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REPORT CMS 87/5/20

YOUR REFERENCE:	Letter dated 14.5.1987
DATE RECEIVED:	19th May, 1987
SAMPLE NOS.:	378367 - 378376
SUBMITTED BY:	A.M. Hespe
WORK REQUESTED:	Petrology

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H.W. Fander, M. Sc.

REPORT CMS 87/5/20

Ten drill core samples from DDH/MC-19 in the Mt. Charter area were received for routine petrological description. Representative thin-sections were prepared, examined in transmitted light and together with respective offcuts in oblique incident light, with stain tests performed as warranted. Attached tabulated descriptions summarise the microscopic data and include interpretative comments.

Summary

As sampled, this drilled sequence is dominated by andesitic volcanics (lavas, lava breccias, lithic tuffs), with minor intercalated leuco-andesites, basalts and dacites.

Andesites exhibit an essentially normal range of textural variants, including massive lavas and breccias, including moulded, lithic fragmental- and cherty argillite-matrixed variants. One example (sample 378374) exhibits slumped-reworked characteristics, with a minor volcanomict-polymict sandstone matrix component.

Volcanics in general exhibit sericite-chlorite-carbonate-quartz-albite alteration assemblages, supplemented by pyrite and, locally, traces of sphalerite. Basal zones, as sampled, tend to exhibit sericitic quartz alteration "overprints". In detail, this assemblage is temporally near-contemporaneous with the pervasive assemblage and, as noted previously, tends to develop in relatively primarily porous lithologies, typically initially as an interclast matrix ("hydrothermal cement") and then progressively replacing clasts, in some cases compositionally selectively, but elsewhere essentially pervasively.

Relatively silicified rocks tend to pinkish mottled colourations, as previously noted, as are similarly albitic alteration-overprinted facies in the Que/Hellyer area.

Perhaps significantly, perlitic-devitrified andesites, which appear relatively abundant in the Mt. Charter area, are absent from this suite, at least as sampled.

D. Cowan, B. Sc.

Sample No.	Classification - Composition	Fabric	Accessories	Comments
378367 (T.S. 57981) 30.7	<u>Leuco-Andesite</u> . Albitised/sericite-stained to pseudomorphed feldspar phenocrysts, minor chloritised ferromagnesian (amphibole) microphenocrysts in a sericite-chlorite-stained/partially silicified felsic groundmass. Minor cherty quartz veinlets.	Porphyritic/trend glomeroporphyritic, flow-banded, felsitic.	Sporadic clots, minor amygdales of Fe-calcite. Leucoxenised opaques, minor traces of pyrite.	Devitrified, sericite-chlorite-albite-quartz-calcite-altered, flow-banded, felsic (leuco-)andesite. Colour variations reflect variable Fe-pigmentation (primary).
378368 80.0	<u>Andesitic Breccia</u> . Clasts of albitised to sericitised feldspar/weakly silicified-carbonated pyroxene-porphyritic, sericitised-chloritised felsite-groundmassed lava. Matrix of sericite-chlorite-calcite-stained micro-crystalline quartz.	Psammite to agglomerate grade, weakly flow-structured, semi-moulded lithoclastic. Corrosive matrix.	Leucoxenised opaques, rare pyrite. Minor chlorite and Fe-pigmented calcite amygdales.	Typical altered andesitic lava breccia. Pinkish mottlings reflect Fe-pigmented feldspar (primary), secondary carbonate, and corrosive quartz matrix.
378369 146.9	<u>Andesite</u> . Albitised to calcite-chlorite-pseudomorphed feldspar and chloritised ferromagnesian phenocrysts, minor quartz-calcite amygdales in a chloritic/partially silicified felsic groundmass.	Similar to 378367, but unbanded, relatively porphyritic, with a feldspar-microlitic semi-felsitic groundmass.	Leucoxenised opaques, sporadic calcite-quartz veinlets.	Similarities with 378367, but in detail exhibits andesitic rather than leuco-andesitic characteristics. Similarly altered, but relatively chloritic.
378370 189.4	<u>Amygdaloidal Basalt</u> . Frequent chlorite-calcite-pseudomorphed ferromagnesian phenocrysts, quartz micro-amygdales in a cloudy carbonate-sericite-chlorite-altered, feldspar-microlathic, chlorite-mesostasised groundmass.	Strongly porphyritic, micro-amygdaloidal, basaltic, with a phyllitic overprint.	Traces of chromite (concentrated in altered orthopyroxene phenocrysts). Minor cloudy epidote-selvedged calcite.	Thoroughly chlorite-carbonate-sericite-altered, relatively sheared/phyllitic micro-amygdaloidal porphyritic lava; distinct relict basaltic characteristics.
378371 222.5	<u>Andesitic Breccia</u> . Clasts of albitised/sericitic plagioclase-/sericite-calcite-quartz-pseudomorphed ferromagnesian porphyritic lava. Matrix of kaolin-illite-altered fine silty micaceous cherty argillite.	"Andesitic"-textured, sericite-quartz-altered, weakly felsitic clasts. Vaguely slumped, weakly tuffaceous pelitic matrix.	Leucoxenised opaques, cloudy microcrystalline saussuritic epidote (clasts). Minor pyrite, rare sphalerite.	Cherty argillitic matrix includes minor clastic quartz, altered feldspar and sericitic shard fragments. Typical subaqueous sediment-matrixed andesitic breccia characteristics.
378372 238.4	<u>Amygdaloidal "Dacite"</u> . Albitised/sericite-chlorite-stained plagioclase-, subordinate corroded quartz phenocrysts, chloritised amphibole microphenocrysts, quartz-calcite-chlorite amygdales, Sericite-carbonate-chlorite-altered felsic groundmass.	Porphyritic amygdaloidal, flow-structured, with an altered feldspar-microlitic to microlathic groundmass.	Leucoxenised opaques, minor weakly stressed, discontinuous calcite veinlets.	Texturally unusual (feldspar-microlathic) felsic lava. Leuco-andesitic/dacitic characteristics, with sufficient phenocrystal quartz to warrant dacitic classification.
378373 269.8	<u>Andesitic Breccia</u> . Clasts of sericite-chlorite-albite-quartz-carbonate-altered andesitic lava; minor albitised/sericitic feldspar grains with zones of silty-micaceous cherty argillite matrix, sporadic vugs of calcite.	Moulded to pelite/psammite to agglomerate grade, lithoclastic.	Leucoxenised opaques, minor, but semi-pervasive pyrite, minor traces of sphalerite.	Framework includes andesitic and subordinate, relatively silicified "leuco-andesitic" clasts; semi-hybrid, relatively moulded, subaqueous lava breccia characteristics.
378374 312.0	"Andesitic Breccia". Clasts of sericite-chlorite-altered andesitic lava with erratic marginal silicified zones. Matrix of sericitic shale with interspersed zones, lenses of quartzofeldspathic sericitic sandy pelite/argillaceous sandstone.	Lapilli to agglomerate grade lava clasts, slumped psammopelitic matrix. Weakly sheared/phyllitic.	Leucoxenised opaques, minor pyrite (concentrated in lava clasts). Minor muscovite flakes, carbonaceous pelite clasts (matrix).	Strictly a volcanomict sedimentary breccia. Exhibits lava clast-marginal silicification in contrast to selective alteration of felsic clasts in 378373.

