

Mount Nansen Mines Limited  
Brown-McDade Mines Limited

ORE RESERVES (December 31, 1968)

by

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## INTRODUCTION

Dr. D.D. Campbell, Consulting Geologist for Mount Nansen Mines Limited, calculated ore reserves for Mount Nansen and associated properties in various reports issued during the year 1968. Tonnages and grades as shown in these reports were conflicting and inconsistent as no defined mining widths were established or assumed. In Dr. Campbell's reports assumed mining widths varied from two to four feet, however stopes in the mine have averaged 4.3' in width. While a reasonable figure of four feet was used in working out the Huestis reserves, the Webber reserves were calculated on far narrower widths, which was explained as follows: "It is felt that by the time the narrow shoots in the mine are to be extracted the mining procedures will be refined to the point that widths of less than four feet will be readily mined" (Report dated December 10, 1968, Page 2). The report does not outline or recommend mining procedures which might cut mining widths to less than four feet but it is a foregone conclusion that any such technique would result in increased mining costs as the wall rock adjacent to the veins is badly fractured and must be supported if minimal stope widths are to be obtained. Dilution due to overbreak explains the low grade ore presently being extracted from the producing stopes.

In view of past performance and experience, it would follow that a average stope width of four feet should be assumed when calculating ore reserves.

The figures given in this report were based on assays of samples taken from drifts, stopes, raises and diamond drill holes. Dr. Campbell's definitions relating to type of ore reserve were used, as outlined below:

Proven ore - Ore within 30 feet of completely exposed and sampled ore; whether drift, raise or on surface.

Probable ore - Ore within 30 feet of proven ore. Ore drilled off by test holes and partially exposed by drift or crosscuts (For 30 feet from the level). Ore within a 30 ft. radius of a diamond drill hole intersection.

In the case of the Webber zones, wherever the surface ore shoots match the underground shoots in position, grade, etc., as most of them do, the entire intervening section between the proven ore boundaries is categorized as probable ore. In most places this has been verified at least in part by overburden drill holes and, in the case of the main ore shoot, by a raise through to the surface.

Possible ore - Extensions of probable ore in well established ore shoots 60-100 feet to the proposed 4100 Level or to the surface.

Potential ore tonnages, or in other words ore which may reasonably be expected to be found in the future, are not included in this report as they are speculative in nature. These estimates will be included in a later report.

For ore reserve calculations high erratic assays were cut to 1 oz.Au/ton and 100 oz.Ag/ton. A specific gravity of eleven cubic feet per ton is used as the tonnage factor. Gross ore values were calculated using \$37.50 (Can) Gold and \$2.00 (Can) Silver prices. These prices were used to ensure realistic gross values and to conform with earlier reports.

#### ILLUSTRATIONS

Attached to this report please find seven drawing showing plans and cross sections of the vein systems with estimated tonnages and grades.

- Fig 1 Plan: 4260 Level, Webber Mine
- Fig 2A Plan: 4100 Level, Huestis Mine
- Fig 2B Plan, 4300 Level, Huestis Mine
- Fig 3 Plan, 4100 Level, Brown-McDade Mine
- Fig 4 Section: Webber Vein System
- Fig 5 Section: Huestis Vein System
- Fig 6 Section: Brown-McDade Vein System

#### 1. ORE RESERVE DETAILS

##### A. WEBBER MINE

In the Webber Mine two converging veins have been followed underground and on the surface. These veins strike NW-SE and dip very steeply to the SW. The veins are narrow, rarely ex-

ceeding two feet in width, and generally high grade. Assays of samples from 2 Vein have returned up to 200 oz/silver per ton. As the ore is highly oxidized it is reasonable to assume that these high values are due to secondary enrichment and that the grade will decrease in depth. These high grade veins can be extracted profitably at 100% dilution. Since this ore is oxidized it is believed that cyanidation must be used for maximum recovery of precious metals.

Further exploration and development are required at the Webber Mine as very little work has been done to date. The 4100 Level has not yet reached the lower projections of the veins cut on the 4260 Level, while work on the 4260 is limited and no attempt has been made to trace the veins to the east.

Webber ore reserves are shown in detail in Table 1. Also refer to Illustrations 1 and 4.

Table 1: WEBBER MINE - ORE RESERVES (December 31, 1968)

Ore Shoot No.		Proven Ore (tons)	Probable Ore (tons)	Possible Ore (tons)	Grade		Gross Value can.\$/ton
					Gold (oz/ton)	Silver (oz/ton)	
Vein 1	101	1,259	491	982	0.17	4.83	15.10
	105	436			0.42	54.00	123.75
			491	982	0.27	13.30	36.70
			1,036		0.34	33.70	80.15
	107	764	764	2,418	0.23	11.95	32.50
		5,614			0.44	36.40	89.30
	119	1,036			0.38	8.32	30.90
		2,072	1,036	3,281	0.16	9.00	24.00
			4,144		0.27	8.66	27.40
	120	1,418	3,618	2,245	0.06	4.65	11.50
	121	1,181			0.47	19.70	57.00
		1,091	545	1,727	0.27	29.30	68.70
			2,589		0.37	24.50	72.80
	122	1,745	5,235	2,763	0.13	6.29	17.40
LCS	763	763	1,526	0.38	10.00	34.25	
IAS	1,472	1,472	2,944	0.17	7.40	21.15	
Vein 2	129		1,309	2,727	0.16	6.33	18.60
	130	1,909			0.37	30.50	74.90
			1,745	3,636	0.06	15.00	34.25
			5,200		0.21	22.70	53.30
	131	981	981	1,554	0.13	7.47	19.80
	134	1,090	1,090	1,727	0.14	8.86	23.00
	136	1,036			0.30	4.30	19.85
		2,836	1,418	4,490	0.54	41.50	103.25
			3,800		0.42	27.90	71.50
	S-End	872	872	1,744	0.31	11.20	34.00
	139	436	436		0.18	17.30	41.35
	146	763	1,926	1,209	0.23	5.24	18.75
	153	763	1,100		0.30	13.00	37.25
			1,636		0.08	5.38	13.75
154		1,745	3,636	0.17	12.10	30.57	
		3,490		0.48	16.50	51.00	
157	3,490	3,490	10,763	0.31	13.80	39.20	
TOTAL		33,027	52,422	50,354			

Note: Calculated at 4.0 feet mining width.

Total reserves are summarized as follows:  
(December 31, 1968)

Proven Ore	33,027 Tons @ 0.30 oz./Au/t and 19.3 oz.Ag/t
Probable Ore	52,422 Tons @ 0.25 oz.Au/t and 14.4 oz.Ag/t
<u>Possible Ore</u>	<u>50,354 Tons @ (0.23) oz.Au/t and (13.8) oz.Ag/t</u>
Total	135,803 Tons

The Cabin Creek vein which lies some 400 feet south of the Webber Mine should be included in the Webber ore reserves. This vein was located by surface trenching over a length of some 700 feet. The vein is open at both ends of the trench.

Table 2: ORE RESERVES - CABIN CREEK VEIN  
(December 31, 1968)

Probable Ore	4,358 Tons @ 0.26 oz.Au/t and 50.7 oz.Ag/t
<u>Possible Ore</u>	<u>4,358 Tons @ 0.26 oz.Au/t and 50.7 oz.Ag/t</u>
Total	8,716 Tons

The total ore reserves for the Webber Mine and Cabin Creek vein are shown in Table 3. (The corresponding values from Dr. Campbell's report are shown in parentheses).

