an operating mine is or should be much more efficient than an exploration project, and indirect and overhead costs are distributed over a larger number of operations.

The budget is designed so that variances in actual over budgetary costs are readily discernable and the source of the variance can be pin pointed in order that satisfactory explanations can be made or remedial action taken. In order to function properly the person responsible for any cost centre should have a hand in setting the original cost figures and an attempt was made to attain this while the writer was on the property. All concerned did not have sufficient time to go into all matters completely and it is suggested that the budget and supporting calculations be submitted to them to allow them to either disagree or accept the costs that they are expected to attain. It is very possible that some costs have been overlooked and if so they should be included in the budget.

Cost centres should be established to place the responsibility for costs on definite individuals and the following is suggested:

General Manager Administration  
Mine Manager - Mine General, Overhead  
Mine Supt. - All Underground Operations  
Geologist - Surface D.D. & Trenching  
Mill Supt. - Milling, Met. Testing

Each month actual costs are reviewed in relation to budgetary costs and unless satisfactory explanations are given the necessary action is taken to correct any variances.

Direct costs have been used for all unit costs in the budget since it is much easier to pin down the causes of variances.

Mine General, Overhead and Administration are carried separately and should be examined for variances as separate cost centres.

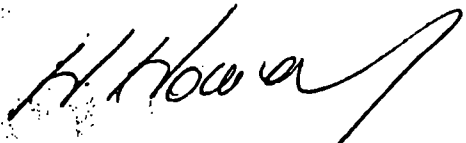
The practice of adding indirect and overhead costs on a per dollar basis is merely an exercise in arithmetic and tends to obscure the source of costs. The writer feels that this could be discontinued in the cost statements.

Wherever possible costs that can be definitely charged to any particular operation have been taken out of Mine General and Overhead and charged directly into the operation since this is where the control should be exercised.

The budget has only been carried up to the point where the concentrates are in the filter hopper. Freight, marketing and other items are not under the control of the Mine Staff and will be dealt with separately in a subsequent report. There are also several construction projects in progress which will be shown when these figures are obtained.

A cash flow will be submitted as a separate item since this information should be kept separate from the control budget.

I would be pleased to discuss the budget with all concerned if any clarification is required.



H. Howey, P. Eng.

MOUNT NANSEN MINES LTD.

COST BUDGET FROM OCTOBER 1, 1968 TO JULY 31, 1969.

*REVISED Oct*

	Nov.-200tpd		Dec. 250 tpd		Jan. 250 tpd		Feb. 250 tpd		March 250 tpd		April		May		June		July 250 tpd		
	Unit Cost	Units	Amount	Units	Amount	Units	Amount	Units	Amount	Units	Amount	Units	Amount	Units	Amount	Units	Amount	Units	Amount
UNDERGROUND D.D.	8.10/ft	1100	8910	1100	8910	1100	8910	1100	8910	1100	8910	1100	8910	1100	8910	1100	8910	1200	9720
DRIFTS & CROSSCUTS	36.00/ft 46.00 tbr. 46.00 ft.	325	11700	650	23400	650	23400	650	23400	650	23,400	650	23,400	650	23400	650	23400	615	22140
RAISING														180	8280	180	8280		
STOPE PREPARATION	9.00/tn.	330	2970	520	4680	520	4680	520	4680	520	4680	520	4680	520	4680	520	4680	520	4680
STOPING	4.00/tn.	4180	16720	4750	19000	4750	19000	4750	19000	4750	19000	4750	19000	4480	18860	4480	18860	4805	19220
LOADING & HAULING	1.20/tn.	4510	5412	5270	6324	5270	6324	5270	6324	5270	6324	5270	6324	5270	6324	5270	6324	5325	6390
SURFACE D.D.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRENCHING	30.00 hr.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7500		7500
MILLING	200tpd 4.42 250tpd 4.12	5000	22100	6250	25750	6250	25750	6250	25750	6250	25750	6250	25750	6250	25750	6250	25750	6250	25750
METALLURGICAL TESTING			1000		1000		1000		1000		1000		1000		1000		1000		1000
MINE GENERAL			16010		16010		16010		16010		16010		16010		16010		16010		16010
OVERHEAD			44810		44810		44810		44810		44810		44810		44810		44810		44810
ADMINISTRATION			16000		16000		16000		16000		16000		16000		16000		16000		16000
TOTALS			145632		165884		165884		165884		165884		165884		174024		181524		173220
COST PER TON			\$29.13		\$26.54		\$26.54		\$26.54		\$26.54		\$26.54		\$27.84		\$29.04		\$27.72

MOUNT NANSEN MINES LTD.

