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MINERALOGY – PETROLOGY · SECTION PREPARATION

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MINERALOGICAL REPORT No. 9794

by Alan C. Purvis, PhD.

October 21st, 2010

TO :	Korab Resources Ltd Attention: Andrej Karpinski PO Box 195 SOUTH PERTH WA 6151
COPY TO :	Mr John A. Earthrowl PO Box 219 BATCHELOR NT 0845
YOUR REFERENCE :	Email from John Earthrowl 21/9/10
MATERIAL :	8 RC Chip samples, Rum Jungle mineral field
IDENTIFICATION :	15546 to 15550, 17041 to 17045
WORK REQUESTED :	Section preparation, description and report with comments as specified.
SAMPLES & SECTIONS :	Returned to John Earthrowl with hard copy of this report.
DIGITAL COPY :	Emailed 21/10/10 to John Earthrowl: sildol@bigpond.com akk@iinet.net.au

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SUMMARY COMMENTS

Eight samples of RC chips described from seven polished thin sections and one thin section in this report are labelled 15546-15550 and 17041-17043, from two drillholes KORC10-001 and 002. These are from the Rum Jungle Mineral field Northern Territory and received from John Earthrowl on behalf of Korab resources 17/9/10. Assay data for S, Ti. V, Mn, Fe, Co, Ni, Cu, Zn, Pd, Pt, Au, Pb and U were provided for various intervals in these drillholes including these samples and these data are integrated with the petrology in the following summary.

Three samples (15546, 15547 and 15549) are highly altered metamorphosed mafic or ultramafic lithologies. Sample 15550 is a carbonaceous metasediment with pyrite and possible volcanic material. The other four samples are also metasediments with pyrite.

The altered (igneous) ultramafic samples (15546, 15547, and 15549) contain various proportions and combinations of chlorite, talc, carbonate, probable stilpnomelane, biotite, ilmenite, magnetite, and sulphides. The sulphides are pyrite, pyrrhotite, pentlandite and chalcopyrite in 15546, with pyrite and chalcopyrite in 15549 (sample 15548 was not polished). These chips average more than 16% FeO and about 2.25% TiO_2, as well as 900-1000 ppm Ni and 0.48ppm U. The Ti/V ratios vary from 70 to 100 and are the same as those of within-plate volcanics from eastern Australia. Textures indicate biotite and apatite-bearing probably alkaline mafic or ultramafic lithologies, with suggestions of former oikocrysts in sample 15547 (assays for Mg and Al may assist in the further classification of these samples).

The carbonaceous metasediment in sample 15550 containing pyrite and altered probable volcanic (olivine basalt) chips is intermediate in chemistry between the igneous samples and purely sedimentary samples. The olivine basalt chips contain pyrite and minor chalcopyrite, with chalcopyrite locally composite with pentlandite or covellite as well as possible galena.

Strong metasomatism has affected these samples, especially those with carbonate and talc or stilpnomelane.

A telephone conversation 18/10/10 with John Earthrowl indicated that some outcrop of these volcanics are unusually rich in carbonate, suggesting metasomatism involving possibly CO_2-rich fluids. General information on other carbonate-rich mafic and ultramafic rocks was also requested. In this author's experience, rocks rich in carbonate ± talc common for example in ultramafic bodies in Western Australia, have carbonate mostly either of magnesite or ferroan dolomite. Examples of carbonate-quartz assemblages (e.g. talc-dolomite quartz) require more

CO_2-rich fluids and/or lower temperatures, but most of these are magnesium-rich rather than iron rich, as seen in samples in this report. Moderately iron-rich mineralised carbonate veins and carbonate-rich ultramafic rocks (talc/anthophyllite-dolomite-quartz ± tremolite, albite, phlogopite and tourmaline) host some of the Ni-As-Sb-Au mineralisation at Mount Martin in Western Australia, some 40km southeast of Kalgoorlie. Anthophyllite from one ore-body sample has 18-19% FeO, more iron-rich than in unaltered komatiites, with ~15% FeO in biotite. Unusual siderite-rich altered komatiite from Mount Martin has 28% FeO, but low TiO_2 and high Cr. Carbonate in the Avebury mine, near Zeehan in Tasmania, is calcite accompanied by calc-silicate minerals hosting pentlandite, pyrrhotite and pyrite as well as Ni-As-S minerals, sphalerite and scheelite. The nearby Balstrup mine has galena and chalcopyrite as well as various Ni-As-Sb-Bi-S minerals in a siderite vein, suggesting input from an ultramafic source.

