



# METALL MINING CORPORATION

## MEMORANDUM

To: Ian Pirie  
From: Dave Heberlein  
Copies:  
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**Subject: Wolf Project Summary and Drill Proposal**

### Introduction:

The Wolf Property contains an extensive and well-documented epithermal Au occurrence. It was discovered in 1982 by Rio Algom Exploration Inc., following a regional lake sediment survey. Follow up prospecting, mapping, trenching and diamond drilling, in 1984 and 1985 resulted in the identification of three zones of epithermal alteration. Of these, the Ridge and Pond Zones, were found to contain significant gold values (2.90 g/t /12.0m and 2.67 g/t /8.3m). Trenching and systematic sampling, at the Ridge Zone by Lucero Resource Corp. in 1987 and 1988, delineated a 60 by 30m area of >0.5 g/t Au mineralization. This zone contains a higher grade interval of 2.69 g/t Au over a length of 26m.

Preliminary work by Minnova in 1991 confirmed the previous results and identified a shallow west-dipping breccia vein in the Ridge Zone trenches. Panel samples across this feature returned some impressive values, including 21.65 g/t Au /3m and 6.12 g/t Au /3m. Additional trenching in 1992, uncovered mineralized intervals assaying up to 2.69 g/t Au /23 m. High grade zones of hydrothermal breccia yielded assays of 7.70 g/t Au /7.5 m with individual grab samples running up to 78 g/t Au. Drilling at the Ridge Zone by Minnova in 1992, defined a mineralized

area approximately 300 by 300m in size that was initially interpreted to be a shallow, west dipping zone with an average thickness 9.7m with an average grade of 1.8 g/t Au.

As a result of detailed geological mapping and re-logging of the 1992 drill core, in 1993, we have revised our model for the Ridge Zone mineralization. The initial model of a shallow, west-dipping mineralized sheet has been rejected because it is inconsistent with several with key observations. These are:

- the presence of areas of strong silicification and veining in the hangingwall
- the apparent cross cutting relationship of the shallow dipping mineralized zone and steeply faults that offset the stratigraphy.
- the presence of steeply dipping IP anomalies beneath the Ridge Zone.
- alteration contacts (interpreted from drill sections) are consistent with steeply dipping structures rather than shallow ones.

Our new model satisfies all of these observations. We propose that epithermal alteration and mineralization at the Ridge Zone is controlled by sub-vertical, north-trending structures at the intersection with a major northeast fault (see 1:2,500 geology map). At least four north trending structures are now recognized at the Ridge Zone. They consist of upward flaring and horsetailing zones of pervasive silicification and quartz stockworking containing massive to bladed veins and/or hydrothermal breccia bodies. They are surrounded by a conspicuous envelope of argillic alteration, particularly in the volcanic and sedimentary host rocks (see cross section 973+00N).

The upward flaring pattern of the silicification is typical of volcanic hosted epithermal systems. However, at the Ridge Zone it is also partially controlled by lithology. In the volcanic and sedimentary rocks below the B porphyry sill, the silicified zones are coherent and regular in width (20 to 30m) with strong internal vein, stockwork and breccia development. In the overlying porphyry they tend to horsetail into numerous narrow zones (10 to 50cm wide) separated by unaltered rock. Good examples of these veins occur at the Lookout Zone. Mineralized veins in the porphyry are tight with usually only one or, at most, two stages of silica deposition and no breccia

development. Gold grades mirror this pattern. Highest values occur in complex vein, stockwork and breccia zones in the volcanic and sedimentary units below the porphyry. In the porphyry, gold values are much lower and sparsely distributed

A possible explanation for this contrast is the relative permeability and fracturability of these units. The volcanic rocks are intrinsically more fractured and have a higher permeability to hydrothermal fluids than the porphyry. Hydrothermal fluids are more easily able to permeate, alter, fracture and react with them. Fluid flow in the porphyry was confined to natural breaks such as joint planes and faults where there is little potential for hydrofracturing. Fractures tend to be healed quickly with silica thus preventing the introduction of gold by subsequent pulses.

The relatively impermeable porphyry may also act to focus fluid flow in the underlying rocks. The observed concentration of silicification and gold mineralization close to the lower sill contact supports this. If correct, this interpretation suggests that the best place to look for an economic target is in the volcanic and sedimentary rocks beneath the sill - particularly where potential feeder structures are indicated by surface silicification or IP.

#### **Biogeochemistry:**

Results of the biogeochemical survey are not as good as expected. The survey identified several moderate contrast gold anomalies. The most interesting is a 400m long north east trend that extends from a point 100m east of the Ridge Zone discovery pits to the eastern margin of the grid on line 979N. This trend shows up as a weak chargeability high and soil gold anomaly. It could be a significant target.

Another potential target is a two line gold anomaly situated on lines 980N and 982N, 400m due north of the Ridge Zone. This anomalies overlies a large chargeability feature that continues off the grid to the north. It will warrant some follow-up work this summer.

#### **1994 Drill Proposal:**

The IP surveys done in 1992 and 1993 along with our new geological interpretation of the Ridge Zone have generated several high quality drill targets. These are summarized on the 1:2,500 compilation map. Eleven drill holes are proposed to test these targets in 1994. These are summarized in the table below:

### Proposed 1994 Diamond Drill Holes

<b>HOLE</b>	<b>NORTHING</b>	<b>EASTING</b>	<b>DIP</b>	<b>AZM.</b>	<b>LENGTH</b>	<b>COMMENTS</b>
P1	980+00N	360+35E	-45°	090°	150m	Tests a coincident resistivity and chargeability anomaly that extend north from the silicified zone found in trench TR 92-06.
P2	973+00N	357+55E	-50°	090°	120m	Tests a north trending chargeability anomaly with coincident Ba X Br biogeochem anomaly.
P3	973+00N	362+60E	-50°	270°	200m	Target is a steeply dipping high resistivity and chargeability anomaly identified beneath and east of hole 92-13. Potential mineralized structure.
P4	972+00N	360+00E	-50°	090°	200m	Hole tests a north-south resistivity and chargeability anomaly as a potential mineralizing structure. Target is at the lower sill contact.
P5	969+00N	362+10E	-50°	270°	170m	Tests same resistivity-chargeability feature as P4, beneath Lookout Zone.
P6	967+00N	359+70E	-50°	090°	180m	Tests a coincident resistivity-chargeability at west end of Ba X Br biogeochem anomaly.
P7	965+00N	358+45E	-50°	090°	150m	Hole tests coincident resistivity and chargeability anomaly in argillic alteration at west side of Big Toe Zone.
P8	965+00N	359+10E	-45°	090°	175m	Hole tests a coincident , north trending resistivity and chargeability feature know as the Big Toe Zone.
P9	964+35n	358+60E	-45°	090°	120m	Alternate hole to P7. Tests the same anomaly 65m to the south.
P10	972+00N	367+20E	-45°	090°	150m	Tests a resistivity high east of the Pond Zone as a possible fault offset of the alteration.
P11	970+00N	366+90E	-45°	090°	130m	Tests the same anomaly as P10, where the resistivity and chargeability responses are coincident..