Table 3: COMBINED RESERVES OF WEBBER AND CABIN CREEK  
(December 31, 1968)

Proven	33,027(33,700)t @ 0.30(0.42)oz.Au/t and 19.3(32.8)oz.Ag/t
<u>Probable</u>	<u>56,780(52,400) @ 0.25(0.35) 17.2(22.8)</u>
Subtotal:	89,807(86,100) @ 0,27(0.38) 18.0(23.2)
<u>Possible:</u>	<u>54,712(55,825) @ 0.23(----) 16.7(----)</u>
TOTAL	<u>144,519(141,925) @ 0.25(----)oz.Au/t and 17.5(----)oz.Ag/t</u>

Comparing figures shows a significant difference in values. The reason for these differences is that the reserves in this report are based on a four foot mining width while Dr. Campbell based his calculations on two and three foot widths.

The pictures that one gets from the total reserves has to be interpreted with caution. That is to say, one deals with average values that include high-grade ore bodies as well as poorer ones. It seems, therefore, to be appropriate to subdivide the ore reserves into four categories according to gross value, as follows:

- Ore bodies with gross value \$40/ton or more;
- " " " " " between 30 and 40 \$/ton;
- " " " " " between 20 and 30 \$/ton;
- " " " " " less than 20 \$/ton.

This distribution is shown by using different colors in the attached sections (Fig.4).

Table 4: TOTAL RESERVES OF WEBBER AND CABIN CREEK ARRANGED ACCORDING TO GROSS VALUE (December 31, 1968)

Class	tons	%	Average Values		
			Au(oz/t)	Ag(oz/t)	Gross Value (\$/t)
40\$/t or more	64,693	45	0.358	28.640	70.70
\$30-40	25,620	18	0.224	12.295	33.00
\$20-30	20,328	14	0.181	8.440	23.70
less than \$20 per ton	<u>33,878</u>	<u>23</u>	0.130	5.680	16.25
Total	<u>144,519</u>	<u>100%</u>			

From the foregoing table it may be seen that 45% of the Webber ore has a value of over \$40.00 per ton, (Averaging \$70.70 per ton) and that 63% of the ore has a gross value of over \$30.00 per ton. As most of the gross value is associated with the silver content, the market price of silver has a strong influence on the ore value. A one dollar increase in the price of silver would result in an increase of \$17.50 in the gross ore value.

## B. HUESTIS MINE

During 1968 exploration efforts were concentrated in the Huestis Mine, at which time 12 Vein on the 4100 level was developed along some 700 feet of its length. Diamond drilling traced 13 Vein over a length of 700 feet. As a result of this work, ore reserves in the Huestis Mine were nearly doubled. Twelve Vein, located on the 4100 level, correlated very well with the 12 Vein on the 4300 level. It was found that values along dip were very erratic and that no control could be determined.

There is a parallel system of veins in the Huestis Mine, as summarized below. Numbering runs from north to south.

- 11 Vein: Low grade. Very little minable ore.
- 12 Vein: Most of the reserves are blocked in this vein.
- 13 Vein: To date only traced by diamond drilling on the 4300 level.
- 15 Vein: Cut by only one diamond drill hole.
- 17 Vein: Cut by only one diamond drill hole.

Total ore reserves figures are shown in Table 5 and in Illustrations 2A, 2B and 5. Tonnage calculations are based on four surface trenches. (Vein is 4.1 feet wide and averages 0.68 oz. Au/t and 31.7 oz. Ag/t) as well as underground sampling in mine headings and stopes. Assays from surface trenches were higher than those obtained from corresponding underground sampling and this is attributed to secondary enrichment close to surface.

Table 5: HUESTIS MINE - ORE RESERVES (December 31, 1968)

Vein No.	Ore Shoot No.	Proven Ore (tons)	Probable Ore (tons)	Possible Ore (tons)	Grade		Gross Value (can.\$/t)
					Gold (oz/t)	Silver (oz/t)	
11	628	1,745	1,745		0.28	1.4	13.30
12	608	764	700		0.29	5.1	21.00
	609			1,309	0.48	6.6	31.20
	610		1,200		0.30	7.0	25.25
	595	1,309	1,636	1,309	0.23	14.0	36.60
	594	7,288	1,781		0.58	19.2	60.15
		6,545	2,618	5,236	0.31	8.3	28.20
			8,600		0.44	13.7	44.40
	591	1,254	600	927	0.36	10.0	33.50
		2,126	1,090	2,180	0.22	4.1	16.45
			3,490		0.27	6.2	22.50
	590	4,036	1,363		0.35	4.6	22.30
			1,363		0.30	10.1	31.45
				1,818	0.32	7.4	26.80
		1,909	954	1,909	0.20	1.2	10.00
			4,800		0.28	3.1	16.70
	588	2,526	1,090		0.19	4.7	16.50
			1,090		0.91	48.3	140.60
				2,909	0.55	26.5	73.60
		6,708	2,454	4,908	0.43	8.8	33.70
			5,872		0.31	6.7	25.00
585	6,618	2,836	8,036	0.32	10.8	33.60	
	3,599	2,944	10,470	0.70	11.4	49.00	
		10,254	1,472	0.51	11.1	41.30	
	DDH 27		1,309		0.65	10.8	46.00
13	595	1,309	1,309		0.32	14.3	40.60
	DDH5-16		15,272		0.20	8.4	24.30
15	DDH 12		1,309		0.52	3.8	27.10
17	DDH 12		1,309		0.22	5.8	19.85
Mill	---		1,036		0.41	4.1	23.60
TOTAL		47,736	80,024	42,483			

NOTE: Calculated at 4.0 feet mining width.

The total reserves of the Huestis Mine are contained in Table 6 (in parentheses are the corresponding values from Dr. Campbell's reports).

Table 6: TOTAL RESERVES IN THE HUESTIS MINE (December 31, 1968)

Proven:	47,736(41,425)t	@ 0.38(0.52)oz.Au/t	& 9.70(11.5)oz.Ag/t
Probable:	<u>80,024(49,650)t</u>	<u>0.36(0.47)</u>	<u>9.42(10.1)</u>
Subtotal:	127,760(91,075)t	0.37(0.50)	9.55(10.8)
Possible:	<u>42,483(71,445)t</u>	<u>0.44(----)</u>	<u>10.52(----)</u>
TOTAL:	<u>170,243(162,520)t</u>	<u>0.386(----)oz.Au/t</u>	<u>9.78(----)oz.Ag/t</u>

The following assumptions may be derived from Table 6:

- Metal contents, as calculated by the author, are lower than those worked out by Dr. Campbell, particularly gold. Tonnages as calculated by the author were also lower.

Comparing the reserves for the Webber Mine to the Huestis Reserves it can be seen that gold assays in Huestis are some 50% higher, (0.386 oz/t vs. 0.25 oz/t) while silver assays are about 100% lower, (9.78 oz/t vs. 17.5 oz/t). The gross value per ton in the Webber Mine is approximately 30% higher than that of the Huestis (can.\$44.50/ton vs. can.\$34.05/ton).

Taken on the whole the Huestis ore is lower in grade than the Webber ore and consequently has a lower gross value per ton. Total reserves in the Huestis mine, categorized according to gross value are as shown in Table 7. Gold price was taken at \$37.50 per oz. and silver at \$2.00 per oz.

Table 7: TOTAL RESERVES IN THE HUESTIS MINE, categorized according to gross value (December 31, 1968)

<u>Class</u>	<u>Tons</u>	<u>%</u>	<u>Average Values</u>		<u>Gross Value</u>
			<u>Au(oz/t)</u>	<u>Ag(oz/t)</u>	
40\$/t or more	54,334	32	0.57	14.7	50.90
\$30-40	41,267	24	0.35	10.2	33.80
\$20-30	51,259	30	0.28	7.3	25.20
less than \$20/t	<u>23,383</u>	<u>14</u>	0.23	3.1	14.90
TOTAL	<u>170,243</u>	<u>100%</u>			

In the case of the Huestis Mine, the high-grade ore reserves (more than \$40/ton) represent almost exactly one-third of the

total reserves, significantly less than in the Webber Mine (45%).