The metasediments in this report include cherts and shales with carbonaceous material and pyrite and report markedly different assays than the igneous ultramafic rock types, with less Fe, partly as pyrite (averaging 4-5%), as well as 5% FeO, 0.38% TiO_2, 98ppm Ni and 4.3ppm U. Ti/V ratios of 15-25 are also very different to those of the igneous samples.

Selected photomicrographs of the polished thin sections of 15546, 15547 and 15550 (including pentlandite in 15546) accompany their descriptions.

INDIVIDUAL DESCRIPTIONS

15546: KORC10-001, 60-70m	**Oxide-rich talc-chlorite-carbonate schist with apatite and sulphide: metamorphosed Fe-Ti-rich ultramafic?**

Assay data: 18% FeO, 1.9% TiO_2, 1330ppm Ni

These chips seem to represent massive fine-grained talc-chlorite-carbonate aggregates with disseminated inequigranular opaque oxide (ilmenite and possible chrome magnetite), partly lamellar, suggesting former biotite. There is also sparse sulphide as well as accessory granular to prismatic apatite to 1mm long. Carbonate is sparse, to 2mm in grainsize, in talc-chlorite schist with largely orange to green pleochroic chlorite. There could be very minor stilpnomelane in this thin section, but this is unclear. The sulphides include pyrrhotite-pentlandite aggregates ± chalcopyrite and separate pyrite to 0.7mm in diameter. Titanium is largely in ilmenite but the combination of high Fe, Ni and U (0.4ppm) is unusual, although the uranium may be in apatite. This sample may represent Fe-Ti-rich ultramafic material.

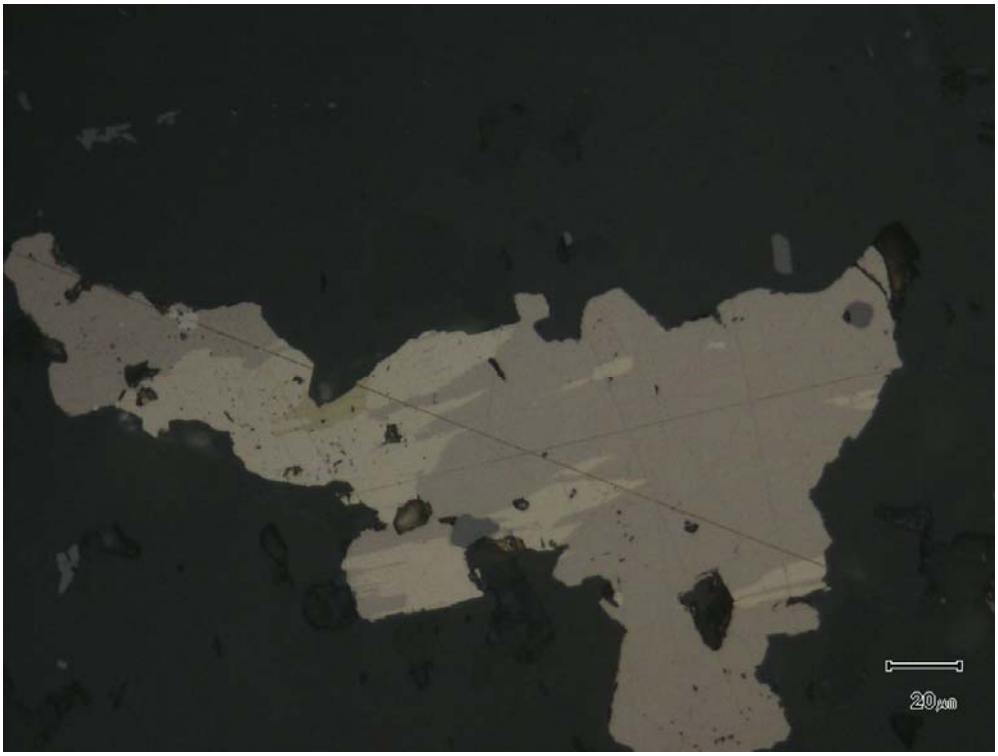


Fig 1 **15546**
Reflected light (RL)/polished section (PS). Magnification (x500). Composite sulphide grain of greyish-brown pyrrhotite incorporating cream coloured partly flame-like intergrowths of pentlandite, locally with sparse yellowish chalcopyrite.

