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This sample is characteristic of the upper basalt at Hellyer and west of the highway in the Placer holes (don't dob on me for saying so), being pillowed, strongly porphyritic primitive basalts with abundant mafic phenocrysts. The alteration, although apparently intense, is also typical of the pillow rims of such glassy and magnesian lavas.

SAMPLE NUMBER: 562246

SUMMARY:

This is a highly altered formerly augite+olivine+plagioclase -phyric basaltic lava breccia containing pyritic veining that has been partially overprinted by sphalerite mineralization associated with later calcite-dominated alteration and veining.

HAND SPECIMEN:

This sample is a brecciated basaltic lava with abundant calcite veinlets and small spots of bright green fuchsite, and abundant fine-grained disseminated and aggregated pyrite, particularly in one corner (fragment?) of the thin section.

THIN SECTION:

This is a texturally well-preserved formerly augite+olivine-phyric basaltic lava. It consists of around 15 modal% of totally altered augite, and probably 5-10 modal% of altered olivine phenocrysts, and about 5 modal% of elongate albitized plagioclase microphenocrysts in a microcrystalline to vitrophyric groundmass. The augite phenocrysts are replaced by dirty brown calcite, and are mainly well-formed euhedra to about 2mm long. Olivine phenocrysts are similar-sized and replaced by either very fine-grained polycrystalline quartz or the same brownish calcite that replaces augite, and much less commonly by pale green chlorite. They frequently contain small chromite inclusions.

The groundmass of this sample is charged with albitized plagioclase laths that vary from about 1mm long microphenocrysts to tiny microlites. The remainder of the groundmass was probably composed of tiny augite plates and FeTi oxide grains with interstitial glassy mesostasis. Common angular holes are filled by pale green chlorite identical to that replacing olivine.

Although calcite veins are not uncommon in the sample, the pyrite mineralization appears to be related to streaky zones of silicification and recrystallization in a single basalt fragment in the rock in which chlorite is much reduced in abundance relative to the remainder of the sample. Reddish sphalerite, however, is clearly related to the calcite