

PETROGRAPHIC AND MINERAGRAPHIC DESCRIPTIONS

BRIEF PETROGRAPHIC DESCRIPTIONS – JERVOIS PROJECT

SAMPLE NO: KGL 120193

LOCATION: Jervois Project

TYPE: Rock Chip

FIELD IDENTIFICATION: Meta-pyroxenite.

SECTION TYPE: Thin Section

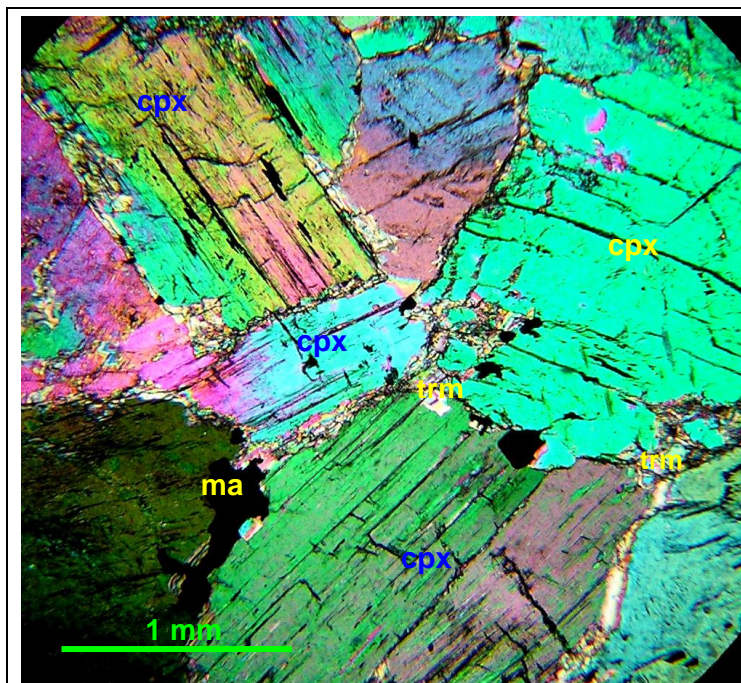
DESCRIPTION:

Clinopyroxene - diopside	96%
Amphibole - tremolite	3%
Opaques - magnetite	1%

A relict cumulate texture would appear to be present in the pyroxenite host that comprises a medium to coarse grained (up to 4 mm) mosaic dominated by clinopyroxene – diopside. Fibrous tremolite has developed around grain boundaries as a retrograde event. The cumulate texture is defined by the presence of accessory anhedral magnetite that locally rims the pyroxene grains.

Comments: The composition and texture of this lithology support a pyroxenite ultramafic intrusive origin. The lithology has probably been subject to high grade metamorphism although this is somewhat masked by the pyroxenite composition. Tremolite rims pyroxene as a retrograde event

CLASSIFICATION: *Metamorphosed pyroxenite interpreted to represent an ultramafic intrusive.*



Sample 120193

A possible relict cumulate texture occurs in the pyroxenite host dominated by clinopyroxene – diopside (cpx). Tremolite (trm) has developed along grain boundaries as a retrograde alteration phase. Anhedral magnetite (ma) occurs along the grain boundaries and would appear to support a possible relict cumulate texture. Crossed polars. Field of view – 3 mm.

SAMPLE NO: KGL 120194

LOCATION: Jervois Project

TYPE: Rock Chip

FIELD IDENTIFICATION: Weathered medium grained gneiss – possible calc – silicate.