Fig 2 **15546**
PS (x50). Small composite sulphide grains with yellowish chalcopyrite and (in this photo) slightly pinkish possible pentlandite, all as inclusions in pale pyrite host.

15547:KORC10-001, 80-90m	**Granular partly cumulus mafic/ultramafic rocks with possible talc and/or stilpnomelane as well as chlorite, carbonate, abundant opaque oxide and sparse apatite.**

Assay data: 15.9% FeO, 2.5% TiO_2, 754.5ppm Ni

One of the chips in this thin section has oxide-clouded talc-chlorite pseudomorphs of probable oikocrysts and areas of talc and carbonate apparently sieved by stilpnomelane as flakes and rosettes, suggesting cumulus grains to 1.5mm in diameter. The other chips seem to have been granular and contain sparse chlorite with lamellar opaque oxide ex-biotite as well as aggregates composed variously of chlorite, possible talc and/or stilpnomelane, carbonate and very minor quartz as well as accessory apatite as needles and small prisms. Some areas are rich in decussate fine-grained possible stilpnomelane and others have longer flakes and larger aggregates of the same mineral.

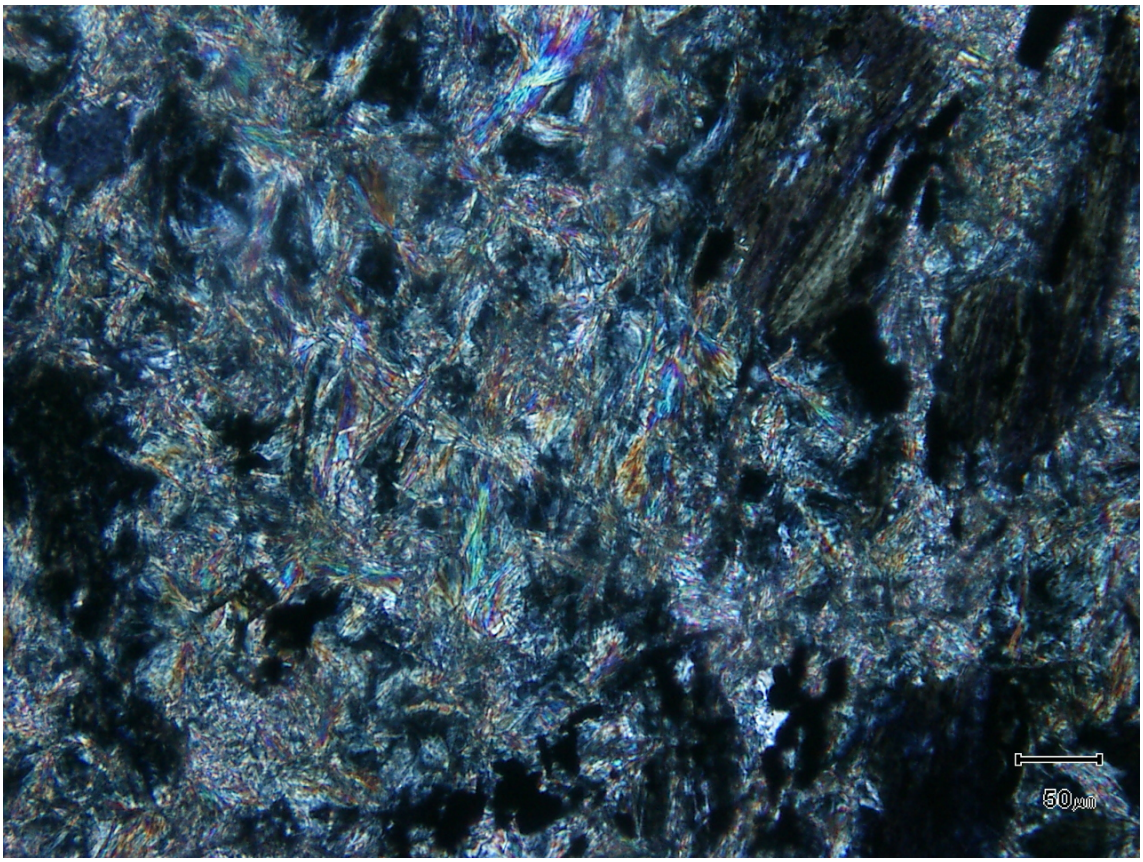
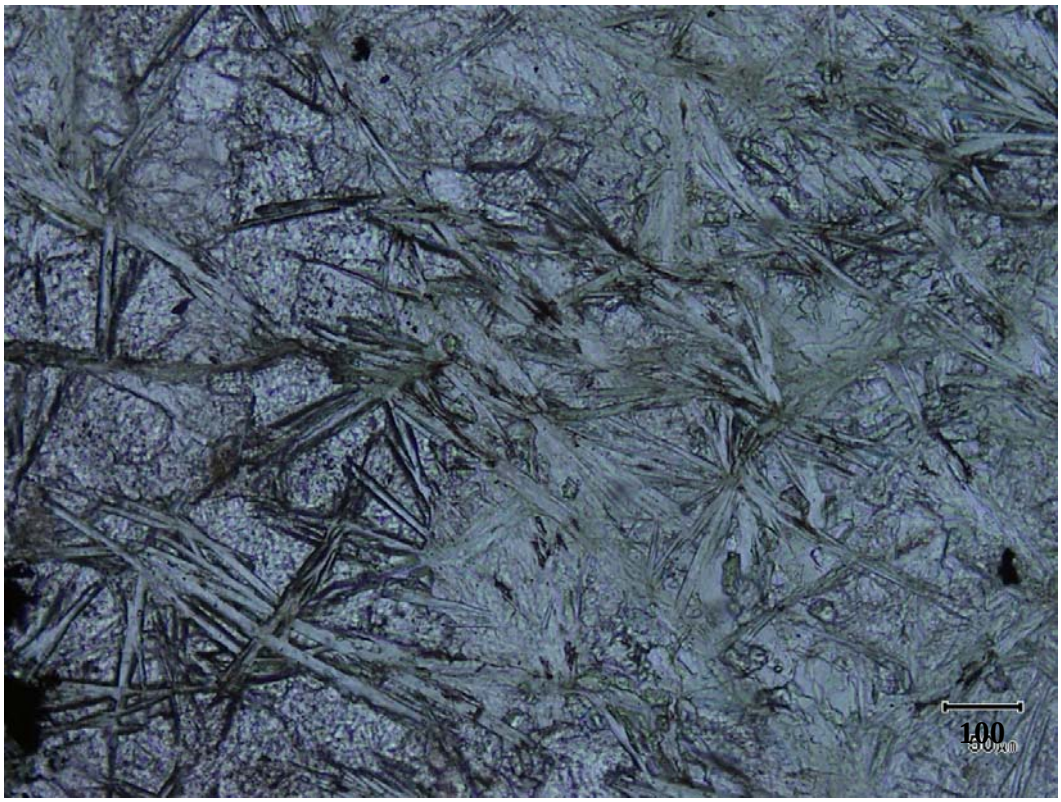
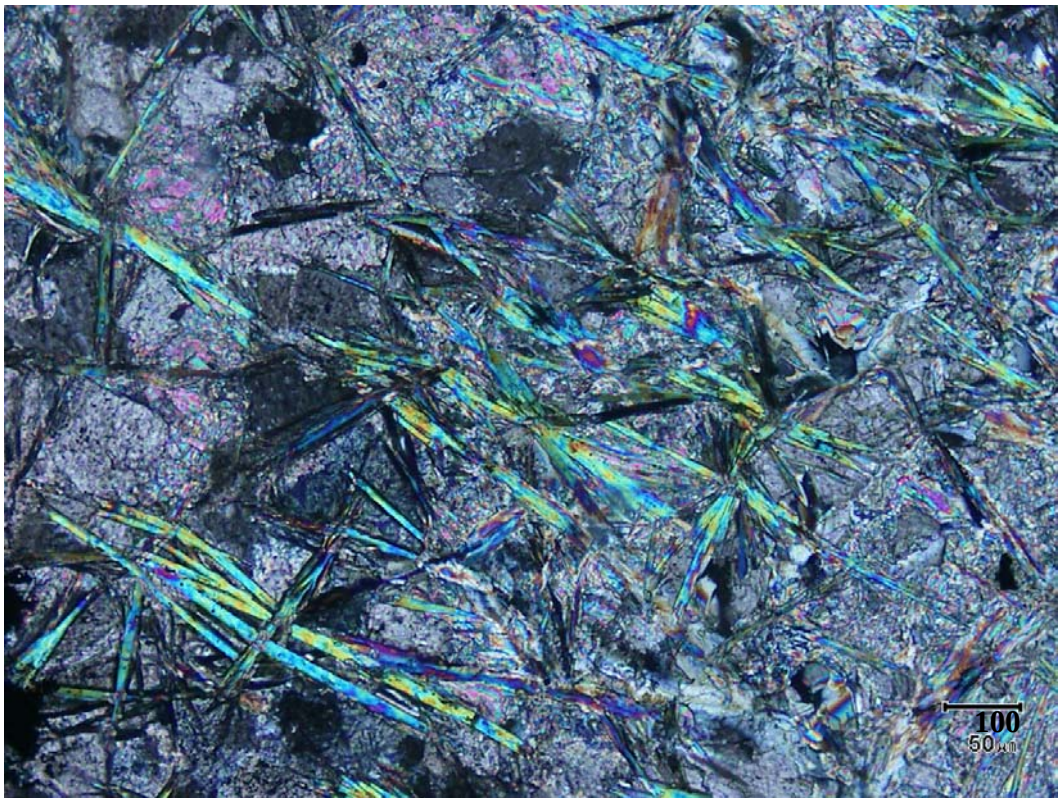


