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PETROGRAPHIC AND MINERAGRAPHIC DESCRIPTIONS

BRIEF PETROGRAPHIC DESCRIPTIONS

SAMPLE NO: MPPTS 2013 001

LOCATION:

TYPE: RC Chips

FIELD IDENTIFICATION: Gabbro containing magnetite.

SECTION TYPE: Polished Thin Section

DESCRIPTION:

Quartz	35%	Opagues (2%):
Potash feldspar - orthoclase	30%	Magnetite - dominant
Plagioclase	28%	Hematite - tr
Zircon	tr	Goethite - tr
Clay	5%	
Opagues	2%	

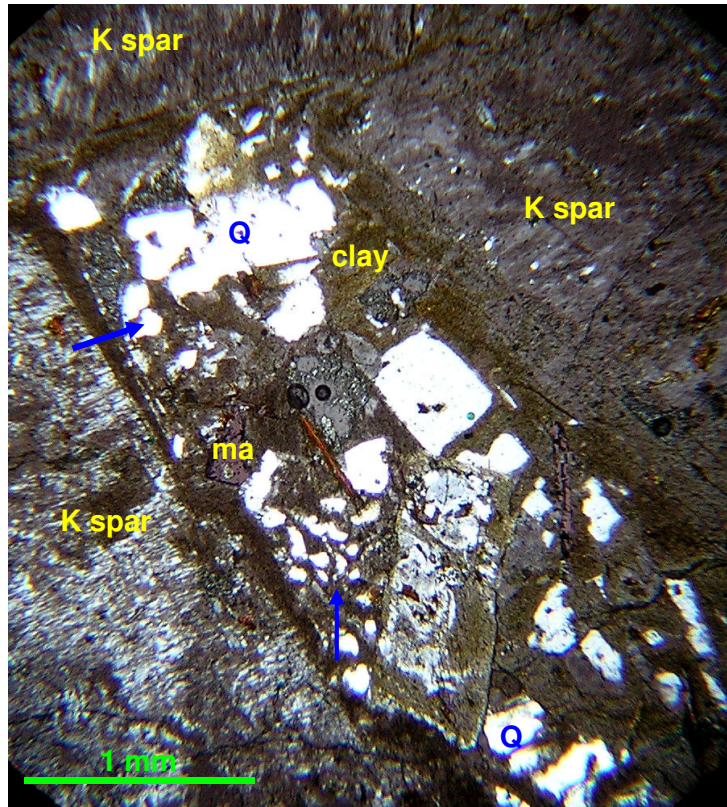
The coarse grained plutonic assemblage is dominated by granophyric quartz closely associated with plagioclase. Equant to tabular potash feldspar – orthoclase represents a significant component of the assemblage. The feldspathic component has been pervasively clay – dusted. Scaly to platy biotite locally rims an opaque phase – magnetite. A relict prismatic phase has been replaced by secondary quartz/chalcedony. Trace accessory zircon.

In reflected light, magnetite occurs as equant to tabular forms occur as an integral part of the granophyric matrix. Trace bladed hematite. Goethite has penetrated along fractures in the weathering profile.

Comments: The dominance of coarse granophyric textures classifies this felsic plutonic assemblage as a granophyre with a monzogranite composition. Minor magnetite forms part of the assemblage. The assemblage has been pervasively clay weathered.

PIMA ANALYSIS: Montmorillonite, opal

CLASSIFICATION: *Coarse grained felsic granophyre with a monzogranite composition. Magnetite forms a minor part of the assemblage that has been pervasively clay – weathered.*



Sample MPPTS 2013 - 001
Tabular potash feldspar (K spar) rims granophyric (arrowed) quartz (Q) associated with plagioclase in the felsic granophyre host. The feldspathic component has been clay – dusted. Accessory magnetite (ma). Crossed polars under reflected and transmitted light. Field of view – 3 mm.

SAMPLE NO: MPPTS 2013 002

LOCATION:

TYPE: Concentrate

FIELD IDENTIFICATION: Magnetite concentrate.