COST BUDGET FROM NOVEMBER, 1968 TO JULY 31, 1969.

	Unit Cost	Nov. 200tpd		Dec. 250tpd		Jan. 250tpd		Feb. 250tpd		March 250tpd		April 250tpd		May	June	July			
		Units	Amount	Units	Amount	Units	Amount	Units	Amount	Units	Amount	Units	Amount	Units	Amount	Units	Amount	Units	Amount
UNDERGROUND D.D.	8.10/ft.	1100	8910	1100	8910	1100	8910	1100	8910	1100	8910	1100	8910	1100	8910	1100	8910	1200	9720
DRIFTS & CROSSCUTS	36.00/ft. 46.00 tbr.	625	22500	950	34200	1250	45000	1250	45000	1250	45000	1250	45000	1250	45000	1100	39600	615	22140
RAISING	46.00 ft.													180	8280	180	8280		
STOPE PREPARATION	9.00/tn.	330	2970	520	4680	520	4680	520	4680	520	4680	520	4680	520	4680	520	4680	520	4680
STOPING	4.00/tn.	4180	16720	4750	19000	4750	19000	4750	19000	4750	19000	4750	19000	4480	18860	4480	18860	4805	19220
LOADING & HAULING	1.20/tn.	4510	5412	5270	6324	5270	6324	5270	6324	5270	6324	5270	6324	5270	6324	5270	6324	5325	6390
SURFACE D.D.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRENCHING	30.00 hr.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7500	-	7500
MILLING	200tpd 4.42 250tpd 4.12	5000	22100	6250	25750	6250	25750	6250	25750	6250	25750	6250	25750	6250	25750	6250	25750	6250	25750
METALLURGICAL TESTING			1000		1000		1000		1000		1000		1000		1000		1000		1000
GENERAL			16010		16010		16010		16010		16010		16010		16010		16010		16010
OVERHEAD			44810		44810		44810		44810		44810		44810		44810		44810		44810
ADMINISTRATION			16000		16000		16000		16000		16000		16000		16000		16000		16000
TOTALS			156432		176684		187484		187484		187484		187484		195624		197724		173220
COST PER TON			\$33.64		\$28.27		\$30.00		\$30.00		\$30.00		\$30.00		\$31.30		\$31.63		\$27.72

A P P E N D I X

DETAILED OPERATING COSTS

DRIFTING CROSSCUTTINGS & DIAMOND DRILLING FOOTAGES PROPOSED

October 1, 1968 to July 31, 1969

DIAMOND DRILLING

1.	400' holes North and South at 400' intervals on connection between the Weber and Heustis on the 4100 ft. level.	October to July	3000'
2.	200' intersections estimated length 250'	October to July	1500'
3.	400' intersections estimated length 500'	October to July	1000'

LOCAL EXPLORATION

Weber 4100' level	1500'
Heustis 4300' level	1500'
Heustis 4100' level	1500'
Total	10,000'
To be drilled <u>1000'</u> per month	

DRIFTING & CROSSCUTTING

1.	To join Weber & Heustis on the 4100' level		
	Drifting	3700' (line drive)	
	Crosscutting	1200' (line drive)	
	Add 10%	490' (for following vein)	
		<u>5390'</u>	5390'
2.	Heustis 4300 level		
	a) Crosscuts & 13 vein		1300'
	b) Drifting 12 vein		1200'
3.	Heustis 4100 level		
	a) Crosscuts 300		
	b) Drifting 1350		1650'
			<u>9540'</u>

RAISING

Weber 4100 to 4260 level	
2 Raises @ 180'	360'