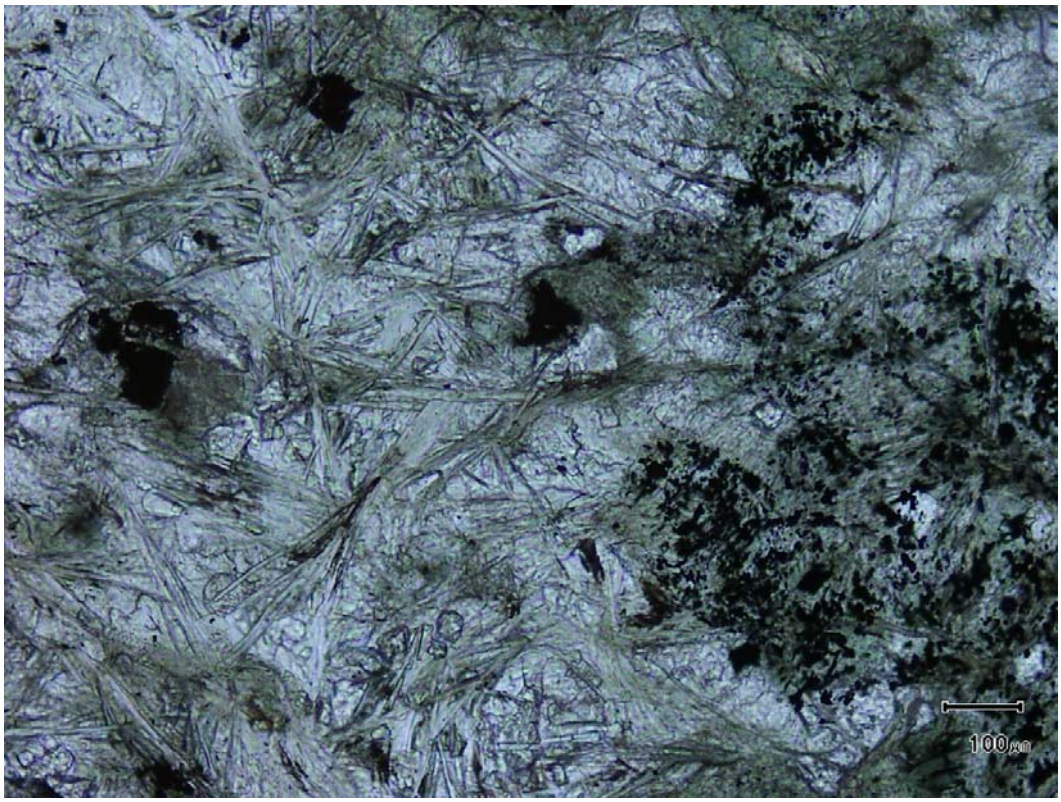
Fig 3 **15547**
Thin section (TS), crossed nicols (Xnic). Fine compact semi-decussate matrix of stilpnomelane (grey-bright colours), with scattered darker coarse chlorite.