The reserves of the Huestis Mine have somewhat increased during the first months of 1969. The drift along Vein 12 in a westerly direction (on Level 4100) was continued with very good results. Assays from the first 70 feet of the new drift shows average returns of 0.7 oz.Au/t and 14.0 oz.Ag/t over an average width of 4.0 feet, corresponding to a gross value of \$54.25/t. Dr. Campbell maintains correctly that "there is an ample immediate room at the Huestis Mine to develop new ore reserves northward on No.'s 11 and 12 veins as well as to depth" (report of December 10, 1968, page 9). One may add that the same is true for Vein 13 on Level 4300, as well as for both Vein 1 and Vein 2 in the Webber Mine.

Also correctly, Dr. Campbell maintains (same report, same page) that "the 50% increase in the proven-probable reserves in 1968 by the results from one drift (4100 level, No. 12 vein), is an excellent return for development and gives an encouraging indication of the potential for continued development in this mine."

C. BROWN-McDADE MINE

At the time of the author's visit to the Brown-McDade Mine the portal had been sealed for some time and it was impossible to enter due to poor air. This property will be examined after adequate ventilation has been provided.

Dr. Campbell (Reports of November 10, 1965 and January 19, 1968) reports two veins, numbers 1 and 2, which were explored underground and on surface. Underground drifts have traced the veins for some 1100 feet on strike while surface location was accomplished by a series of trenches. Limited diamond drilling was also done to locate down dip extension of the veins.

Ore reserves are outlined in table 8 and Illustrations 3 and 6. It should be noted that the vein widths in Brown-McDade are generally in excess of four feet and that vein widths were used to calculate ore reserves. It should also be noted that only ore located by underground headings was considered for reserve calculations. Ore exposed by surface trenching has not yet been correlated to underground workings and was therefore eliminated from reserve calculations.

Table 8: ORE RESERVES IN THE BROWN-McDADE MINE  
(December 31, 1968)

Ore Shoot No.	Width (feet)	Reserves			Grade		Gross Value (can.\$/t)	
		Proven (tons)	Probable (tons)	Possible (tons)	Gold (oz/t)	Silver (oz/t)		
1 Vein	1N-2	5.1	1,530	1,530	1,530	0.41	1.68	18.75
	1N-1	4.6	3,889	3,889	3,889	0.51	6.07	31.25
	1S-1	4.9	3,341	3,341	3,341	0.41	3.92	23.20
2 Vein	2N-1	4.0	2,400	2,400	2,400	0.34	9.11	31.00
	2S-1	4.0	2,181	2,181	2,181	0.116	4.36	13.10
	2S-2	12.5	-----	4,091	4,091	0.31	9.31	30.25
	2S-3	6.0	-----	3,109	3,109	0.29	7.74	26.35
	2S-4	4.0	-----	1,309	1,309	0.48	3.86	25.70
TOTAL			13,341	21,850	21,850			

Table 9 contains a compilation of the total reserves in the Brown-McDade Mine ( in parentheses are the corresponding values from Dr. Campbell's report of January 19, 1968).

Table 9. TOTAL RESERVES IN THE BROWN-McDADE MINE  
(December 31, 1968)

Proven:	13,341(16,380)t	@ 0.38(0.50)oz.Au/t	& 5.3(6.6)oz.Ag/t
Probable:	<u>21,850(26,720)t</u>	<u>0.36(0.51)</u>	<u>6.3(6.1)</u>
Subtotal:	35,191(43,100)	0.34(0.51)	5.9(6.3)
Possible:	<u>21,850(11,440)</u>	<u>0.36(0.44)</u>	<u>6.3(6.6)</u>
Total:	<u>57,041(54,540)</u>	<u>0.364(0.49)</u>	<u>6.1(6.6)</u>

In addition to the above values the following should be noted:

The mineralogical and structural patterns at Brown-McDade differ significantly from those found at both the Webber and Huestis Mines. The veins are wider, up to 12.5 feet in places but generally averaging between four and five feet in width. The overall grade is lower, particularly silver. To illustrate this point gross ore values have been calculated and are outlined in Table 10.

Table 10. TOTAL RESERVES IN THE BROWN-McDADE MINE,  
CATEGORIZED ACCORDING TO GROSS VALUE

Class	tons	%	Average Values		Gross Value (\$/t)
			Au(oz/t)	Ag(oz/t)	
40\$/t or more	--	0			
\$30-40	27,049	48	0.40	7.9	30.85
\$20-30	18,859	33	0.38	5.2	24.60
less than					
\$20/t	<u>11,133</u>	<u>19</u>	0.24	3.25	15.40
Total	<u>57,041</u>	100%			

From the above table it can be seen that none of the Brown-McDade reserves fall into the \$40.00 category. The highest grade ore has a gross value of \$31.25, much lower than that of the Webber or Huestis zones. On the other hand, the second class represents almost 50% of the total reserves (with an average gross value of can. \$30.85/ton).

It should also be noted that exploration and development at the Brown-McDade is limited and that substantial additional work is required before a fair estimate of Brown-McDade potential can be evaluated.

2. TOTAL RESERVES

A. MOUNT NANSEN MINES LIMITED (Webber and Huestis)

The figures shown in Table 11 and Illustration 1 show the total combined reserves in the Webber and Huestis Mines.'

Table 11. TOTAL RESERVES IN THE MOUNT NANSEN MINES LIMITED (Webber and Huestis) (December 31, 1968)  
In parentheses are the corresponding values taken from Dr. Campbell's report of December 10, 1968.

Proven:	80,763(75,125)t @	0.347(0.474)oz.Au/t	13.626(16.98)Ag/t	oz.
Probable:	<u>136,804(102,050)</u>	<u>0.314(0.429)</u>	<u>12.637(16.37)</u>	
Subtotal:	217,567(177,175)	0.3265(0.45)	13.004(16.6)	
Possible:	<u>97,195(127,270)</u>	<u>0.3217(---)</u>	<u>13.900(----)</u>	
Total:	<u>314,762(304,445)t</u>	<u>0.325(----)</u>	13.3086(---)	

A comparison of the author's tonnages and grades with those given in Dr. Campbell's report shows a variation in tonnage and grade. These variations are chiefly due to the different approaches taken in calculating the reserves in the Webber Mine. Ore reserves calculated at various gross values are shown in Table 12 and Illustration 2.

Table 12. TOTAL RESERVES IN THE MOUNT NANSEN MINES CATEGORIZED ACCORDING TO GROSS VALUE (December 31, 1968)

Class	tons	%	Average Values		Gross Value (\$/t)
			Au(oz/t)	Ag(oz/t)	
40\$/t or more	119,027	38	0.45	22.3	61.65
\$30-40	66,887	21	0.31	11.0	33.50
\$20-30	71,587	23	0.25	7.6	24.80
less than \$20/t	<u>57,261</u>	<u>18</u>	0.17	3.9	14.35
Total	<u>314,762</u>	100%			

An examination of the above shows that 38% of the total reserves lie in the \$40.00 and above class with a gross value of \$61.65 per ton and that an additional 21% of the total reserves fall in the \$30.00 to \$40.00 class (averaging can.\$33.50/ton).

B. MOUNT NANSEN MINES LTD. AND BROWN-McDADE MINES LTD.

Total reserves are increased if the Brown-McDade ore is considered. Including the Brown-McDade reserves in the total is justified as this property is adjacent to the Huestis mine and the ore can be economically treated at the Huestis mill. As the veins in the Brown-McDade Mine are wide and easily minable, mining costs could be substantially lower than those expected in Webber and Huestis. Total ore reserves, including Brown-McDade are shown in Table 13 and Illustration 1.

Table 13. TOTAL RESERVES MOUNT NANSEN AND BROWN-McDADE MINES (December 31, 1968) (no corresponding values in Dr. Campbell's report).

