

**SAMPLE NUMBER: 431575**

**SUMMARY:**

This is a volcanoclastic sediment derived from a mixed basaltic lapilli - felsic lava source; it has suffered intense carbonate alteration with minor pyrite crystallization or recrystallization during the carbonate alteration.

**HAND SPECIMEN:**

This is a pale grey polymict strongly calcite-sericite-altered volcanoclastic sediment or lava breccia with fragments to several cm long. Most fragments appear to be fine-grained felsic lava. Bright green chlorite or fuchsite is a notable and not uncommon alteration phase.

**THIN SECTION:**

This sample is intensely calcite-altered, with most of the original texture completely obliterated by the alteration. However several small areas have original textures preserved. In these, it seems that the sample was a volcanoclastic sediment or vitric tuff, lacking detrital quartz (primary or secondary), but composed mainly of strongly altered basaltic lapilli and slightly flattened fragments of highly vesicular altered basaltic lava. Several perfectly euhedral red chromite microphenocrysts are present, supporting the textural indication that this material was originally basaltic. A few small clasts composed almost solely of very fine-grained saccharoidal quartz could be silicified felsic lava fragments. Disseminated small pyrite grains are common in the sample, and are associated with the calcite alteration, which is pervasive, and appears to post-date an alteration event in which much of the matrix of this sample was altered to very fine-grained silica. A single half centimeter-sized concentration of very fine-grained pyrite grains is seen to be a core cluster of intergrown pyrite euhedra with strong quartz-chlorite pressure fringes passing out into fine-grained quartz-chlorite-calcite riddled with tiny pyrite grains.

This sample is a polymict volcanoclastic sediment containing a mixed basaltic and felsic component, that has been intensely carbonate  $\pm$  minor pyrite altered .