

Box 8

REPORT ON

FISH LAKE PROPERTY - TASEKO MINES

N.T.S. 92 0-5/E

Vancouver, B.C.  
May 30, 1975

S.H. Pilcher

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Fig. 1. Location Map Fish Lake Property	(Follows Page 2)
Fig. 2 Geologic Map	(In pocket)
Fig. 3 Cross Section A-A'	( " )
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FISH LAKE PROPERTY

TASEKO MINES

92 O-5/E

This property was originally discovered by Phelps Dodge in 1960. They dropped the ground after drilling several short pack-sack holes into the pyritic zone. Taseko Mines picked up the ground in 1966 and drilled 12 percussion holes and 6 diamond drill holes. The property was optioned to Nittetsu in 1970, during which time they drilled 4 diamond drill holes and did a very small amount of I.P. Quintana took the option in 1973-74, and did 20,000 feet of diamond drilling. The option was dropped in the latter part of 1974. According to Whist Charley Ney wanted to continue work on the property; however, the payment due was \$100,000 and Quintana did not wish to put up this kind of money for something under socialist control.

Whist is looking for money for development of the Atlin Ruffner, for which he will deal on the Fish Lake property. Either in stocks or cash, the sum mentioned was \$200,000.

The following description is taken from scattered pieces of reports, most of which were written by M. Wolfhard of Quintana.

The enclosed maps are rough sketches made from uncoloured copies, and I'm not sure about some of the geology on the cross-sections and the alteration as shown.

Taseko presently holds 196 claims in the area. Most of these come due in 1980 and later.

## Geology

A poorly exposed quartz diorite stock-dike complex crops out east of the Taseko River in the vicinity of Fish Lake, and along the Fish Creek Valley (Figure 1). Six distinct phases of the quartz diorite have been determined. The rock intrudes Cretaceous sediments and pyroclastics and is partially overlain by plateau basalts. The intrusive has been dated (whole rock) at  $77 \pm 2.8$  m.y.

The main area of interest is centered about a small quartz diorite plug and a quartz-feldspar porphyry dike (quartz diorite) which trends east-west and dips steeply south (Figures 2 & 4). These rocks cut older quartz diorite and they appear to be the major control to the alteration and mineralization.

## Alteration

Concentric alteration facies are approximately centered on the two late quartz diorite bodies mentioned above (Figure 5). Outward from the centre the zones or facies are defined by pervasive secondary biotite-pervasive sericite-fracture controlled sericite-chlorite-epidote. No fresh plagioclase or hornblende remains within the limit of the fracture controlled sericite. Disseminated carbonate is present throughout the entire area.

## Mineralization

Porphyry type copper and gold mineralization also appears to be related to the late intrusive phases, especially to the dike. Host rocks include several phases of quartz diorite as well as hornfelsed pyroclastics.

Mineralization consisting of pyrite, chalcopyrite, bornite, magnetite, hematite and rare molybdenite occurs as disseminations and as fracture and quartz veinlet fillings. Trace amounts of galena, sphalerite, tennantite, and gold are also present. Gangue consists of sericite, chlorite, quartz and gypsum.

Wolfhard has determined 8 separate stages of mineralization, beginning with disseminated pyrite, chalcopyrite, bornite, and magnetite and ending with gypsum-carbonate veinlets.

A zoning pattern is present as indicated below :

	<u>Central</u>	<u>Peripheral</u>
Py/cpy.	1/3 - 3/1	3/1 - 10/1
Total sulfides	2 - 5%	2 - 7%
Percentage of copper in fractures	50	90
Percentage of copper as bn.	5 - 30	0
Percentage Total copper	0.3	0.15
Cu ppm/Au.ppm	about 4000/1	about 6000/1

The copper and accessory gold is concentrated in the strong sericite and biotite alteration facies. The 0.15% copper contour corresponds roughly to the limit of the fracture controlled sericite.

