PRELIMINARY REPORT ON CONSULTATION

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TO

PLUTON RESOURCES LTD.

RE: CETHANA ANOMALY AREA, NW TASMANIA

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Executive Summary

This report assesses the potential for porphyry style deposits in the Cethana area held by Pluton Resources Ltd.

Limited drill core study (of CETD4, CETD3, DR1) reveals a paragenetic sequence of at least three important hydrothermal events, all of which are associated with sub-economic sulfide mineralisation. This suggests higher grade mineralisation of magmatic-hydrothermal origin may be found nearby.

A comparison with the Cethana project area reveals similarities with key features of selected economic porphyry deposits. These similarities are notably:

- Alteration mineralogy
- Potential size of the mineralising system
- Multiple hydrothermal events, incl. brittle structures in DR1
- Evidence for skarn (replacement type) mineralisation
- Type of mineralising hydrothermal fluids (oxidising and saline)
- Similar submarine magmatic setting

Notable differences are:

- Some key alteration minerals are absent where expected
- Lack of abundant (quartz-)veining, especially in CETD4, which is interpreted as an unfocussed fluid flow zone
- Lack of abundant vein-controlled alteration
- Lack of abundant sulfides

More geological information is needed to assess other critical factors:

- Structural and lithological controls on fluid flow
- Presence of depositional traps
- Nature of abundant iron-oxide veins and alteration

Recommendations for further work are:

- Construction of a hybrid mineralisation model using key features from porphyry, skarn and IOCG models, as this would fit the features of Cethana better than a ‘classic’ porphyry type
- Develop understanding of 3D distribution of faults, lithological contacts, skarns, and volcaniclastics containing mafic minerals, as these represent zones of high fluid flow and/or depositional traps, that allow drill targeting
- Test drill targets where zones of high fluid flow and depositional traps coincide. A simple analysis suggests that a porphyry may be closer to the surface at Cethana.

The mineralisation model is the basis for drill targeting and associated capital expenditure. Currently, it relies heavily on assumed timing relationships of magmatic and hydrothermal activity. Geochronological studies may help to provide robustness to the model.

1 Introduction

The Cethana prospect is located in the northeastern part of the Cambrian Mt Read Volcanic Belt in Northwest Tasmania. This belt is well known for its VMS-style base and precious metal mineralisation, as well as disseminated sulfide deposits such as Mt Lyell, which has been interpreted as an epigenetic high-sulfidation Cu-Au deposit.

A strong aeromagnetic anomaly within the Cethana area is interpreted by Pluton Resources as an intrusive body that could have sourced Cambrian to Early Ordovician porphyry-style mineralisation, coincidental to or shortly after the magmatic event responsible for the deposition of the Mt Read Volcanics.

Host rocks to the prospect area are felsic volcanics, lithic-containing and quartz-rich volcaniclastics, and local granites and granodiorites of supposed Cambrian age (no direct dating information available), Ordovician conglomerates and sandstones. Devonian granites elsewhere in the region are associated with skarn systems that produced Sn-W and other small mineral deposits and occurrences.

Inspection of the prospect area and drill core CETD1, DR1, DR3 and DEV2 led Corbett (2009) to conclude that the main hydrothermal alteration assemblages of the prospect area are:

- Magnetite-chlorite (outer propylitic), grading downhole into
- Magnetite-K-feldspar±biotite (potassic)
- Local garnet and hornfels, in deeper parts of hole

These features, coupled with the down-hole increase in occurrence of veins and breccias, and interpretation of veins being of the ‘D’ and possibly ‘M’ type (cf. reporting on El Salvador porphyry copper deposit, Chile), were suggested to indicate proximity to an intrusion at depth.

This study encompassed a four-day consulting visit to Pluton Resources' Cethana prospect area, conducted in mid-November 2010, with the following aims:

a. Compare geological features of Cethana and Five Mile Rise prospects with those of known porphyry Cu-Au deposits
b. Assess local controls on mineralisation
c. Assess potential for higher grade mineralisation
d. Recommend exploration focus

The visit consisted mostly of core inspection, supplemented by a short field visit for geological, geographical and historical context and inspection of hand samples and previous in-house and contract work.

2 Drill core results

Note: Accompanying photos are found in Appendix A.