SECTION TYPE: Polished Thin Section

DESCRIPTION:

Clinopyroxene
 Opaques

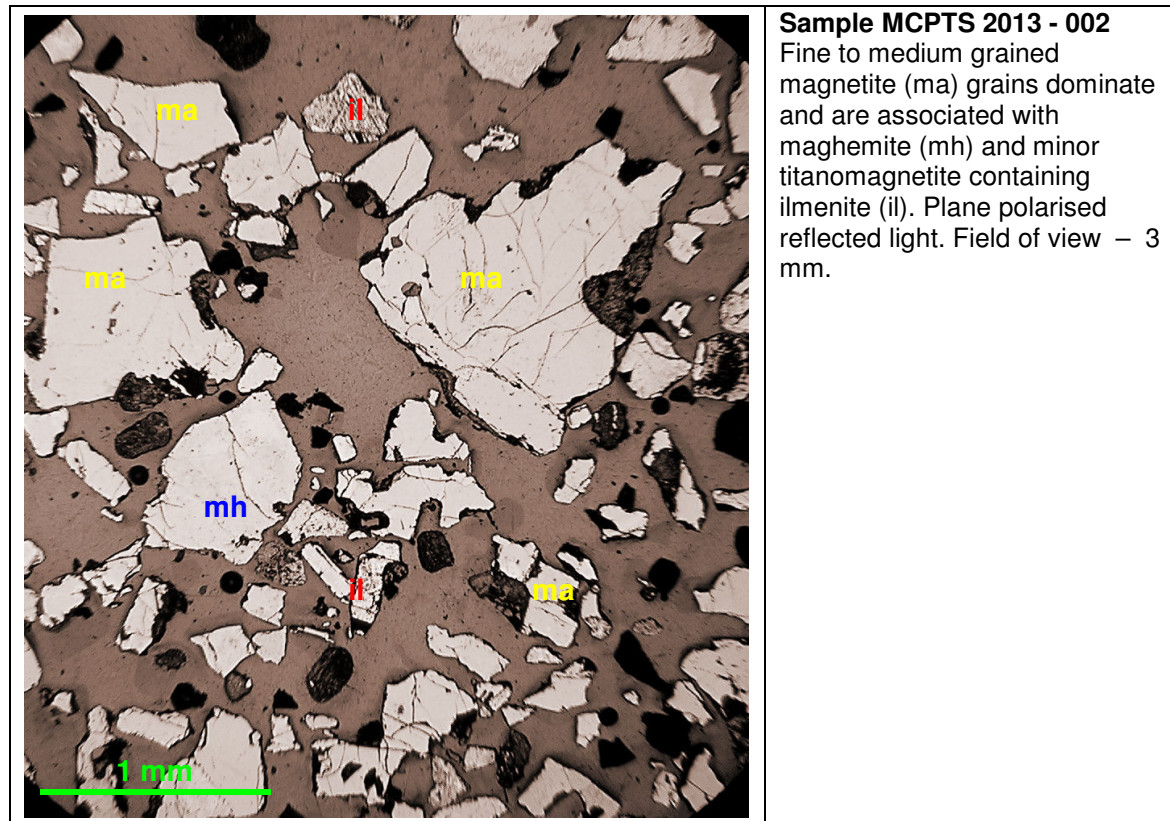
tr
 99%

Opaques (99%):
 Magnetite - dominant
 Ilmenite - minor (3%)
 Maghemite - minor (4%)

In reflected light, fine to medium grained, angular magnetite grains dominate. The grain sizes vary from 100 µm to 1 mm and include magnetite and titanomagnetite. Titanomagnetite contains minor ilmenite highlighting crystallographic axes in magnetite. Magnetite has been locally replaced by maghemite.

Comments: Both magnetite and titanomagnetite plus trace clinopyroxene in the matrix suggest a gabbroic source for the magnetite.

CLASSIFICATION: Magnetite concentrate comprising fine to medium grained magnetite, minor maghemite and minor titanomagnetite.



Sample MCPTS 2013 - 002
 Fine to medium grained magnetite (ma) grains dominate and are associated with maghemite (mh) and minor titanomagnetite containing ilmenite (il). Plane polarised reflected light. Field of view – 3 mm.