MONTHLY DISTRIBUTION OF DIAMOND DRILLING & DRIFTING, CROSSCUTTING AND RAISING

FOOTAGES AS APPLIED IN BUDGETARY FIGURES

	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	TOTALS
DIAMOND DRILLING	1100	1100	1100	1100	1100	1100	1100	1100	1200	10,000
DRIFTING & CROSSCUTTING										
Heustis to Weber 4100	325	650	650	650	650	650	650	650	515	5,390
Heustis 4300 #13 vein	300	300	300	300	100					1,300
Heustis 4300 #12 vein					200	300	300	300	100	1,200
Heustis 4100 level			300	300	300	300	300	150		1,650
	625	950	1250	1250	1250	1250	1250	1100	615	9,540 total
RAISING										
Weber 4100 to 4260							180	180		360

DETERMINATION OF TONNAGES OF MILL FEED REQUIRED FROM  
DEVELOPMENT, STOPE PREPARATION AND STOPING

DEVELOPMENT

A conservative figure of 10 tons of proven and probable ore per ft of development has been used in determining the work to be done to develop 72,000 tons of ore between October 1, 1968 and July 31, 1969. This takes into account the crosscuts which are not expected to be in ore.

Experience has shown that the grade of the muck from the drifts is approximately  $\frac{1}{2}$  that of the vein material.

Assuming one third of development as ore grade and allowing 4.5 tons per lineal ft.: 325 ft. produce 490 tons, 650 ft. - 980 tons, 615 ft. - 925 tons, 180 ft. - 270 tons.

In calculating returns it must be taken into account that the development tonnage grade is approximately one half the vein grade.

STOPE PREPARATION

Stopes should be prepared to permit productions of from 5000 tons per month in November to 6250 tons per month in the remaining months.

Assuming 3' vein widths and an average dip height of 180 tons per lineal ft = 45.

To develop 5000 tons would require 111 lineal ft of preparation.  
To develop 6250 tons would require 140 lineal ft. of preparation.

This would produce 333 and 520 tons of stope preparation ore per month.

STOPPING REQUIREMENTS

	Nov.	Dec. to April	May to June	July
Development	490	980	1250	925
Preparation	330	520	520	520
Stoping	4180	4750	4480	4805
Total	5000	6250	6250	6250

## DRIFTS AND CROSSCUTS

### Bare:

Labour (drill, blast, load & Tram)	\$18.50
Explosives	5.00
Steel & bits	1.65
Drill Maintenance	2.20
Mock Machine Maintenance	0.42
Air & water lines - original installation	1.50
Rail & tires " "	2.00
Power & compressed air	3.80
Rock bolts	0.48
Cleanup	<u>0.10</u>
	<u>\$35.65</u> say \$36.00

For timbered drifts add \$10.20 per ft. - say total \$46.00.

### Derivation of Costs:

Labour - Average contract price Weber & Heostis and allowing for 50% increases every 500' taken as \$18.50. Statistics compiled by the on site engineer extended to current wage rates gave an average Labour cost of \$18.70/ft including bonuses. Some revisions are to be made to the Weber contract price \$18.50 was used.

Power - Based on site figures explosives \$3.50 per ft. for 6' Fuse and Caps. 300' of fuse at 0.216 = \$6.48  
30 caps \$1.80 \$1.50.

Steel

&

Bits - Used 0.05 per ft. drilled.

UNDERGROUND DIAMOND DRILLING

Most holes to be drilled are under 500' in length with very few exceptions. However, to allow for these Contract price taken at \$6.60.

Contract Price	\$6.60
Board & Lodging	0.30
Casing Cementing Co.	
Time	1.00
Transportation	<u>0.20</u>
	<u>\$8.10</u> per ft. drilled

Contract Conditions

	AQU	BQU
Price per foot 0-500	\$5.50 1 ft.	\$6.50
500-1000	6.40	7.40

+ 20<sup>0</sup> and over 15% additional charge.

Perma frost - freeze up Company at cost plus.

Cost plus meaning: Labour \$4.50/man hour Crew 2 men to machine

    Mach. 3.00/mach. hour

    Supplies Cost plus frt. to drilling site + 15%.

