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Vancouver DEC 8 1981 *Photography Ltd.*

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Sample: Alpine Basin Float

The sample assays 0.25 oz/T Au and 0.95oz/T Ag. (*Mut. Res. determination*)

The sample consists of an altered granodiorite to quartz diorite host cut by a braided vein dominated by chert. Pyrite and arsenopyrite are present in the chert and to a minor extent in the rock, although abundant hematite in the rock may have formed by replacement of pyrite. No native gold or silver minerals were identified. It is possible that values in these metals are associated with arsenopyrite, but that in the plane of the section no native gold was encountered.

A slice opposite the thin section is being sent to Chemex for analysis for Au, Ag, and As. This sample is labelled Alpine Basin Float.

John Payne
John Payne,
December 1981

Alpine Basin Float

Altered Granodiorite cut by Chert Vein (Py-Apy)

The rock is a very strongly altered granodiorite in which plagioclase has been completely destroyed and replaced by kaolinite-carbonate. Relic quartz is preserved in its original texture. Minor original K-feldspar is preserved. Mafic minerals are completely altered.

The rock is cut by a vein of cherty quartz which contains abundant fragments of the host rock. Pyrite and arsenopyrite are present in patches and disseminated grains mainly in the chert.

rock

plagioclase and mafic minerals? (possibly some K-feldspar)	
kaolinite	15-17%
carbonate	20-25
sericite	2- 3
quartz	15-17
K-feldspar	4- 5
hematite	2- 3 (possibly after pyrite)
Ti-oxide	1- 1½
chlorite	0.2
zircon	trace

secondary minerals

chert	35-40
pyrite	½- 1
arsenopyrite	0.2-0.3

The rock is a medium grained granodiorite to quartz diorite. Plagioclase is completely altered to extremely fine grained patches of kaolinite and very fine to fine grained patches of carbonate, probably siderite and/or ankerite (no reaction with dilute HCl, yellow solution with concentrated HCl). Sericite occurs as scattered patches of very fine to fine grained flakes, generally less than 0.07 mm long. No original texture is preserved in these aggregates.

Quartz forms grains from 0.2-0.7 mm in average size. These are anhedral in outline and appear in part to be interstitial to original plagioclase.

K-feldspar occurs as ragged grains up to 2 mm across, possibly partly altered to carbonate.

Hematite occurs in extremely fine grained patches, in part with minor inclusions of primary pyrite. Ti-oxide occurs in patches of grains up to 0.5 mm in size. These may be after original sphene.

No original mafic minerals were recognized. Possibly some patches of carbonate-kaolinite-hematite represent original mafic minerals.

Chlorite occurs locally as clusters of very fine to fine grains which are colorless and have a 1st order white interference color.

Zircon forms a few subhedral to euhedral prismatic to acicular grains up to 0.15 mm long.

Chert consists of an extremely fine grained aggregate of silica grains with interlocking borders. It contains scattered grains of slightly coarser quartz, which may be fragments of the host rock or part of the vein. As well, abundant fragments of altered host rock are present, represented by aggregates and grains of quartz, kaolinite, carbonate, and sericite. Some carbonate which is disseminated in very fine to fine grains may be related in origin to the chert vein.

Pyrite forms scattered anhedral to subhedral grains and clusters of grains averaging 0.03-0.1 mm in size, with a few up to 0.25 mm across. Arsenopyrite forms subhedral to locally euhedral rhombic to elongate grains from 0.03-0.1 mm in average size.