Proven:	94,104 t @	0.352 oz.Au/t	and	12.445 oz.Ag/t
Probable:	<u>158,654</u>	<u>0.320</u>		<u>11.766</u>
Subtotal:	252,758	0.332		12.018
Possible:	<u>119,045</u>	<u>0.328</u>		<u>12.580</u>
TOTAL:	<u>371,803</u>	<u>0.331</u>		<u>12.198</u>

The average gross value is can.\$36.80/ton (with Au can.\$37.50/oz and Ag can.\$2.00/oz).

Total ore reserves including Brown-McDade were calculated at various gross values and the results are summarized in Table 14 and Illustration 2.

Table 14. TOTAL RESERVES IN THE MOUNT NANSEN AND BROWN-McDADE MINES, CATEGORIZED ACCORDING TO GROSS VALUE.

Class	tons	%	Average Values		Gross Value
			Au(oz/t)	Ag(oz/t)	
40\$/t or more	119,027	32	0.46	22.3	61.65
\$30-40	93,936	25	0.34	10.1	32.75
\$20-30	90,446	24	0.28	7.1	24.75
less than \$20/t	<u>68,394</u>	<u>19</u>	0.18	4.4	16.90
TOTAL:	<u>371,803</u>	<u>100%</u>			

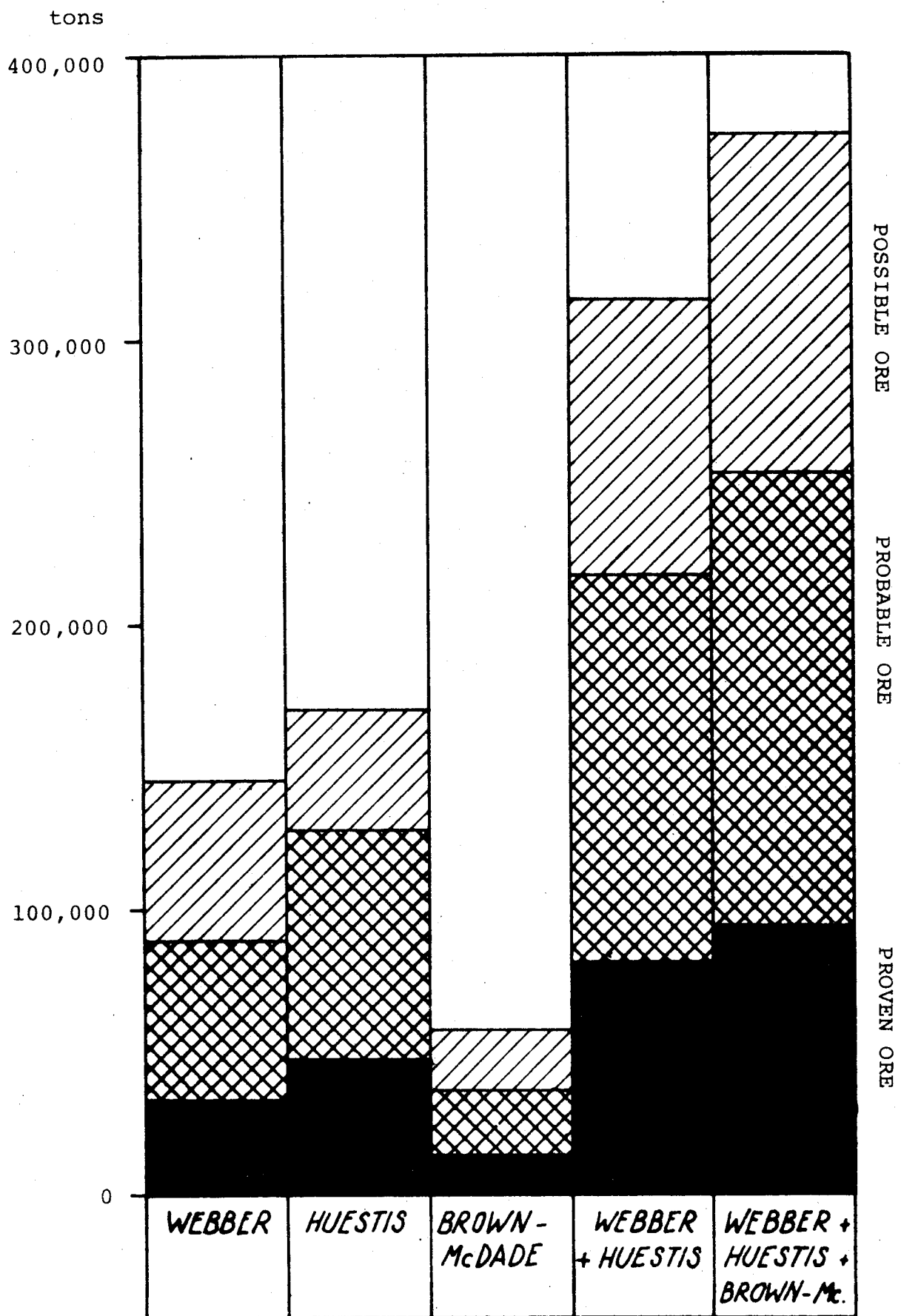


Diagram 1: Total reserves in the Webber, Huestis, and Brown-McDade Mines

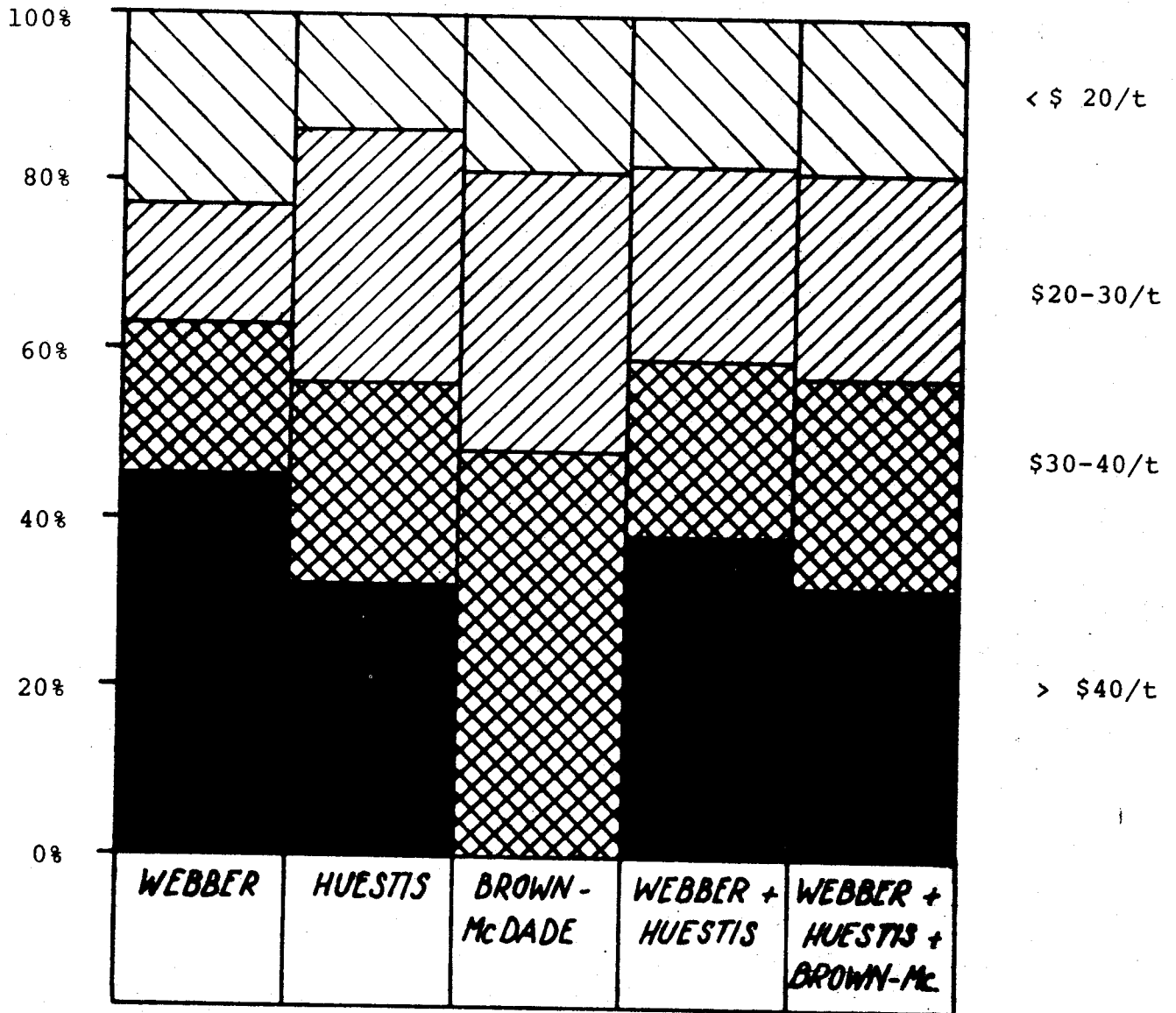


Diagram 2: Classification of the Ore Reserves according to Gross Value

It can be seen that reserves with a gross value of \$40/t or more, constitute one-third of the total (with an average gross value of \$61.65/ton!) Another 25% of the total reserves have an average gross value of \$32.75/ton. One must not forget, however, that these figures deal with the total reserves (proven, probable and possible ore); and that only part of these reserves are accessible and ready for mining.

### 3. CONCLUSIONS

At this point a few considerations relating to total gross values in relation to production can be made. Assuming a mill throughput of 200tpd (tons per day) and a recovery of 90%, the following picture is presented:

Life and Gross Value of the Reserves  
(200t/day and 90% recovery Au and Ag)