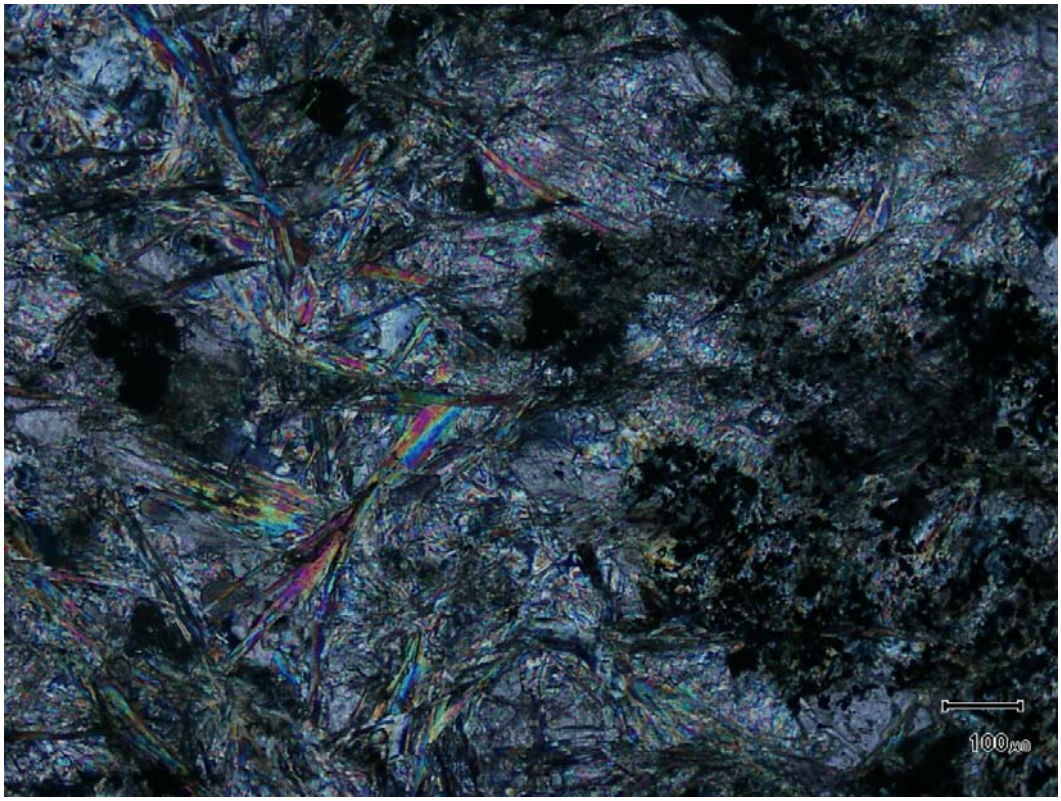




Figs 4 & 5 **15547** **100 µm**

Fig 4. TS. Ordinary light (OL). Same field Fig 5. TS Xnic. (x100). Random prismatic and decussate crystals of pale green stilpnomelane (bright in Xnic). In a matrix of much finer compact talc (pinkish in Xnic) and carbonate (paler grey-pink).





