WGH/113/ub

September 12, 1975

Mr. A. Masson
Mr. R. Agenet
Mr. Ph. Samson

ADONIS ORE RESERVES

It was commissioned by Mr. Samson that there be an "in-house" evaluation of ore reserves on the Adonis property in the Summers Creek area, Princeton, B.C.

Reserves had previously been calculated by two consultants to the company. In 1970 P.W. Pringle using the ore intercept to waste intercept approach calculated:

West Zone:,	6.4 million @ 0.425%	Copper
South Zone:	41.0 million @ 0.32%	Copper
Adit Zone:	no estimate offered	

This is a very misleading ore calculation method. It has a tendency to give you a meaningless mineral inventory. No continuity can be presumed .

In 1973, D.C. Malcolm using the pit outline approach calculate

West Zone:	11.5 million @ 0.35%	copper
South Zone:	87.5 million @ 0.34%	copper
Adit Zone:	16.0 million @ 0.56%	copper
Mid Zone (?):	3.6 million @ 0.53%	copper

Malcolm also calculated an internal steep ratio. In discussic with Malcolm the following points emerged:

1. Since the report was issued in November 1973 (less than 2 years ago), he could not find among his files more than 2 sections upon which the ore reserves were based!!!

2. He did present me with a good amount of material but it was not organized. For instance, assay sheets had no hole or footage markers on them. In many cases the assay figures were meaning-less.

3.   There were no typewritten drill logs from 1970 on. Those that I received were either pencil-written originals or Xerox copies of pencil-written logs. In many cases the assays and geological data were indeciperable.

Malcolm's pit approach is standard practice if there is a grid-oriented approach in the drilling. In the Adonis case the drilling has not been standardized but adopted to suit the topography. This leaves many gaps or crowding on certain sections. Malcolm's reserves fall into this trap.

In calculating on each section he does not utilize the ore intersection geometry. He uses the ore and waste drill intercepts and the ore and waste trench work on the section. He groups ore intercepts to get the ore grade of the zone. The waste intercepts give him the low grade and allow him to calculate the strip ratio. Excavation tonnage is evidently calculated from the pit outlines with the strip ratio being brought into play to calculate the ore tonnage and the waste tonnage.

When the writer approached the problem I decided to use the standard mine ore reserve approach. This is the geometrical outline of ore on plans and sections. It can be utilized directly as an underground ore reserves or if an open pit is considered, then pit outlines need only be added to get the excavation tonnage. From this figure can be calculated the strip ratio.

The work took $4\frac{1}{2}$ days and required a good amount of drafting and calculations. The drafting is not sophisticated as I did it in a hurry. Work could not commence until the redrafted sepias had arrived from Princeton.

The approach was:

1.   Assume the general strike of the ore zone.

2.   Run up a longitudinal section on this strike line, vertically projecting all pertinent holes on to the section.

3.   Plot all ore intercepts of 0.20% copper grade on this section.

4.   Draw level plans and project bore hole on to levels. Influence on each level was 50' above and below. Inclined drill holes show point of level puncture and extension fro 50' above and below.

5. Outline ore zone on each level, being guided by ore and waste intercepts. Outline has been made simple.

6. Draw vertical sections at right angles to longitudinal section every 100 feet. Transfer ore zones outline from level plans on to sections.

7. Connect ore sections and calculate cubic footage per section.

8. Total sections and divide by factor of 12 (12 cubic feet = 1 short ton) for tonnage per ore body.

9. Grade is calculated by weighting all ore intercepts involved in tonnage calculations only.

Material from this work is being shipped to Paris.

The evaluation as done in Allison Lake on August 25, 1975, is a fast but rough approach. Oddly enough, the results closely approximated with my reserves.

The total Adonis reserves according to my calculations are:

43,875,000 short tons grading 0.302% copper using a 0.20% copper cut-off grade

The tonnage factor itself is not open pit classification. To be a porphyry style open pit the tonnage should approximate 100 million tons.

The Adonis grade of 0.302% copper is very marginal. This copper grade could be sustained if a by-product mineral such as molybdenum, silver or gold could up the copper equivalent to the area of 0.45 to 0.48% copper.

If mining properties were put into the following classifications:

A$\pm$ — Producing Mine (Good to Poor Producer)

B$\pm$ — Potential for a Mine (Good to Poor Potential)

C$\pm$ — Option (Good to Weak Potential)

then Adonis would be graded from B- to B.

I will comment further on this property in my next special report concerning acquisition and feasibility of the property.

W. G. Hainsworth, P. Eng.

ADONIS MINES

ORE RESERVES CALCULATIONS

Cut-off Grade: 0.20 % copper

Zone	Tonnage	Grade	Tonnage Calculations			Grade Calculations	
			Vert. Depth	# Level Plans	# Sections	# Holes Involved	# Ore Intercepts
South	30,025,000	.280	350'	4	22	28	28
West	9,170,000	.299	450'	5	12	21	24
Adit	4,680,000	.451	350'	4	8	28	23

Total   43,875,000 @ 0.302% copper
          short tons