- a. PROVEN RESERVES: 94,104 tons corresponding to a life of 470 days and a gross value of \$3,215,000.
  
- b. PROVEN AND PROBABLE RESERVES: 525,758 tons, corresponding to a life time of 1264 days and a gross value of \$8,300,000.
  
- c. PROVEN, PROBABLE AND POSSIBLE RESERVES: 371,803 tons, corresponding to a life of 1859 days and a gross value of \$12,420,000.

One should not lose sight of the fact that only one third of the reserves lies in the plus \$40.00 class and that if present mining costs of over \$40.00 per ton are maintained then only 32% of the reserves are economical. If costs are reduced to \$30.00 which is certainly feasible, then 57% of the reserves are economic. If costs can be further reduced to 25.00 per ton then 80% of the listed reserves would fall into the minable class.

Another possibility which would increase the amount of economic ore would be an increase in the price of gold and/or silver. Considering an increase in silver price to \$3.00 per oz and production costs of \$30.00 per ton, then 80% of the reserves are economically minable and gross values would increase from \$36.80 to \$49.00 per ton.

If the present high production costs are maintained it is recommended that mining be carried out as outlined below:

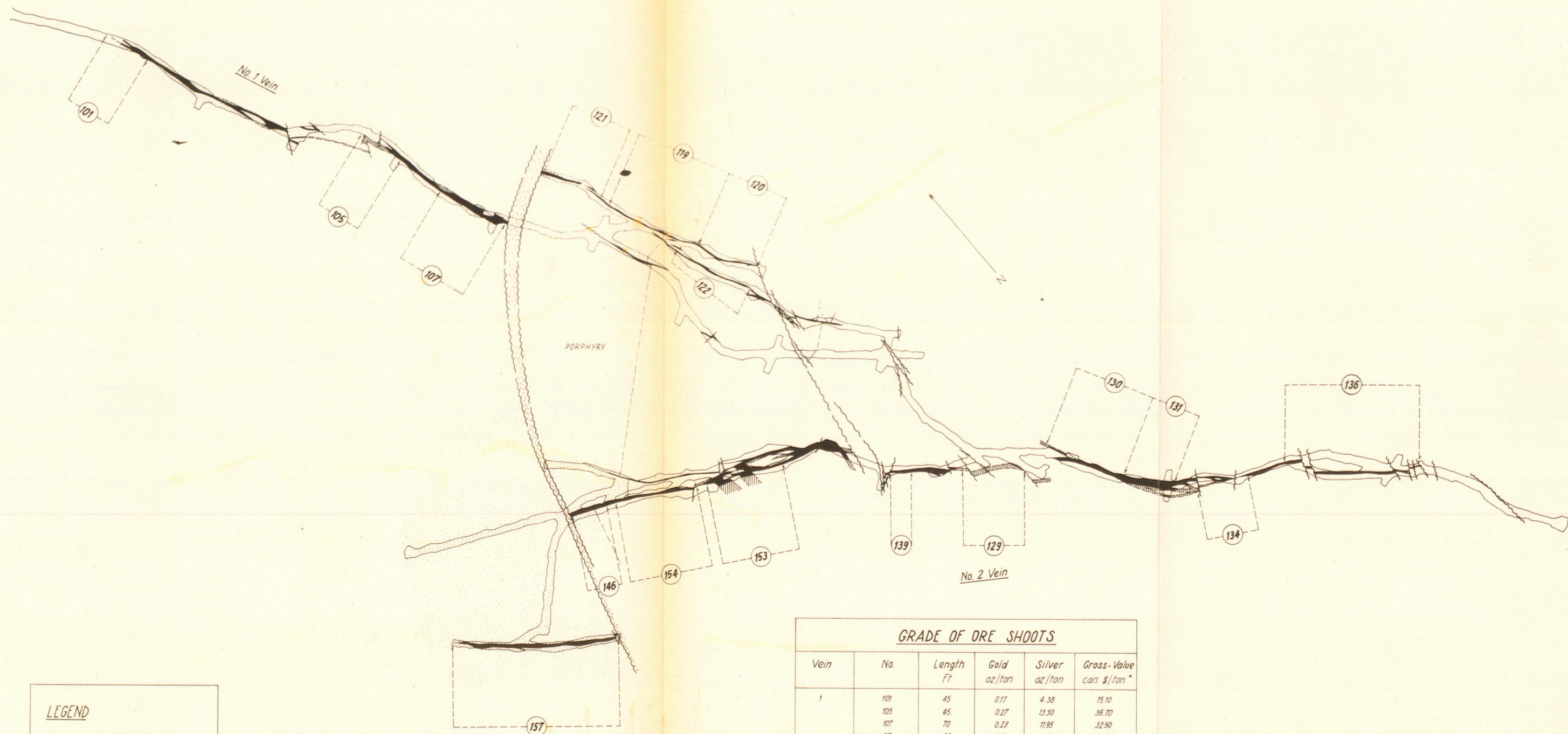
- Mine the high-grade ore bodies (\$40/ton or more);
- Reduce production costs from the current \$43.80/ton to \$30/ton (or **even** \$25/ton);
- Parallel with the lowering of production costs, mine and mill average-grade ore bodies;
- Mine the low-grade ore bodies together with the high-grade when the silver price rises to such a point that they become economic.
- At the same time increase sharply, in order to convert probable and possible reserves into proven ones.