Casing, ream & install	\$12.00/crew hr.	Moving Contractor 4 hrs.
Assist surveying	12.00/crew hr.	Mine portal to Mine Portal Co.
Wedging	12.00/crew hr.	Company supply transport
Engineers decision delay	12.00/crew hr.	Sludge samples Co. Expense
Cementing	12.00/crew hr.	Lodging Contractor pay \$2.50/man d

2.15

Costs based on productivity of 30' per crew day or 15 per man day.

Board Costs	\$6.00 - <sup>2.75</sup> 2.80 = <sup>3.30</sup> \$4.50 per man day
Board Costs per ft.	<u>\$4.50</u> = 0.30¢ 1 ft.
	15
	.22

R A I S I N G

5.5 x 10

Labour	\$21.00
Explosives	5.00
Steel and Bits	1.65
Power and Compressed Air	3.80
Air and Water Lines	1.50
Timber (Material)	6.00
Chutes	3.05
Drill Maintenance	2.20
Load and Tram	1.25
Rock Bolts	.48
	<u>\$45.93</u> say <u>\$46.00</u>

Contract price includes timbering \$18.00/ft  
Average wage over 10 month period \$3.39 x 8 27.12/day

Experience figure for 263'

Company time	64.5		
Contract	<u>146.9</u>		
	211.4	$\times$	\$27.12 = $\frac{5700}{263}$ = \$21.70/ft

STOPE PREPARATION

	<u>400 Tons</u> <u>Cost/Ton Mined</u>	4500 <u>Cost/Ton Developed</u> <u>in 100' block</u>
Labour (Mining)	\$1.49	
Explosives	0.60	
Steel and Bits	0.25	(includes 400
Drill Maintenance	0.35	tons broken in
Muck Machine Maintenance	0.10	preparation)
Air and Water Line	0.04	Block developed
Rail	-	3' wide x 180 ft.
Power Compressed Air	0.57	up dip x 100'
Labour (Timbering)	3.21	long.
Timber (Material)	0.93	
Load and Tram	<u>1.20</u>	
	<u>\$ 8.74 say \$9.00</u>	<u>\$0.72</u>

Derivations:

Stope preparation includes taking down 2-6' lifts at back. Installing sill timber sets with chutes at 25 ft. centres.

Contract conditions:

Break	\$0.40 cents per ton - over wages
Load and Tram	0.40 " " " " "
Sill Timber Shift Set	(\$11.00/set-8) (\$15.00 8 to 10) (\$18.00 - 10+)
Chute	\$50.00

Based on 100' length of Stope:

The sill blasting would probably break to a minimum of 4', over a length of 100' 2-6' lifts would produce  $4 \times \frac{100}{12} \times 12 = 400$  tons

12

	<u>Cost/Ton</u>
Assume man can drill and blast 25 tons per shift	
This requires approximately 150' of drilling.	
Total for 100' length = 1500' of drilling.	
Total labour 16 man shifts 16x27.12 = \$433.92	\$1.09
Bonus payment 400x.40 = 160.00	0.40
Explosives - Powder 0.35 Fuse and caps	
0.25 = .60x400 = 240.00	0.60
Steel and Bits 5' per ton 0.05x5	0.25
Drill Maintenance 5x0.07/per ft. = 0.35	
per ton.	0.35
Power Compressed Air	0.57

## STOPE PREPARATION (CONT'D)

### Timbering:-

#### Labour

Experience in H-43-12-594 stope gave a productivity at 3.34 ft. per contract shift and 2.69' per shift when company time is added in. For estimating labour costs 3' per man shift is used.

Wages = \$27.12 per shift.

To do 25' at 3' per man shift	=	8.33x27.12	=	\$226.00	
Bonus (there are 3 sets @ \$15.00 (ave.))	=		=	45.00	(slide rule)
( 1 chute		50.00		<u>50.00</u>	
				\$321.00	

In 25' there would be 100 tons.  
Timbering cost per ton \$3.21.

