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June 28, 1969

Mr. Jarl Aa. B. Whist, Executive Vice President, Taseko Mines Ltd. (N.P.L.), 248 Second Avenue, Kamloops, B.C.

> BB Group, Fish Lake, Taseko Lake Area, Clinton Mining Division, B.C.

Dear Mr. Whist:

Herewith is a brief report covering my preliminary examination of a portion of the above property on June 17-19, 1969.

Attached are the following:

Map #1 Index Map - Sketch of Claims l" - 1 mile.
Map #2 BB Group - Geology, Geochem & Drilling - Plan l" - 200'
Map #2A Same as #2 with Recommended Diamond & Percussion Drilling & Trenching Indicated.

Copy of GSC Map 29=1963 - Taseko Lake Map Sheet - Geology 1" - 4 miles. Chemex Labs Ltd. Certificate of Analysis #4101 - June 23, 1969.

# GENERAL CONCLUSION AND RECOMMENDATIONS

Your Fish Lake property is an interesting exploration bet with attractive possibilities for low grade, porphyry type copper deposits.

Your present drilling program should provide encouraging results. It should be supplemented by an Induced Polarization and Magnetic Survey and a trial program of soil sampling.

Your entire holdings in this area should be reconnaissance mapped geologically and by stream silts.

A preliminary budget of \$15,000 is recommended for the geological, geophysical and geochemical phases of your program.

## GENERAL STATEMENT

Main purpose of examination was to make recommendations regarding a proposed program of diamond and percussion drilling and some additional exploration by bulldozer trenching.

Return trip from Kamloops was made by West Coast Air Service Cessna 180 (Tom Moore). Bill Anderson flew in with me and was a capable initial guide. Claude Danscy arrived by pickup truck and trailer the following morning and provided additional welcome assistance.

#### LOCATION, PROPERTY & HISTORY

The BB group is located about 7 miles due north of the north end of Taseko Lake, and lies about 150 miles airline NNW of Vancouver and the same distance WNW of Kamloops. It extends for 2-1/2 miles NW of Fish Lake and is adjoined by the subsequently staked BF group on the NE and the BJ group to the SE and further NE.

BB group consists of 40 claims; BF, 20 claims; and BJ, 72 claims, making a total of 132 claims. All are owned by Taseko Mines Ltd.

This area was originally staked by C.M. Vick & Associates as a Gold prospect. It is referred to in the 1935 Minister of Mines Report, pp F 28 & 29, as the Viccal and Mary Stewart. It was relocated in 1960 by Phelps Dodge Corporation, and in 1963 consisted of 75 claims. It subsequently was allowed to lapse and was restaked by Taseko Mines Ltd.

Phelps Dodge did ground magnetic, Induced Polarization, Self Potential and soil surveys; and completed at least six diamond drill holes totalling 2005' by 1963. It is possible they put in several additional holes in 1964.

Prior to this season Taseko Mines Ltd. did some trenching in proximity to the west base line and Phelp Dodge's holes 1 to 3. Earlier this year they did 2000' of percussion drilling in six completed holes and several which did not reach bedrock. Some bulldozer trenching was done in conjunction with this.

#### **REGIONAL GEOLOGY**

This is provided by GSC Map 29-1963. This shows that the Fish Lake area is principally underlain by flat lying Tertiery volcanics, but there is a window of older rocks extending northwesterly from Fish Lake. This window exposes Cretaceous or Tertiary dioritic and porphyritic rocks intruding Lower to Upper Cretaceous volcanics and sediments. Strong NW-trending faults are indicated two miles to the SW and a suite of northerly trending faults to the NW.

# LOCAL GEOLOGY

Personal knowledge of bedrock geology is limited to a quick look at the west base line trenches, some of the core of Phelps Dodge holes 1 & 2, exposures along the bulldozer road up the melt channel draw in the vicinity of Percussion Hole (P.H.) #6, and some old hand trenches 300-400' south of the latter. Outcrops are few on the property.

In the western workings the predominant rock is dioritic intrusives, with some feldspar porphyry and possibly porphyritic granodiorite. In the vicinity of P.H. #6 diorite is exposed at intervals for about 400' and some minor feldspar porphyry also was observed. In the hand trenches to

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the SE the rock indicated is highly pyritized and silicified volcanic, possibly rhyolite.

The exposures near P.H. #6 show a series of steep-dipping shears and minor faults trending mostly northeasterly to northerly. They suggest that this melt channel draw reflects a NE trending fault or shear zone. Other topographic lineaments suggest NW, N & E trends.

The diorite exposures near P.H. #6 are quite weathered and show considerable kaolinization and secondary sericite. The mafics occur in blotchy, porphyritic fashion and largely are altered to chlorite. Copper mineralization is indicated only by malachite staining, particularly in proximity to gougey shears. Washed cuttings from P.H. #6 show a lot of pyrite and no doubt some chalcopyrite although the material was not examined closely. This hole is reported to have averaged 0.26% Cu over its full length of 300'. The hole is weakly artesian and the overflow is quite acid and high in iron.