Vancouver, March 13, 1970






FB:vs

*F. Bianconi*

Dr. F. Bianconi



**LEGEND**

-  Ore Shoot
-  Vein Zone in drift
-  Vein Zone in walls
-  Fault
-  Wide mass of gouge
-  Raise

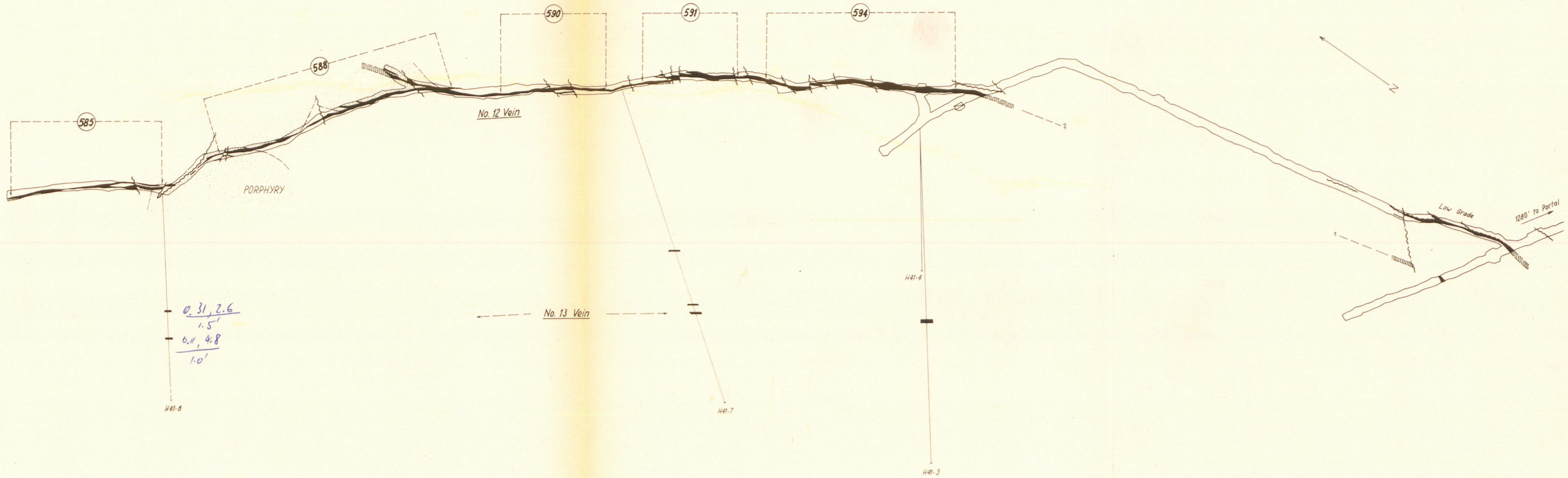
**GRADE OF ORE SHOOTS**

Vein	No.	Length Ft.	Gold oz/ton	Silver oz/ton	Gross-Value can \$/ton*
1	101	45	0.17	4.38	15.10
	105	45	0.27	13.30	36.70
	107	70	0.23	11.95	32.50
	119	85	0.16	9.00	24.00
	120	65	0.06	4.65	11.55
	121	50	0.27	29.30	68.70
	122	80	0.13	6.29	17.40
2	129	60	0.16	6.33	16.60
	130	80	0.06	15.00	32.25
	131	45	0.13	7.47	19.80
	134	50	0.14	8.66	23.00
	136	130	0.54	41.50	103.25
	139	20	0.18	17.30	41.35
	146	35	0.23	5.24	18.75
	153	75	0.08	5.38	13.75
154	80	0.17	12.10	30.50	
157	160	0.31	13.80	39.20	

Width: 4'

\*@ 37.50 \$/oz Au  
2.00 \$/oz Ag

F. Bianconi  
 Mt. Nansen Mines Ltd., Vancouver, B.C.  
 Ore Shoots  
**WEBBER VEINS ZONES**  
**4260 ADIT LEVEL**  
 Scale 1" = 100'    April 1969    Fig. 1



0.31, 2.6  
 1.5'  
 6.11, 4.8  
 1.0'  
 H41-8

No. 13 Vein

LEGEND

- Ore shoot
- Vein zone in drift
- Vein zone in walls
- Ore intersection in drill hole
- Fault
- Raise

GRADE OF ORE SHOOTS					
Vein	No.	Length Ft	Gold oz/ton	Silver oz/ton	Gross Value can \$/ton *
12	585	160	0.70	11.4	49.00
	588	255	0.43	8.8	33.70
	590	100	0.20	1.2	10.00
	591	100	0.22	4.1	16.45
	594	200	0.31	8.3	28.20
		Width: 4'			

\* @ 37.50 \$/oz Au  
2.00 \$/oz Ag

F. Bianconi

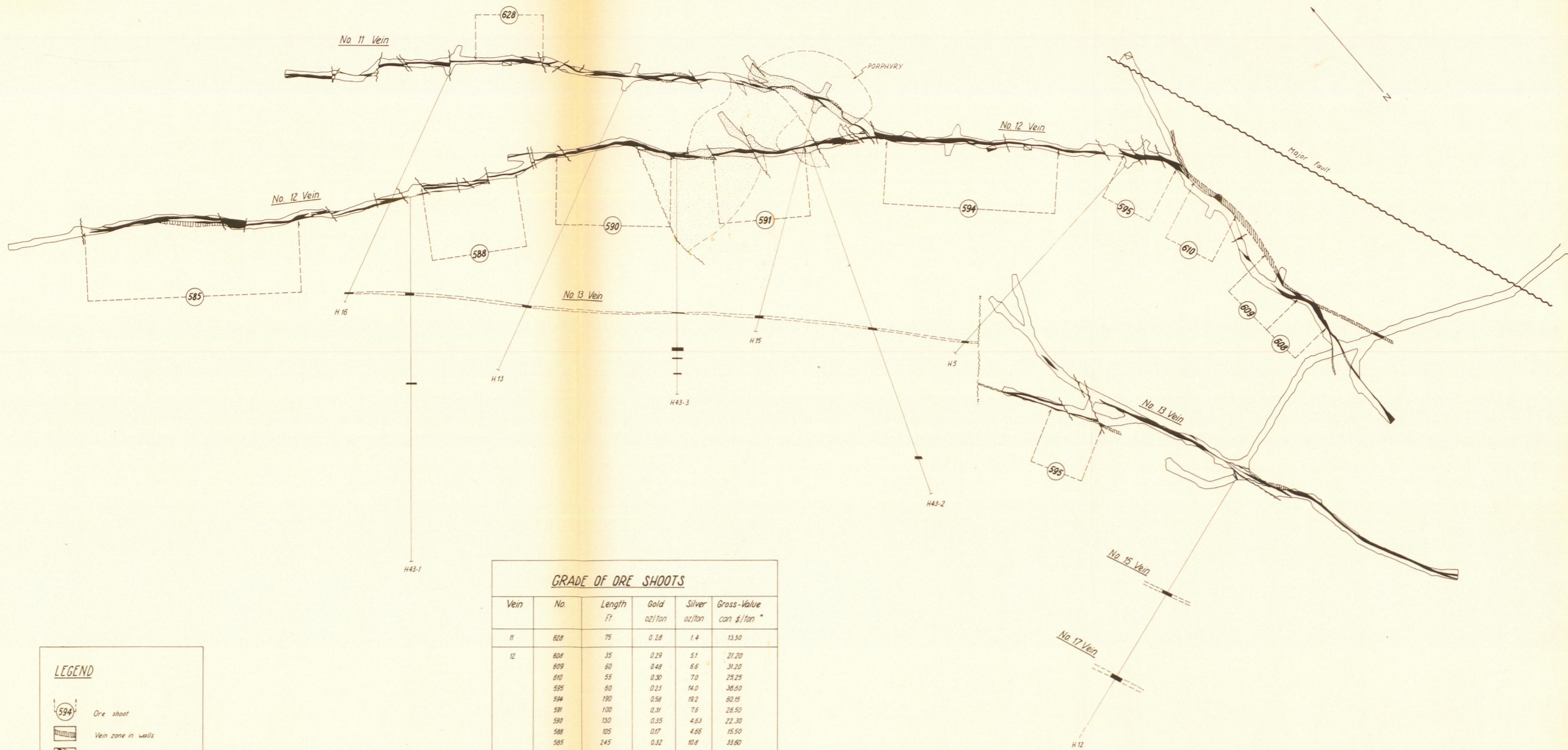
Mt. Nansen Mines Ltd., Vancouver, B.C.

