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MEMORANDUM PETROGRAPHY OF SAMPLES FROM MOINA MINE

The following are descriptions of specimens collected by Geologist Robinson at Moina Mine:-

3 LEVEL MAIN X CUT 30' S OF SHAFT

Black medium to fine grained rock with pink veins and small patches of pale yellowish brown. The brown patches are of early origin because in them are fine black lines, while the pink veins cut across the black lineations in anastomosing veinlets.

In thin section the pink bands appear as granular masses of orthoclase with grains up to 5 mm. across, together with a little carbonate. The brown patches are much finer grained and contain sericite and felspar. The black material is magnetite in aligned masses of minute crystals. There are also occasional irregular small masses of grossularite in the brown patches.

6 LODE W DRIVE NEAR BREAKTHROUGH TO 6 LODE NW BRANCH DRIVE

Fine grained black rock with veins of quartz.

Thin section shows the specimen to consist of masses of fine grained sericite and chlorite with a smaller amount of quartz. Magnetite occurs in masses and strings of minute crystals which are arranged in wavy parallel lines as a result of plastic flow.

SKARN 1 LEVEL MAIN X CUT ABOUT 60' N OF CONTACT WITH QUARTZITE

Fine grained pale brownish rock with pink inclusions.

In thin section the specimen shows a granular texture with semi opaque material of high refractive index intergrown with material of low refractive index. In crossed nicols the highly refractive material is extinguished and shows the optical properties of garnet (grossularite), while the material of low refractive index shows low birefringence and gives a biaxial figure, and otherwise has the properties of felspar. The kind of felspar is difficult to determine optically, because of wavy extinction and the very irregular outlines of the grains.

1 LEVEL MAIN X CUT 10' OF SKARN/QUARTZITE CONTACT

Dark greenish fine to medium grained rock with fine quartz veinlets. Quartz grains are plentiful and there is a little disseminated pyrite.

In thin section the clastic nature of the

rock is apparent. Angular and rounded fragments of quartz and quartzite in a fine ground mass containing quartz, sericite, hornblende and epidote.

3 LEVEL 2 LODE 50' FROM END OF DRIVE

Quartz vein with selvedge in quartzite.

The vein contains chlorite and pyrite and a little chalcopyrite is disseminated through the quartzite.

In thin section there is little visible except quartz grains, patches of white opaque substances and occasional crystals of pyrite. The selvedge is probably due to a few scattered flakes of chlorite.

BLACK VEIN 3 LEVEL W DRIVE 2 LODE, ABOUT 50' FROM END

Dark fine to medium grained rock with very fine quartz veins.

In thin section consists of a mass of interlocking quartz grains about .01 mm. across with areas of larger grain size. Some sericite occurs with the quartz, but there are numerous patches of fine grained biotite, usually associated with opaque rods and needles which have a brownish colour in reflected light. Small black grains, possibly of magnetite occur with these rods, which may consist of leucoxene.

In any case the quantity of magnetite is small and the rock appears to be a recrystallised arenaceous sediment contaminated with basic igneous material.

1 LEVEL 6 LODE EAST

The pink mineral is orthoclase, the crystals are zoned and have cores of plagioclase and inclusions of quartz.

The green mineral is sericite. In small flakes it is uncoloured and has a high birefringence.

ALTERED TUBICULAR QUARTZITE ABOUT 50' FROM END OF DRIVE, 2 LODE W DRIVE 3 LEVEL

Greyish white rock friable, but somewhat more indurated than the preceding , with fine veins of pyrite.

In thin section the specimen is very much the same as the preceding. It is perhaps more uniform in texture and contains more sericite.

4 LODE WEST DRIVE 3/L

Light gray fine-grained rock with dark gray veins cutting it in three directions. The most numerous set are somewhat irregular but all have the same general direction. A second set cuts these at a low angle and a third set cuts the second almost at right angles. There is a trace of pyrite.

Thin section shows a very fine grained aggregate containing quartz and a biaxial mineral with a

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refractive index of about 1.63 and a birefringence higher than quartz that has not been identified. The veins contain quartz of coarser grain than the rock in general.

The microscopic characteristics of the rock do not appear to be inconsistent with its being a metamorphosed tubicular sandstone.

TUBICULAR QUARTZITE 1 LEVEL MAIN X CUT ABOUT 40' N OF 5 LODE

Fine grained friable white rock.

In thin section the rock shows fine irregular cracks. It consists of fine interlocking irregular quartz grains averaging about .01 mm. across with interstitial sericite and biotite and occasional opaque grains. There are irregular patches in the section which consist almost entirely of micaceous material.

(G. Everard)
MINERALOGIST AND PETROLOGIST

The Director of Mines,
Department of Mines,
HOBART.