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REPORT CMS 84/8/12

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SAMPLE NOS.: 315713 - 315721
SUBMITTED BY: A.M. Hesper
WORK REQUESTED: Petrology

Done for

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H.W. Fander, M. Sc.

REPORT CMS 84/8/12

Nine drill core samples from drill hole MC-8 were received for petrological examination. Representative thin-sections were prepared, examined in transmitted light and, together with their respective cobaltinitrite-stained offcuts, in oblique incident light. Attached tabulated descriptions summarise the microscopic data and include interpretative comments.

Summary

All nine samples represent extensively altered volcanics and are interpreted as lavas in the absence of pyroclastic features. The drilled sequence as sampled comprises leuco-andesitic and dacitic rocks, overlying relatively felsic (rhyodacitic-rhyolitic) types with a "basal" sodi-potassic trachyte. As is typical in altered volcanic sequences, the primary composition variations are largely extrapolated from relict features and, to a lesser degree, alteration trends.

The leuco-andesitic rocks are flow-brecciated types and could be classified as clastic lavas ("tuff lavas"). Differential alteration of matrix and clast lava components, with the matrix typically relatively altered and (pyrite-) mineralised, enhances these rather subtle breccia textures on a mesoscopic scale. "Rhyolites" are in part similarly flow-brecciated, but elsewhere the mesoscopic breccia-like appearance of these rocks reflects the alteration pattern which is partly controlled by devitrification-induced cracking patterns. Dacitic rocks and the trachyte are relatively texturally massive homogeneous types.

Sericitisation and partial silicification are the major alteration effects, with more or less ubiquitously associated very fine pyrite. Accessory phases include cloudy epidote, sideritic carbonate and chlorite, with localised concentrations of barite and fluorite. Sphalerite appears in a few rocks variously associated with quartz-muscovite or quartz-albite veinlets and elsewhere, possibly as a result of remobilisation, in late (but pre-tectonic) quartz veinlets. Quartzo-feldspathic veinlets grade locally into sulphide-barren albitic types.

The observed sulphide assemblage in these rocks is simple, at least as defined by stereobinocular examination of the thin-sections. Individual samples may warrant mineragraphic examination on the basis of assay data.