Ore Shoots

**HUESTIS VEIN ZONES**

**4100 ADIT LEVEL**

Scale 1" = 100'    April 1969    Fig. 2A



**LEGEND**

- Ore shoot
- Vein zone in walls
- Vein zone in drift
- Ore intersection in drill hole
- Fault
- Ore pass, Raise

**GRADE OF ORE SHOOTS**

Vein	No.	Length Ft	Gold oz/ton	Silver oz/ton	Gross-Value can \$/ton *
11	628	75	0.28	1.4	13.30
12	608	35	0.29	5.1	21.20
	609	60	0.48	6.6	31.20
	610	55	0.30	7.0	25.25
	595	60	0.23	14.0	36.60
	594	190	0.58	19.2	60.15
	591	100	0.31	7.6	26.50
	590	130	0.35	4.63	22.30
13	588	105	0.17	4.68	15.50
	585	245	0.32	10.8	33.00
	595	60	0.32	14.3	40.60
15	H5-H16	700	0.20	8.4	24.30
	H12	?	0.52	3.6	27.10
17	H12	?	0.22	5.8	19.85

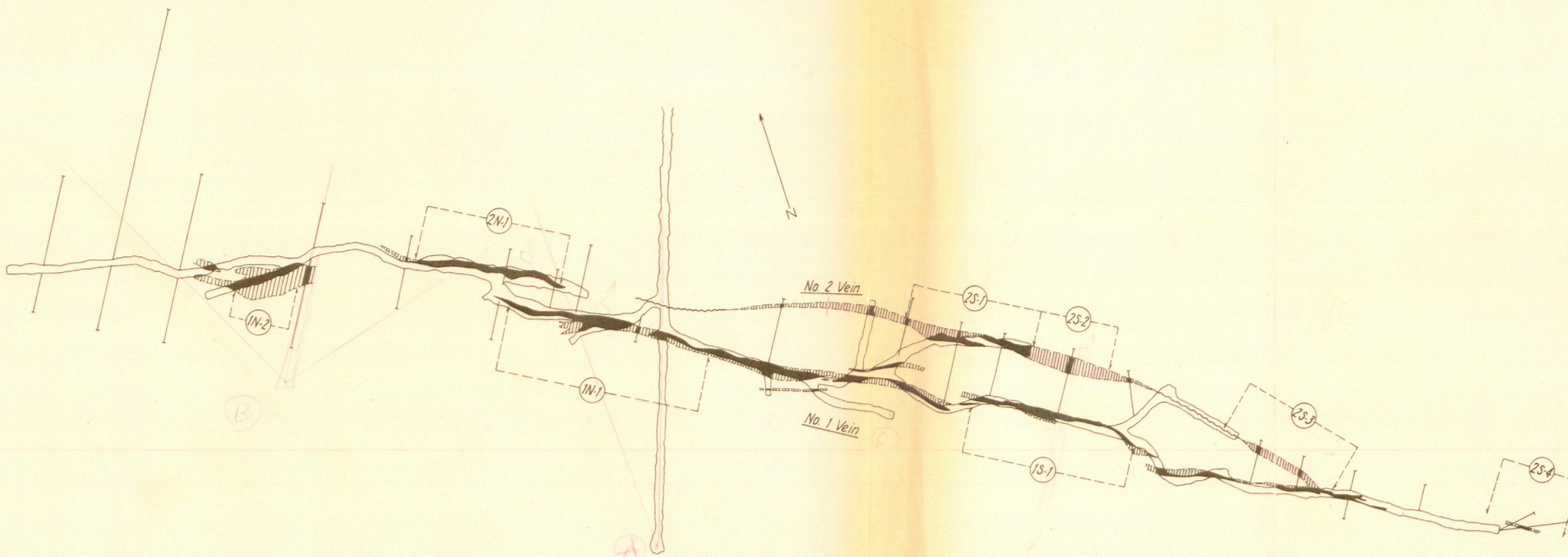
Width: 4'

\* @ 3750 \$/oz Au  
200 \$/oz Ag

F. Bianconi  
Mt. Nansen Mines Ltd., Vancouver, B.C.

**Ore Shoots  
HUESTIS VEIN ZONES  
4300 ADIT LEVEL**

Scale 1" = 100'    April 1969    Fig. 2B



**LEGEND**

- Ore shoot
- Vein zone in drift
- Vein zone in walls
- Ore intersection in drill hole
- Fault

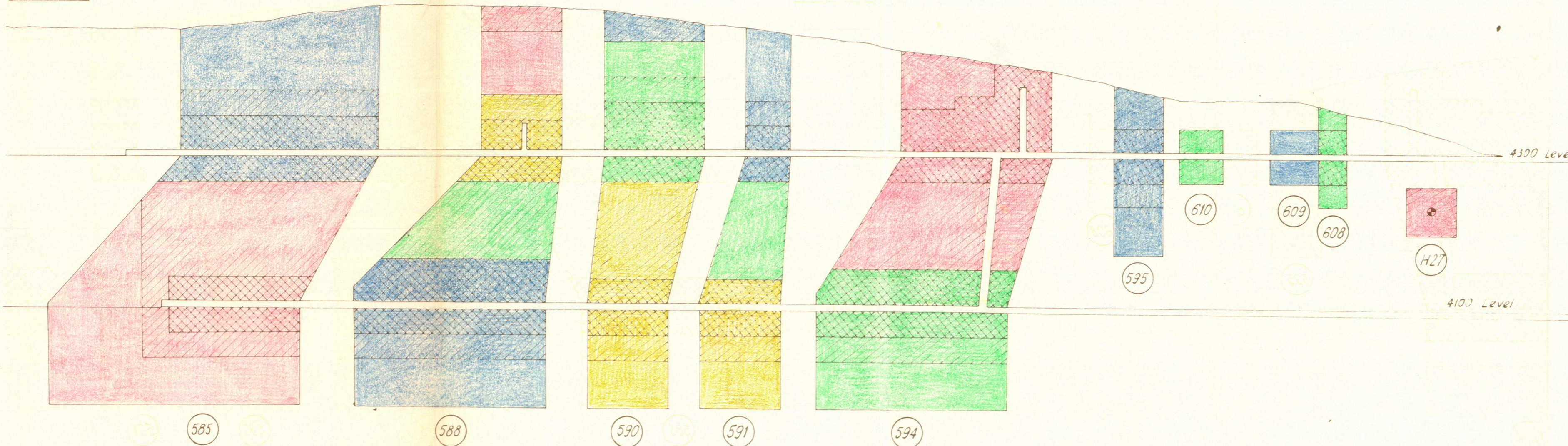
GRADE OF ORE SHOOTS					
Vein	No.	Length Ft	Gold oz/ton	Silver oz/ton	Gross-Value can. \$/ton
1	1N-2	55	0.41	1.68	18.75
	1N-1	155	0.51	6.07	31.25
	1S-1	125	0.41	3.92	23.50
2	2N-1	110	0.34	9.11	31.00
	2S-1	100	0.12	4.36	13.20
	2S-2	60	0.31	9.31	30.25
	2S-3	95	0.29	7.74	26.35
	2S-4	60	0.48	3.86	25.70

Width: 4' *(= 12.5')* @ 3750 \$/ton Au  
200 \$/ton Ag



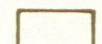

F. Bianconi  
 Mt. Nansen Mines Ltd., Vancouver, B.C.  
 Ore Shoots  
**BROWN-McDADE VEIN ZONES**  
 4100 ADIT LEVEL  
 Scale 1" = 100'    April 1969    Fig. 3