The presence of highly pyritized rhyolitic volcanics in the hand trenches to the south indicates that a contact exists between these and P.H. #6 and probably also P.H. #5. This is probably an intrusive contact but could also be a fault contact.

## DRILL HOLES & VALUES

It is understood that Phelps Dodge cut copper mineralization in all their diamond drill holes but that the grade was very low. My information is that the four Taseko percussion holes in this western area averaged about 0.15 to 0.2% Cu. These latter were vertical and about 300' in depth each.

Average of Taseko P.H. #5, about 500' west of P.H. #6, is reported at 0.3% Cu, 0.015 oz. Au & 0.03 oz. Ag to its depth of 300'; and P.H. #6, 0.26% Cu with the same Au & Ag content.

#### GEOCHEMISTRY

As rock outcrops are largely lacking the writer took 31 soil samples during the present examination to see if a soil survey would be helpful in reflecting and outlining areas of copper mineralization. There was some doubt about this as bedrock is covered generally with a considerable depth of gray boulder clay which is quite impervious.

Not surprising, the majority of the soil samples taken are not apparently anomalous. However, two <u>are</u> and these are from locations where limonite staining suggests that bedrock is at shallow dept. They ran 392 ppm and 510 ppm Cu and each ran 4 ppm Mo. Both lie about 400' 'north' of the present Taseko grid and are about 1200' apart.

Double sets of samples were taken in three of the recent bulldozer trenches, where bedrock was not reached, - one sample @ 12-18" depth,

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the other at the bottom of the trench, up to 9' deeper. In each case the deeper sample ran higher than the surface sample, e.g.:

64 ppm as against 43 ppm Cu 69 ppm as against 38 ppm Cu 52 ppm as against 36 ppm Cu

This may be coincidence but also suggests that careful soil sampling may be useful. Certainly where bedrock is shallow it should reflect bedrock geochem values in at least relative fashion. It could be that the organic "A" layer may be more useful in this area (except in the swamps), - or even biogeochem.

A sample taken by the writer along the main road at 9E Line 12S did not confirm an earlier sample, result being (#29) 52 ppm Cu in contrast to 4100 ppm Cu from the earlier sample. There is no explanation at present for this discrepancy. Also three other reported significant values, obtained from samples taken previously at intervals further SE along this same road, should be checked.

#### CONCLUSIONS

Results to date in percussion drill holes P.H. #5 & 6 are encouraging as they show moderately higher values than in the four percussion holes in the western area and, evidently, also the Phelps Dodge diamond drill holes in this same area and elsewhere. Also my soil samples #30 & 31 show values warranting follow up.

The entire area between 4E to 24E and 12S to 2N & further 'North' and 'NE' warrants methodical investigation. This also applies to possible extensions to the 'south'.

Normally it would be adviseable to first complete Induced Polarization and Magnetic surveys over this area before undertaking a further drilling program. However, there are real advantages in interpretation in having some drilling results available for calibration purposes.

# RECOMMENDATIONS

I have indicated on attached Map 2A my recommendations regarding the immediate drilling program and possible bulldozer trenching which can be tackled in conjunction with the drilling.

The basic plan is a combination of panel and advance scout drilling. The former provides a reasonable picture for interpretation and correlation; the latter, hopefully, will pick up other areas warranting panel type drilling. Eventually this combination will work into a grid drilling program where results warrant.

The initial panel drilling is in the panels of holes P.H. #5 & 6. The basic spacing in these is 600'. Diamond drill holes and percussion drill holes are each at 600' spacing but the distance between these two types of holes is 420' and 180', in the case of inclined diamond drill holes at 45°.

The scout holes are spotted at intervals of about 400' NS and 600' EW. These can be fitted eventually into a grid pattern.

The trenching recommended initially is directed toward exposing the presumed contact area between diorite and volcanics east of P.H. #5& 6. The major program, however, should be concentrated to the northeast and east of the diamond drill tripod in the meadow about the top centre of Map #2.

Present commitment regarding drilling will test the area in preliminary fashion. It is recommended that the results be fully appraised before further drilling is undertaken.

Tentatively recommended are Induced Polarization and Magnetic surveys over a minimum area about 4000' square or about 8 line miles @ 400' spacing.

A program of soil surveying in conjunction with the above should be considered. It should envisage some means of overcoming the problem of impervious boulder clay. Perhaps one should try biogeochem or, as an alternative, utilize a gasoline operated auger to take deeper samples. A silt reconnaissance program also should be completed on the entire property.

It is strongly recommended that a competent geologist be engaged to supervise the present drilling program, log the core and cuttings and to reconnaissance map the property as a whole.

# BUDGET REQUIREMENTS

I.P. and Magnetic survey will cost about \$5000 and additional grid \$1000, for a total of \$6000. Soil survey could cost about \$2000 if it proves to be effective. Provision for a geologist should be included. Preliminary budget of \$15000 should be considered for the geological, geophysical and geochemical phases of your program.

Respectfully submitted, G. A. DIROM BRITISH Gavin A. Dirom, P. Eng. GINF

Attachments