#### Material

In 25' of sill timbering there is the following timber required:

<u>Chute</u>	<u>Cost</u>
2 - 9' stulls	\$1.25
4 - 5' "	1.30
1 - 5' cap	0.33
2 - 11' stulls	1.51
268 lin. ft. of 3"x6" = (402 bd.ft.)	54.00
Hardware est.	10.00

#### Sill

2 - 8' stulls		1.10		
1'5 lagging (6 to 8") over 25'		<u>15.00</u>		
		\$84.49		
Add 10% for wastage		<u>8.45</u>		
		\$92.94		
Cost per lineal ft. =		3.72		
Cost per ton =		0.93		

#### Load and Tram

Productivity 30 tons/ms	Days wage	24.00	=	0.80 per ton	
	Bonus			<u>0.40</u>	
				\$1.20	" "

# STOPPING

Labour	\$1.49	
Explosives	0.60	
Steel and Bits	0.20	
Drill Maintenance	0.28	
Air and Water Lines	0.06	
Power and Compressed Air	0.57	
Timbering	0.56	
Timber Material	0.24	
Muck and Tram	<u>-</u>	separate classification
	\$4.00	

Assume production of 25 tons per man shift stopes probably down to 3' in width so would require 4' of hole per ton.

Labour	$\frac{27.12}{25} =$	\$1.09
Bonus		<u>.40</u>
		\$1.49

Steel and Bits - 0.05 per ft. drilled  
Approximately 4' drilled per ton = 0.20

Drilling Maintenance 0.07 per ft. drilled = 0.28  
Air and Water Lines - take over 100' stopping block.  
Should be 2 manways one at each end both with air and water.  
At 3' wide and 100' long = 50 tons. per ft. of freight - cost of pipe and couplings \$1.50 per ft. total. For 2 manways \$3.00 per foot  $\frac{300}{50} = 0.06/\text{ft}$

Timbering - Manways - Assume 1 6' set per man shift.  
slides, ladders, stulls and lagging, total cost wages and bonus (\$15.00) \$42.12 or 7.02 per ft of manway.

For 2 manways 14.04 per ft.  
Over 100' stope 3' wide = 25 tons per ft.  
Labour and bonus charge =  $\frac{14.04}{25}$  \$0.56/ton

Timber 2'- 5' stulls = 1.10 2 manways = 6.00/ft  
Tight lagged (36) 6" lagging  
6' long 5.40  $\frac{600}{25} = 24$  cents/ton  
Slide (4) 3"x8" 6' 48 bd.ft. 6.34  
Ladder 5.00  
\$17.84

Say \$3.00/ft.

LOADING & TRAMMING - HEUSTIS

STOPE CHUTES & TRANSFER RAISES

Labour	\$0.65
Locomotive Maintenance	0.17
Car Maintenance	0.03
Track Maintenance	0.25
Dumping	<u>0.10</u>
	\$1.20 per ton

Productivity with larger cars, diesel loci and steady tramming crew estimated at 60 tons per man shift.

		<u>Per Ton</u>
Wages per shift	\$24.00	\$0.40
Bonus per ton		0.25

Locomotive Maintenance	-	Experience about \$1,000 per month at 6,000 t.p.m. - $\frac{1000}{6000} = 0.167$	
Car Maintenance	-	\$150.00 per month $\frac{15000}{6000} = 2.5$ cents say 3	
Track Maintenance	-	Labour 2 men at 8 x \$2.85 = \$22.80 = \$45.60 per day Material estimated <u>4.40</u>	\$50.00 per day
		at 200 tons per day = $\frac{50.00}{200} = 25$ cents per ton.	

## TRENCHING

Lump sum per month.

Probably June and July to end of fiscal year.

One D-8 working 1 ten hour shift per day 6 day week

Say 50 days @ \$300 per day = \$15,000.00.

\$7,500 per month.