No. 12 Vein



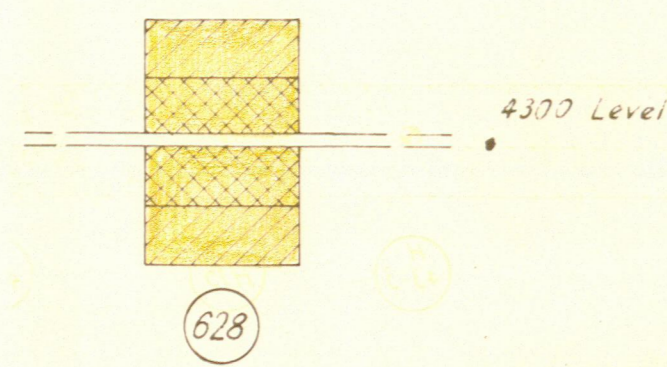
LEGEND

-  Proven Ore
-  Probable Ore
-  Possible Ore
-  Diamond Drill Hole (Ore, Nil)

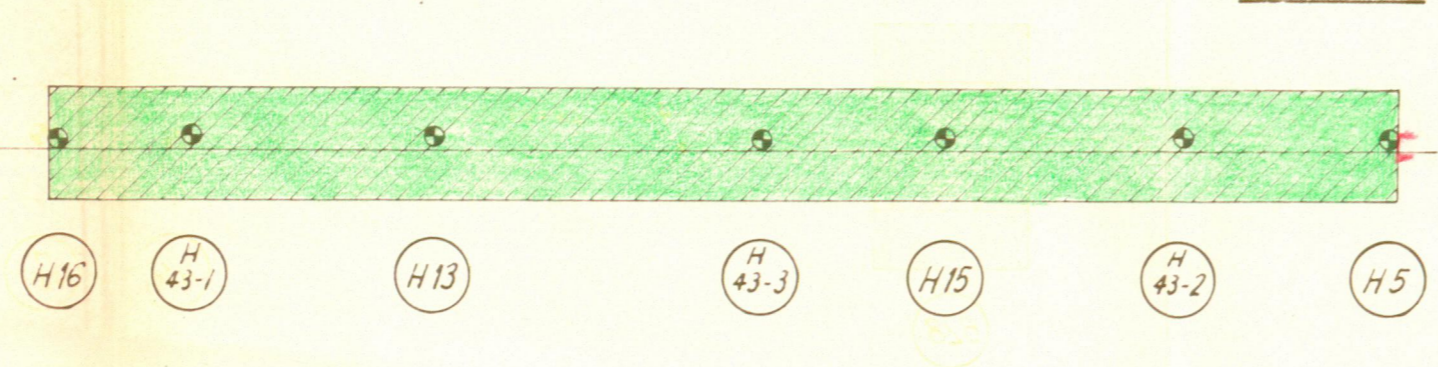
Value (can \$/ton)

-  40 or more
-  30-40
-  20-30
-  < 20

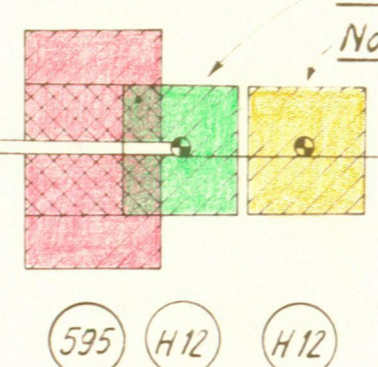
No. 11 Vein



No. 13 Vein



No. 15 Vein

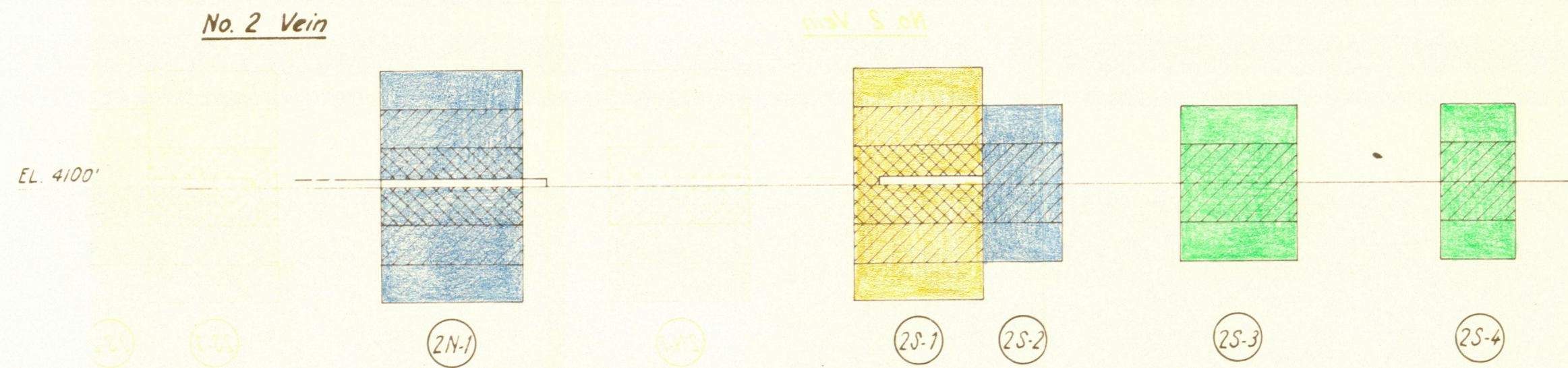
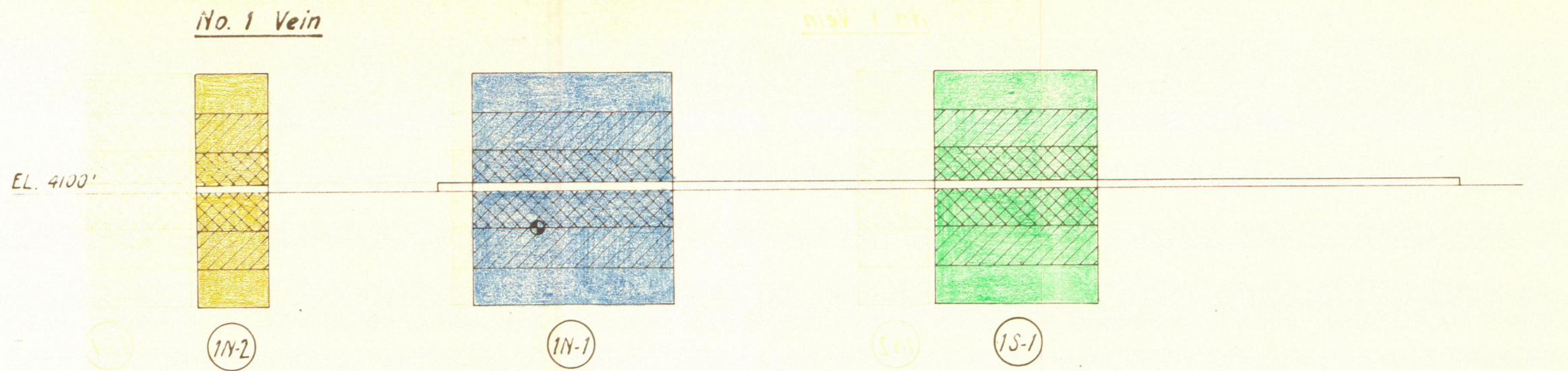


No. 17 Vein















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Longitudinal vertical section  
**HUESTIS VEINS**  
**ORE RESERVES**



**LEGEND**

- |   |                    |   |                    |   |
|---|--------------------|---|--------------------|---|
|  | Proven Ore         |  | Value (can \$/ton) |  |
|  | Probable Ore       |  | 30-40              |  |
|  | Possible Ore       |  | 20-30              |  |
|  | Diamond Drill Hole |  | < 20               |  |
|   | (Ore, Nil)         |   |                    |   |

F. Bianconi

Mt. Nansen Mines Ltd., Vancouver, B. C.

Longitudinal vertical section  
**BROWN McDADE VEINS**  
**ORE RESERVES**

Scale 1" = 100'      April 1969      Fig. 6