SECTION TYPE: Thin Section

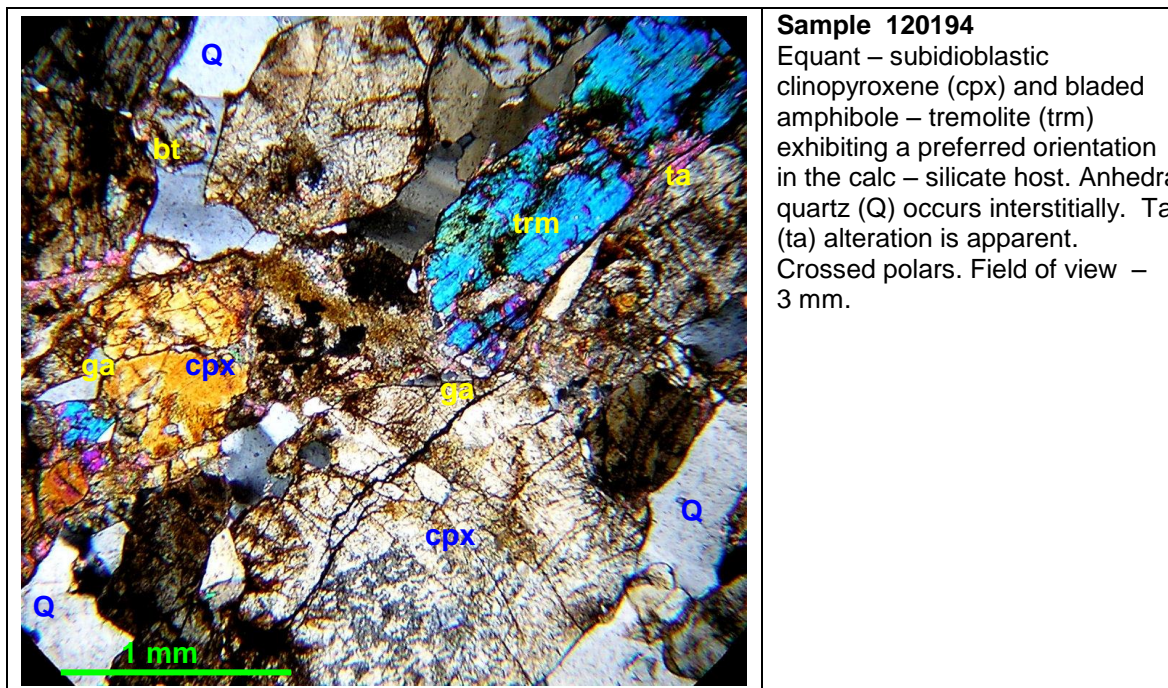
DESCRIPTION:

Quartz	37%
Clinopyroxene - diopside	52%
Amphibole- tremolite	8%
Talc	3%

A gneissic texture, apparent in hand specimen, comprises medium grained equant to subidioblastic clinopyroxene – diopside and subordinate, bladed tremolite paralleling a preferred (gneissic) orientation. Anhedral to granoblastic quartz occurs interstitially. Both clinopyroxene and amphibole have been incipiently altered to fibrous to scaly talc (confirmed by PIMA analysis). Limonite has penetrated microfractures in the pyrobole component in the weathering profile.

Comments: The distinctive diopside – tremolite – quartz composition is consistent with a calc-silicate (skarn) assemblage stable under regional amphibolite facies metamorphism. The pyrobole component has been incipiently altered to talc as a retrograde event. There is no evidence of associated mineralisation.

CLASSIFICATION: *Calc – silicate assemblage with a diopside – tremolite – quartz composition stable under amphibolite facies regional metamorphism.*



SAMPLE NO: KGL 120196

LOCATION: Jervois Project

TYPE: Rock Chip

FIELD IDENTIFICATION: Weathered, medium grained gneiss – possible calc – silicate.

SECTION TYPE: Thin Section

DESCRIPTION:

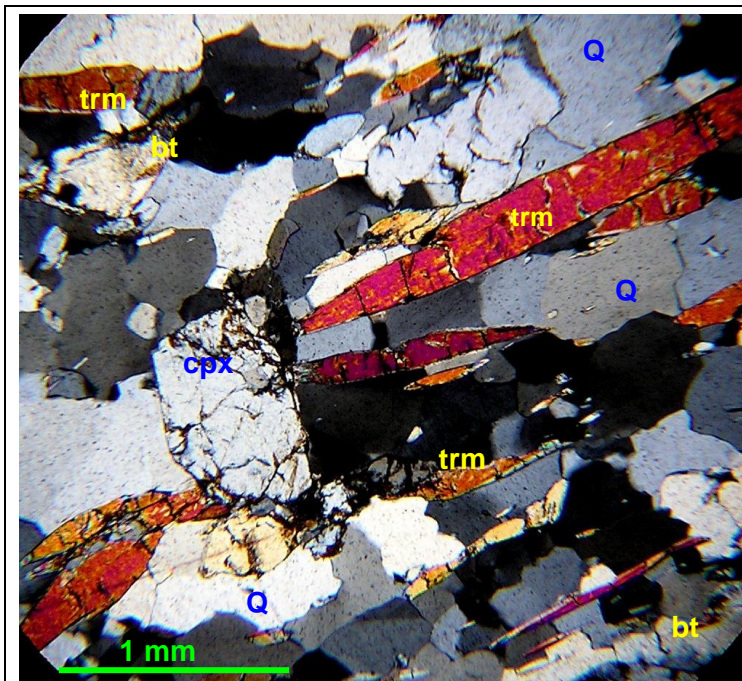
Quartz	87%
Clinopyroxene - diopside	5%
Amphibole- tremolite	8%

Broadly similar to Sample KG: 120194 where the calc – silicate assemblage comprises oriented bladed amphibole – tremolite and subordinate subidioblastic clinopyroxene – diopside in a quartz matrix. The quartz matrix comprises an anhedral mosaic – granoblastic texture containing fine oriented blades and needles of tremolite.