MILLING

<u>DIRECT COSTS:</u>	<u>200 tpd</u>	<u>225 tpd</u>	<u>250tpd</u>	<u>290tpd</u>
Labour	1.500	1.330	1.200	1.030
Ball consumption	0.035	0.035	0.035	0.035
Steel Ball Mill Liners	0.083	0.083	0.083	0.083
Skeega Liners	0.030	0.030	0.030	0.030
Crusher jaws	0.018	0.018	0.018	0.018
Cone crusher mantles bowls	0.012	0.012	0.012	0.012
Reagents	1.132	1.132	1.132	1.132
Misc. ( impellers, glands, conveyors, motors)	0.050	0.050	0.050	0.050
Power	<u>1.560</u>	<u>1.560</u>	<u>1.560</u>	<u>1.560</u>
	6 day operation \$ 4.420	4.25	4.120*	3.95*
	7 day operation \$ 4.70	4.51	4.35*	4.15

Add two men for 7 day operation

DERIVATION OF COSTS:

<u>Labour</u>	Rate	Per Man	Total
2 Crushermen	3.43 x 8 =	27.44	= 54.88
3 Ball Mill	3.43 x 8 =	27.44	= 82.32 + 1 +
3 Flotation Men	3.78 x 8 =	30.24	= 90.72 + 1 +
2 Helpers	3.03 x 8 =	24.24	= 48.48
1 Labourer	2.93 x 8 =	23.44	= <u>23.44</u>
			\$299.84 · \$357.

Unit labour costs @ 200 tons	1.50	225 tons	1.33
6 day operation @ 250 tons	1.33	290 tons	1.03
@ 300 tons	1.19		

Ball Consumption	0.030 #/Ton	0.115 lb	0.035
Crusher Jaws	50,000 tons	\$885.00	0.018
Cone Mantle, Bowl	80,000 tons	\$950.00	0.012
Skeega Liners	300,000 tons	\$8,860/set	0.030
Ni-hard Liners	90,000 tons	\$7,440/set	<u>0.083</u>
CuSo4	1.3#/ton	\$.276/lb	<u>0.359</u>
Na <sub>2</sub> S	1.0#/ton	.166/lb	0.166
Z6	.7#/ton	.326/lb	0.228
Dow	.1#/ton	.379/lb	<u>0.370</u>
			1.132

MINE GENERAL

Supervision	\$5,000	
Surveying & Engineering	3,200	
Geology & Sampling	3,000	
Extra timbering & rock support	200	
Mucking Machines -		distributed
Locomotives		"
Car repairs		"
Track repairs		"
Diamond Drill Repairs		none contracted
Drill Repairs		distributed
Pumps	100	
Steel and bits		distributed
Air and Water Lines - surface	200	
Small tools	200	
Safety	10	
Ventilation	300	
Mine Phones - Signals	50	
Ditching	100	
Manway Repair & Maintenance	40	
Nipping	30	
Transportation - Supplies	1,500	
Mine General	800	
Rock Bolts		distributed
Lamps	200	
Power Saws	80	
Ore pass or Grizzly	50	
Sumps	250	
Skid Timber	200	
Carpenter - Framing Shop	500	
	<u>\$16,010</u>	

GENERAL CLEARING - OVERHEAD

Estimated Monthly Costs:

General Clearing

Assaying	\$ 2,500.00
Machine Shop	2,000.00
Surface Supervision	1,000.00
Water Supply - includes power	4,000.00
Heating	1,000.00
Building Repairs and Maintenance	300.00
Surface General	650.00
Roads and Yards	3,000.00
Camp Operation - Bunk house	2,000.00
Freight	500.00
Warehouse Expense	1,000.00
Fire Protection	50.00
Watchman	-
Cook House Operation	11,000.00
Air Fares	3,750.00
Equipment Rental	500.00
Transportation Men	1,000.00
Electrical Shop	2,000.00
Commissary	50.00
Camp - Cook house power	1,950.00

Equipment Operating

6,500.00

Compressor Operating  
Light Plants Operating  
Welders Operating

distributed  
distributed

60.00

\$44,810.00

ADMINISTRATION & GENERAL

Average over last year around 15,000 per month.

Probably add Mine Superintendent to operation so use figure

of

\$16,000 per month.