The gold distribution is very similar to that of the copper and its values vary approximately with those of the copper. The following 100-foot assay sections from hole 73-10 illustrate this point.

<u>Au. (oz.)</u>	<u>Cu. (%)</u>	<u>Au. (oz.)</u>	<u>Cu. (%)</u>
.013	.387	.015	.306
.014	.313	.014	.180
.019	.352	.022	.370
.016	.295	.017	.335
.018	.256	.010	.251
.021	.366	.014	.251
.016	.337	.010	.233 (60')

Locally iron oxides, malachite and copper-bearing brown oxides are present near the surface. Based on copper distribution in several drill holes it has been suggested that some secondary enrichment is present in the upper 50 feet on the east end of the zone. Gavin Dirom has previously reported the presence of chalcocite; however, the mineral was not observed by any of the Quintana crew, and secondary enrichment is still speculative. Some of Quintana's drill holes were collared in the basalts southwest of the main showings in the hopes of finding a "protected enriched zone". They were not successful in penetrating the volcanic cover.

Alteration and weak mineralization in surface outcrop has been found in a largely overburden covered area about 2500 feet east of the main showing. No work has been done at this location.

Mill Tests

Three samples were submitted for mill tests to Britton Research in 1973. The recoveries obtained are as follows :

	<u>#1</u>	<u>#2</u>	<u>#3</u>
Au.	70 - 75%	55 - 60%	65 - 70%
Cu.	90%	85%	88%

The sample with the lowest gold recovery in the copper concentrate (#2), contained the greater percentage of pyrite, and it appears that a fairly high proportion of the gold is associated with pyrite. This is substantiated by the fact that floatation and recovery of the pyrite from the copper tails increased the gold recovery 13.6%, 15.3% and 4.4% respectively.

Reserves

As indicated by the drill spacing, data for calculation is minimal. Another problem is that recoveries were generally poor in holes drilled prior to 1973. The following ore reserves were calculated by Wolfhard after both the 1973 and 1974 drilling programs.

<u>1973</u>	<u>Tons</u>	<u>Cu.</u> <u>(%)</u>	<u>Au.</u> <u>(oz/ton)</u>	<u>Waste/ore</u> <u>ratio</u>
0.25 cutoff	32.9 x 10 <sup>6</sup>	.304	.016	2.87/1
0.20 cutoff	108.6 x 10 <sup>6</sup>	.250	.013	1.62/1
0.15 cutoff	320 x 10 <sup>6</sup>	.209	.011	1.05/1
0.27 cutoff	43.4 x 10 <sup>6</sup>	.30	.017	2.08/1
<u>1974 - 9 holes</u>	<u>Tons</u>	<u>Cu.</u> <u>(%)</u>	<u>Au.</u> <u>(oz/ton)</u>	<u>Waste/ore</u> <u>ratio</u>
Measured (.22 cutoff)	48.1 x 10 <sup>6</sup>	.304	.017	1.3/1
Measured (.18 " ) and indicated	105.8 x 10 <sup>6</sup>	.264	.014	1.35/1
Measured, (.18 cutoff) indicated and inferred	155.8 x 10 <sup>6</sup>	.251	.014	1.59/1

It is probable that further drilling will not change the ball park figures, but it is obvious that more holes and the deepening of others is necessary to define the known mineralization. Hole 73-10 is still in interesting alteration and mineralization at the bottom, 1420 feet.



Also the area to the east should be tested by drilling. Another factor to bear in mind is that no geochemical and very little I.P. work has been done and that much of the area is apparently covered.

Conclusions

We are looking at 100 million tons plus of 0.26% copper and 0.014 oz. gold. At present metal prices the gold value is nearly equal to that of the copper, giving about 0.5 copper equivalent. With increased copper prices this property could become attractive, especially since there are possibilities of additional reserves. It seems likely that this property could make a mine, depending on future metal prices and government policies.

S. H. Pilcher.

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