Figs 6 & 7 **15547**
Fig 6: TS. OL. Same Field Fig 7: TS. Xnic. (x100). Decussate pale green stilpnomelane in a matrix of much finer talc + minor carbonate.

15548: KORC10-001, 100-120m	**Quartz-chlorite schist chips and quartz-poor to quartz-rich carbonaceous chert ± pyrite (metasediments)**

Assay data: 8.2% FeO, 0.8% TiO_2, 152ppm Ni, and 2.1% S (average of 4 assays)

Chips of microcrystalline quartz and chlorite are present in this thin section as well as chips of quartz-poor and quartz-rich carbonaceous cherts with abundant coarse-grained pyrite in quartz-rich coarse-grained chert. The pyrite occurs in a zone 5mm wide on either side of a lens of quartz and minor carbonate. The carbonaceous material is enriched in uranium (~4ppm) compared to the mafic/ultramafic samples (mostly 0.4-0.5ppm).

15549: KORC10-002, 20-35m	**Chlorite-carbonate-(biotite-stilpnomelane)-oxide-quartz aggregates derived from a granular mafic/ultramafic lithology with accessory apatite and rare sulphide (pyrite > chalcopyrite).**

Assay data: 15.1% FeO, 2.34% TiO_2, 716ppm Ni, 0.55ppm U and 0.13% S (average of three assays)

These chips also contain lamellae chlorite-oxide aggregates derived from biotite as well as abundant oxide-free chlorite and granular carbonate and minor quartz, suggesting a former granular lithology. Most chips also contain second generation metamorphic biotite, not texturally related to the original igneous biotite, mostly fine-grained and decussate and partly in aggregates with decussate fine-grained possible stilpnomelane. Very fine-grained ilmenite is disseminated and in small aggregates and there is very minor possible chrome magnetite. Needles of apatite are disseminated and as much as 1mm long. Accessory sulphides include pyrite and chalcopyrite.

15550: KORC10-002, 48-57m	**Carbonaceous metasediment, carbonaceous quartz-chlorite schist with quartz veins and chlorite-carbonate-quartz-leucoxene-pyrite altered possible volcanics with a carbonate vein in one chip and sparse chalcopyrite ± pentlandite ± covellite with possible galena.**

Assay data: 11% and 7.8% FeO, 1.2 and 0.46% TiO_2, 260 and 81ppm Ni; 3.0 and 3.8ppm U (two assays)

A large chip of carbonaceous shale is present in this sample (low Fe-Ti-Ni values) and there is also a chip with carbonaceous lamellae in quartz-chlorite schist with layer-parallel quartz veins. The other chips have minor leucoxene/anatase (representing higher Fe, Ti and Ni values) as well as chlorite, carbonate and sparse or abundant quartz. The chlorite is mostly schistose with minor to abundant granular carbonate and, in two chips, lenses to 1.5mm long composed of microcrystalline quartz ± carbonate apparently derived from microphenocrysts, possibly olivine. Accessory to trace sulphides include pyrite, chalcopyrite and rare possible galena, mostly fine-grained but with pyrite to 1mm in grainsize. Some of the chalcopyrite in possible basalt chips is composite with pentlandite and some grains have rims of covellite. One of these chips has a carbonate vein parallel to the foliation.

