MINNOVA INC.

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COPIES TO: Alex Davidson

FROM: John Bradford

SUBJECT: **Monthly Report - June, 1990**
Adams - Barriere Regional Mapping

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1. Samatosum - Twin Mountain

Two days were spent on the Samatosum - Twin Mountain area, with no significant new developments. New geochemical data on the Sam mafics failed to indicate any differences in the EBG metabasalts from the Sam hangingwall to above the Tshinikin limestone. This supports my contention that this is a stratigraphically continuous sequence. Comparison with Trygve Hoy's data on the Rea mafics shows no differences in major oxide signatures, but a significant difference on immobile element plots with Zr and Ti. Overall, Sam mafics have lower Zr and higher Ti than the Rea footwall volcaniclastics. Immobile element analyses of Rea mafics by Min-En are in progress to see if this difference is real or analytical.

2. New Volcano

Interest in a silicified breccia horizon on the New Volcano property led to recce mapping of this horizon beyond the NV grid. It forms part of a sedimentary unit within EBG which has been traced from the South Barrier Lake road about 6 kilometres north to the East Barrier Lake road. The package includes prominent, hill - forming white to dark grey quartzite, which in places has irregular phyllitic partings suggestive of a highly deformed metachert. The quartzite locally contains abundant multiphase quartz veins, which are commonly gradational into the host rock. The package also includes marble lenses, which are locally intensely silicified, brecciated and resilicified, giving it an "epithermal breccia" appearance. In other places the marble is only weakly quartz veined. A graphitic argillite is locally exposed at the base of the package.

The siliceous breccia is probably a function of two things: first, the presence of original siliceous host rock, with *in situ* remobilization of silica in the quartzite, and silicification of adjacent carbonate lenses; second, the concentration of strain within EBG along mafic - sediment contacts. The zones are probably late, brittle Jurassic deformation features. Little sulphide is involved, and no samples returned significant results. The Kajun showing, near East Barriere Lake, is unrelated, occurring in a stratigraphically higher sedimentary package dominated by black phyllite.

3. Fennell Mapping

Reconnaissance mapping of the lower Fennell Formation began in June, with a view to re-assessing its potential for both Kuroko - type and Chu-Chua - type VMS deposits. This style of mapping, with compilation on a topo base at 1:10,000, complements existing grid mapping, rationalizing contacts on adjacent grids and placing units within an overall framework. To date, the area from the top of Bottrell Creek road to Chu-Chua Creek has been mapped, with the exception of some unlogged areas between Sprague Creek and Chu-Chua Creek, which are still under snow. The grids are generally still usable, with the exception of part of the SC north grid, which has been wiped out by recent logging.

Four lithological packages can be delineated on the basis of mapping to date. The lowest package (unit 1F1) consists mainly of diorite or diabase, with lesser chert and soft-sediment chert slump breccias. It appears to be economically uninteresting. Easterly facing directions were obtained in three exposures of the lower two units, contrary to established Fennell dogma: large-scale folding in the lower Fennell is a distinct possibility.

Higher in the section to the west is a diverse package including argillite, chert, greywacke (with a quartzose chert pebble conglomerate facies), intraformational breccias, basalt and diabase. Along strike to the south (Sprague Creek and the east side of the SC3 grid) is a maroon and green chert and siltstone unit (1F2). The latter is locally sulphide rich, contains 0.25% Ba, and is an unexplored, possibly prospective horizon.

Intraformational breccias appear to reflect a spectrum of processes, from *in situ* or very locally transported breccias of intercalated chert and argillite, chert and rhyolite, or argillite and greywacke, to genuine heterolithic debris flows, with poorly sorted clasts in an argillaceous matrix. Unit 1F2 breccias contain no felsic clasts. Pyrite clasts noted earlier by Dave Heberlein appear to me to be diagenetic in origin; some of the argillites within units 2 and 3 contain large diagenetic pyrite clots.

Unit 1F3, above and to the west of unit two, includes felsic volcanics with intercalated argillite and heterolithic debris flows, at least three mappable felsic intrusions, chert, and diorite. To date, drilling has concentrated on the felsic intrusions, leaving a lot of prospective stratigraphy untouched. Limited drilling in the intercalated rhyolite-argillite flank sequences has encountered interesting "sniffs" (e.g. 2.7 m of 0.23% Zn in Bar-17, or 4 m of 0.21% Zn in Bar-14).

A thick (300 m) diorite sill within unit 1F3 can be traced for 7.5 km from Bottrell Creek road to the SC2 dome area, where it appears to end. It has demonstrably intrusive upper and lower contacts; marginal assimilation of felsics has been seen in one place.

Another thick diorite sill lies above 1F3. The base of this sill may be structural, cutting out 1F3 felsic volcanics and chert to the north of Sprague Creek. It is overlain by argillite and chert of 1F4 which is locally very pyritic. Along strike to the north of the diorite sill is an area of poorly exposed basalt and diabase, where float of basalt cut by numerous pyrite - quartz stringers has been found. This area may represent a stratigraphic basalt - chert transition prospective for Chu-Chua type deposits.