Limonite has penetrated microfractures in the pyrobole component in the weathering profile.

Comments: The distinctive tremolite – minor diopside - quartz composition is consistent with a calc-silicate (skarn) assemblage stable under regional amphibolite facies metamorphism. There is no evidence of associated mineralisation.

CLASSIFICATION: *Calc – silicate assemblage with a tremolite – minor diopside – quartz composition stable under amphibolite facies regional metamorphism.*



Sample 120196
 Oriented bladed tremolite (trm) and minor equant – subidioblastic clinopyroxene (cpx) occurring in the granoblastic quartz matrix of the calc – silicate host. Crossed polars. Field of view – 3 mm.

SAMPLE NO: KGL 120206 PA

LOCATION: Jervois Project

TYPE: Rock Chip

FIELD IDENTIFICATION: Weathered medium grained gneiss – possible calc – silicate.

SECTION TYPE: Thin Section

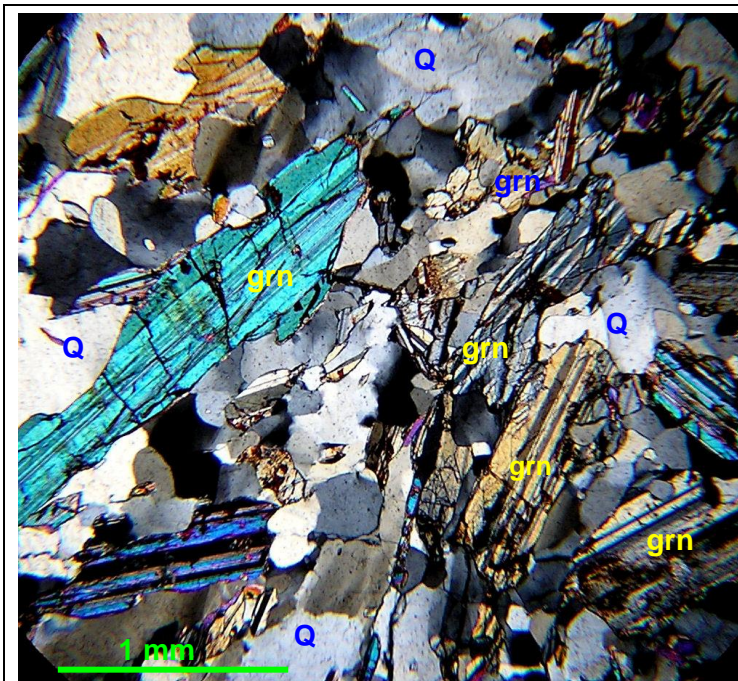
DESCRIPTION:

Quartz	78%
Amphibole – grunerite?	22%

Distinctive, polysynthetically twinned, bladed to subidioblastic, fine to medium grained amphibole – grunerite(?) occurs in a quartz matrix. The bladed amphibole exhibits a decussate to weakly oriented texture. The quartz matrix comprises an anhedral mosaic – granoblastic texture. Limonite has penetrated microfractures in the pyrobole component in the weathering profile.

Comments: The distinctive amphibole-grunerite - quartz composition is consistent with a calc-silicate (skarn) assemblage stable under regional amphibolite facies metamorphism. The presence of grunerite is consistent with a relatively Fe – rich composition. There is no evidence of associated mineralisation.

CLASSIFICATION: *Calc – silicate assemblage with an amphibole (grunerite?) – quartz composition stable under amphibolite facies regional metamorphism.*



Sample 120206 PA
 Bladed, polysynthetically twinned amphibole – grunerite (grn) (?) occurring in a granoblastic quartz (Q) matrix of the calc – silicate host. Crossed polars. Field of view – 3 mm.

SAMPLE NO: KGL 120206 PB

LOCATION: Jervois Project

TYPE: Rock Chip

FIELD IDENTIFICATION: Possible tremolite schist.

SECTION TYPE: Thin Section

DESCRIPTION:

Amphibole – tremolite	98%
Opaques - magnetite	2%

This virtually monominerallic rock exhibits no distinctive textures with medium grained amphibole – tremolite exhibiting a tightly packed texture that may be suggestive of a pyroxenite precursor. Minor anhedral magnetite concentrations can occur locally. Fine magnetite may also be dusted through portions of the matrix.

Comments: The dominance of tremolite may suggest the retrograde alteration of an ultramafic – pyroxenite precursor or a possible metamorphosed calc-silicate assemblage. The tremolite composition is confirmed by PIMA analysis (refer below). Distinctive textures are lacking and field relationships may be required to resolve the origin of the lithology.

CLASSIFICATION: *Monominerallic tremolite assemblage that may represent a retrograde altered pyroxenite or a possible calc – silicate assemblage.*