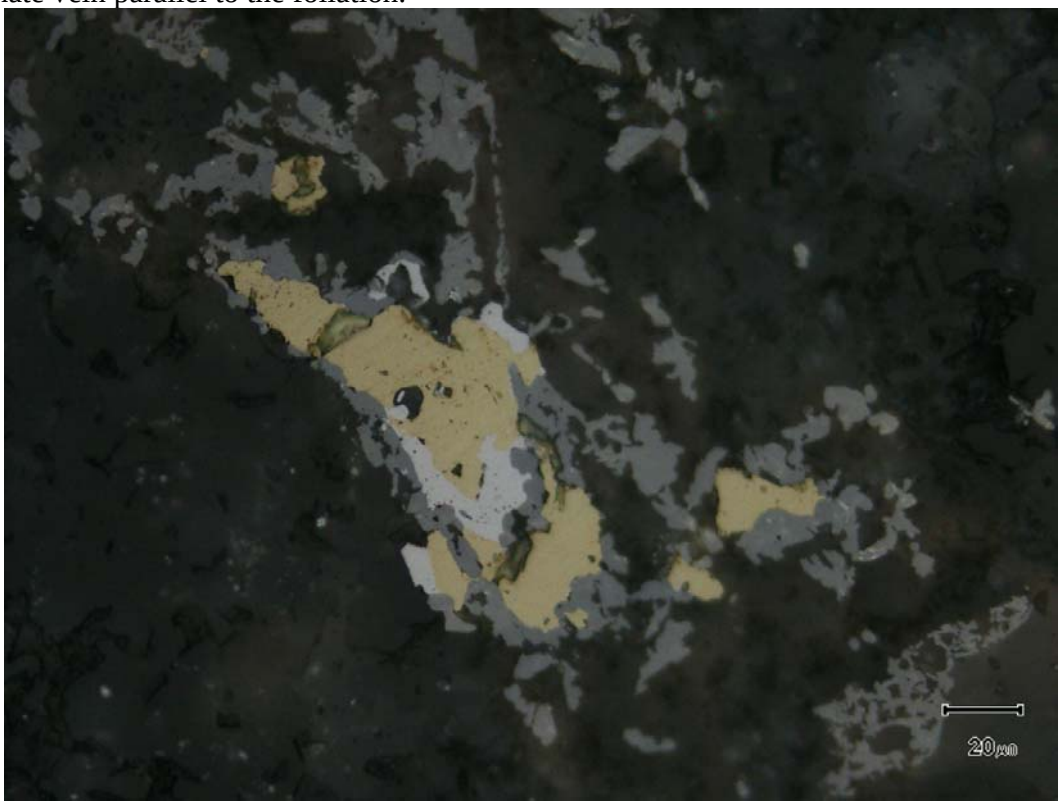


Fig 8 **15550**
PS (x500). Cluster of yellow chalcopyrite with white galena as inclusions and on rim. Dark grey irregular grains of anatase or rutile.

17041: KORC10-002, 80-85m	**Slate and carbonaceous metasediment with sericite, chlorite, quartz, irregularly disseminated pyrite and minor carbonate**

Assay data: 8.1% FeO, 0.55% TiO_2, 6.3ppm U and 3.27% S

These chips contain carbonaceous slate and chert, with sericite and/or minor to common quartz ± pyrite, and fine-grained quartz-sericite-chlorite schist with disseminated pyrite (as much a 10%) and carbonate. One chip is largely composed of vein carbonate with very minor fine-grained quartz and small angular fragments of carbonaceous metasediment.

17042: KORC10-002, 105-112m	**Carbonaceous shale, chert and sandstone with large masses of pyrite**

Assay data: 7.9% FeO, 0.58% TiO_2, 3.9ppm U and 2.5% S

These chips have abundant pyrite as large masses mostly enclosing quartz and carbonate or microcrystalline quartz and sericite in contact with laminated carbonaceous quartz-sericite-chlorite slate. One chip has pyrite in contact with, and enclosed in quartz-rich sandstone with subangular single crystal quartz grains from < 0.05mm to 0.5mm (silt to medium sand) in size in a matrix of sericite, quartz and possible carbonaceous matter.

17043: KORC10-002, 115-120m	**One chip of pyrite with quartz, carbonate and sericite-rich fragments in contact with carbonaceous chert: other chips are weakly or strongly carbonaceous shale.**

Assay data: 7.6% FeO, 0.64% TiO_2, 73ppm Ni, 4.1ppm U and 2.25% S

A large pyrite-rich aggregate in one of the chips in this thin section has inclusions of quartz and carbonate and patches of shale composed of microcrystalline quartz and possible sericite. This patch is in contact with contorted laminated carbonaceous chert. There are also chips of weakly or strongly carbonaceous shale with sericite, quartz and possible chlorite defining a planar foliation and sparse fractures with quartz, sericite and possible chlorite.