---

POWER COSTS & DISTRIBUTION

<u>MAIN PLANT</u>	540,000 KWH/Mo.	270,000 KWH/Mo.
Cost per month	Full bore	½ time
Operations 3 @ 32.10x30	\$ 2,880	\$2,880
Fuel @ 20 gph each - 60x720x0.32	13,824	6,912
Lubricants	50	25
Maintenance	<u>900</u>	<u>450</u>
	\$17,654	\$10,267
Cost per kwh	\$ 0.033	\$ .038
<u>Operation somewhere in between use</u>	<u>\$ 0.036</u>	

Approximate connected loads are as follows:

	Estimated Usage	Distribution of Power Costs
Camp	200 kw	10%
Water Lines	160 kw	11%
Mill	750 kw	51%
Mine	550 kw	28%

Estimated Loads per Month

Camp	54,000 kwh	@ 0.036 n	1944
Water Line	71,000 kwh		2556
Mill	270,000		9720
Mine	<u>145,000</u>		<u>5220</u>
	540,000		<u>19640</u>

The Weber camp is supplied by a 65 kw Generator.

Monthly cost	
Fuel and Lube	\$320
Maintenance	<u>150</u>
Charge to mine	\$470 per.mo.
Total Mine Charge	\$5,690/mo.

( Combined with Compressors )

COMPRESSED AIR

Three electrically driven compressors in power plant with a total capacity of 2,500 cfm driven by motors with a total rated horsepower of 475.

The power to operate these compressors is charged to the mining operations in combination with the compressor charges:

Compressor Charges

Labour - combined with power  
Maintenance - \$400 per month.

A Copco - 600 is in operation at the Weber and will probably be for the next 10 months. Operation of this compressor is estimated at \$1,000/mo.

TOTAL POWER & COMPRESSOR CHARGES PER MONTH

Power	\$ 5,690.00
Compressors	<u>1,400.00</u>
	<u>\$ 7,090.00</u>

Based on 10,000 ft. of drifting and raising and 72,000 tons stoping charges made on a foot drilled basis:

33' per ft. of drift advance  
5' per ton of ore in stopes

33x10,000	=	330,000	=	\$3,800	\$38,000 for 10 mos,
5x72,000	=	<u>360,000</u>	=	4,120	41,200 " " "
		690,000			

Cost per ft. of drift = \$3.80  
Cost per ton = 0.57

DRILL MAINTENANCE

Based on experience - during this year 5681 ft. of drifts,  
cross-cuts and raises driven.

Drill repair costs for the period were \$12,550.91.

Cost per ft. of development =  $\frac{\$12,550.91}{5681}$  = \$2.21. per ft.

At 33 holes per round =  $\frac{\$2.21}{33}$  = \$0.67. per ft. drilled

use \$0.07. per ft. drilled

---

---

MUCKING MACHINE MAINTENANCE

Year's costs \$2,341.76

Year's footage 5,681.00

Cost per ft. of development = \$0.42

Foot of dev.  $\frac{56}{12}$  = 4.65 tons

Cost per ton = \$0.09

use \$0.10

---

---

COOKHOUSE OPERATION

\$6.05 paid to caterers per man day.

\$2.75 paid to company by hourly rated employees.

Estimated Personnel Required to operate at 200 to 250 tons per day.

	<u>Hourly Rated</u>		<u>Staff</u>	
<u>Mechanical:</u>	Underground	1	Foreman	1
	Mill	1		
	Welder	1		
	Mobile Equip.	2		
	Electrical	2		
<u>Eng. Geology Assay:</u>	Samplers	2	Assayers	2
			Eng.	3
			Geol.	1
<u>Mill:</u>	Mill crew	13	Superintendent	1
			Foreman	1
<u>Mine:</u>	Development	12	Mine Supt.	1
	Stoping	16	Foreman	1
	Transport	6	Shift bosses	2
	Timber	4		
	Nippers	2		
	Track	2		
	One truck drive	1	Accountant	1
	Water truck drive	1	Timekeeper	1
	Surface flat deck	1	Office help	1
	Station Wagon	1	Warehouseman	1
	Cat	1		
	Grader	1		
	Labourers	2		
	Carpenter	1		
		—	Manager	<u>1</u>
		73		18
			Visitors	<u>2</u>
			20	

73 @ (6.05-2.75) = \$3.30 = \$240.90/day  
 20 @ \$6.05 = 121.00  
 \$361.90/day

30 x 361.90 = \$10,857.00/mo.

Use \$11,000/mo.