D. Cowan, B. Sc.

Sample No.	Classification - Composition	Fabric	Accessories	Comments
315-713 (T.S. 51108) 35.8 m	<u>Altered Andesite</u> . Frequent sericitised plagioclase, minor chlorite-quartz-pseudomorphed amphibole phenocrysts in a thoroughly sericitised/weakly silicified felsitic groundmass. Minor amygdales, veinlets of fine muscovite, quartz	Weakly flow-structured "andesitic". Groundmass variously perlitic-felsitic to micro-litic-subtrachytic.	Conspicuous fine leucogenised opaques, ultra-fine pyrite in groundmass. Patchy chlorite intergrown with sericite	- Strictly a flow-breccia with perlitic-felsitic, millimetric-scale lensoid clasts (pale in hand specimen) in a microlitic/relatively chloritic lava matrix. Minor late albite veinlets.
315-714 54.0 m	<u>Altered Andesitic Breccia</u> . Clasts, zones of extensively sericitised perlitic porphyritic (leuco-)andesite. Matrix of silicified/sericitised microlitic andesite, impregnated with stringers of fine pyrite, cloudy microcrystalline epidote. Sporadic late albite veinlets.	Analogous to 315713, but with coarser random irregular clasts. Incipiently sheared.	Leucogenenic fine pyrite in clasts. Sporadic siderite-quartz-pyrite veinlets. Minor muscovite quartz amygdales.	Close affinities with 315713. Relatively coarse, weakly flow-structured lava breccia with the matrix lava semi-selectively silicified/pyritised marginal to the pyritic stringers.
315-715 96.4 m	<u>Altered "Dacite"</u> . Clasts, zones of thoroughly sericitised, sideritic carbonate-stained porphyritic lava. Ill-defined pyritic, sericitic cherty quartz matrix grading into irregular and discontinuous veinlets of barite with marginal films of siderite, conspicuous pyrite.	Randomly sorted, weakly dimensionally orientated irregular clasts; vugs, corrosive matrix. Incipiently sheared.	Minor clots, films of quartz, fine muscovite, fluorite in baritic vugs, veinlets. Semi-pervasive fine pyrite in clasts.	Brecciated/thoroughly altered dacitic or quartz-andesitic lava. Alteration trend is sericitisation/brecciation-silicification/barite(-pyrite-fluorite-muscovite-quartz) veining/siderite/stress.
315-716 121.2 m	<u>Altered Andesite</u> . Frequent albitised/sericitic-chlorite-stained plagioclase phenocrysts; pervasively sericitic-pyritic/weakly silicified feldspar-microlitic groundmass. Sporadic pyritic albite veinlets with disseminated patches of sphalerite.	Analogous to the "matrix" lava in 315-713, 714. Weakly flow-structured, incipiently sheared; weakly stressed veinlets.	Leucogenenic semi-opaques. Traces chlorite, semi-sericitic white mica, apatite in mineralised quartz-albite veinlets.	Moderately sericitised/silicified/albitised leuco-andesite, pervasively pyritic, but relatively so in vein-marginal zones. Textural/compositional affinities with 315713, 714.
315-717 149.6 m	<u>Altered "Rhyodacite"</u> . Sericite and generally subordinate microcrystalline quartz with pervasive fine pyrite. Abundant sericitised plagioclase, minor quartz, silicified K-spar phenocrysts. Patchy relics of perlitic-felsitic	Strongly porphyritic, perlitic devitrified pitchstone; vaguely ?flow-brecciated, relatively sheared.	Leucogenised opaques.	Sericitised-silicified-pyritised "rhyodacitic" volcanic. Detail obscured by shearing, but brecciation may reflect devitrification rather than flow-brecciation.
315-718 166.0 m	<u>Altered Pitchstone</u> . Sericite with K-feldspar subordinate to minor closely intergrown microcrystalline quartz; thinly disseminated sericitised feldspar, minor relict quartz phenocrysts. Conspicuous fine pyrite, concentrated in relatively sericitic films, "stringers".	Resheared sericitic slate. Relict felsitic perlitic pitchstone-like ts. with sporadic millimetric "clasts".	Disseminated leucogenised opaques.	Devitrified, thoroughly sericitised acid pitchstone. Reflects devitrification, cracking-controlled alteration, with "pseudoclasts" representing semi-selectively silicified zones.
315-719 169.4 m	<u>Altered Pitchstone</u> . Sericite with relatively minor microcrystalline quartz, disseminated to conspicuous fine pyrite. Minor sericite-pseudomorphed feldspar, relict quartz phenocrysts.	Analogous to 315718, but with sporadic millimetric to centimetric microtexturally heterogeneous clasts.	Leucogenised opaques; rare apatite.	Close affinities with 315718. In contrast, the "pseudoclasts" are supplemented by subtly texturally contrasting intraclasts, reflecting flow-brecciation.
315-720 221.7 m	<u>Altered Trachyte</u> . Frequent phenocrysts of weakly sericitic sanidine, sericite-pseudomorphed ?albite in a weakly sericitic/kaolinitic, pervasively pyrite-stained alkali feldspathic microlathic groundmass. Sporadic pyritic stringers, late quartz veinlets.	Porphyritic, incipiently flow-banded, locally subtrachytic. Weakly displacive, mildly stressed veinlets.	Leucogenised opaques, trace primary apatite. Traces epidote, apatite, sphene, sphalerite in quartz veinlets.	Moderately argillised-pyritised sodi-potassic trachyte with sporadic sericitic pyritic veinlets, stringers and late mildly stressed, weakly sphalerite-mineralised quartz veinlets.