DR1 (from Five Mile Rise) main paragenetic relationships:

- Down-hole gradation from chlorite-quartz alteration (Photo 1) grading into local zones that alternate between smaller selective to pervasive K-feldspar zones (Photo 2) and larger zones of pervasive to vein-controlled sericite-quartz±pyrite (Photo 3) alteration

- Crosscutting brecciation event that causes local tourmaline±sulfide flooding (Photo 3, 4), without consistent relation to K-feldspar or sericite alteration

- Later cross-cutting hematite±quartz±sulfide event throughout hole, which can form zones of sheeted (Photo 5) to massive veins (Photo 6), may re-open previously formed vein and breccia infills. Towards bottom of hole, associated sulfide in/around hematite-magnetite veins (Photo 7) and infill increases

- Hematite veins do not show apparent alteration haloes of sericite or K-feldspar (Photo 8), suggesting that this alteration is unrelated

- Latest quartz±sulfide veins and sheeted chlorite±quartz veins crosscut hematite veins (Photo 8)

CETD4 (from Cethana) main features and paragenetic relationships:

- Main alteration is quartz-chlorite-magnetite±epidote±pyrite (Photo 9)

- Fabric (supposedly metamorphic) intensity changes strongly in intensity down-hole in a non-systematic way (Photo 10 & 11)

- Recrystallised pyrite often parallel to fabric (Photo 12), sometimes crosscut by quartz veins (Photo 13)

- At least three generations of quartz±chlorite±magnetite±epidote veins, as evidenced by growth textures characteristic of pre-,syn- and post-metamorphism/deformation (Photo 14-16). Sulfide content of these veins is generally very low, is mostly pyritic, and occurs in pre-, syn-, and post-deformation veins.

- Crosscutting magnetite-sulfide±quartz veins near deeper parts of hole (Photo 17, 18), associated with an increase downhole of texture-destructive alteration with disseminated 'garnet'* alteration zone (Photo 19). Pervasive, texture-destroying alteration can be of chlorite-biotite (Photo 20) or chlorite-magnetite (Photo 21). Sulfide-bearing veins may crosscut these zones (Photo 22).

  * Garnet not confirmed by Pluton's petrographic report.

- Latest pink carbonate veinlet development (Photo 23)

- Limited evidence for fluidised breccias (Photo 24, 25)

CETD3 (from Cethana) interval around highest grade, main relationships:

- Pervasive biotite±magnetite alteration, with pyrite predominantly occurring as fabric parallel stringers of disseminated grains, within stringers of silicification±sericite (Photo 26)

- Veins of quartz-magnetite±sulfide crosscuts biotite zone (Photo 27, 28)

- Sulfide-biotite veins that introduce silicification and sericite crosscut fabric (Photo 29)

- Latest pink carbonate event, crosscuts all features (Photo 26)

- Limited evidence for fluidised breccias (Photo 30)

Grab samples and short inspection of DR3 showed strong K-feldspar, sericite and late chlorite alteration of porphyrytic and equigranular subvolcanic rocks, and some volcanics (Photo 31-33). In old mine working and other grab samples collected by Pluton, hematite replacement zones are commonly seen (Photo 34, 35).

3 Discussion

The aim of this discussion is to understand to what extent there is evidence for a porphyry type mineralising system and address the initial aims of the report. We revisit the characteristic features of selected deposits first for contextual understanding.

Comparison with Lachlan Fold Belt (LFB) economic porphyry deposits

The Northparkes deposits are described in detail by Lickfold et al (2003). They consist of a number of subvertical monzonite to monzodiorite plugs and dykes intruded into a submarine volcano-sedimentary package of shoshonitic basaltic andesites to andesites. A complex series of pervasive-selective and vein-controlled alteration events resulted in assymmetricaly zonation around the intrusions, limited to a 750m aureole surrounding the plugs. Typically, the zonation is outer propylitic (characteristic epidote and chlorite) to magnetite-biotite (within 200m of plugs) to potassic (K-feldspar ± magnetite). Gold-copper mineralisation (erraticly distributed grades of 0.5-4 g/t Au and 0.5-4% Cu on 2m composites) is within or directly adjacent to the plugs in the wall rock, consisting of stockwork veins of quartz-sulfide-K-feldspar and quartz-sulfide-anhydrite. There are minor skarns and base metal veins distal to the intrusive centers.

The Cadia deposits are described in detail by Holliday et al (2002). They are situated along a 7km long zone of hydrothermal alteration related to monzonite to monzodiorite intrusions within a package of Ordovician siltstone and overlying volcaniclastics. Cadia Hill is a large monzonite body containing a 300m thick zone of sheeted quartz-copper-sulfide veins dipping at 60 degrees.

Cadia East and Far East are 200-300m zones of disseminated and vein-controlled copper-gold mineralisation centred on thin porphyrytic bodies hosted within mafic volcaniclastics. Three main alteration assemblages, all having silica-albite-K-feldspar are present, with individual differences being one containing tourmaline, one with magnetite, and one with biotite-actinolite-magnetite. Where calcareous or limestone units were present close to the intrusions, iron-oxide-sulfide skarns formed, leading to development of the Big and Little Cadia hematite-magnetite skarns. These form up to 750m away from main mineralised zones, are up to 80m in thickness, and best development is of fine-to-coarse grained bladed hematite with calcite±chlorite±sulfide infill.

The >500m deep ore body at Ridgeway forms a high-grade pipelike ore body (300m in diameter @ 0.2g/t Au cutoff) surrounding a set of thinner, steeply plunging intrusions intruding along a steep fault wedge. Alteration zonation extends in a radius up to 500m from the ore body axis, with distal propylitic, grading into a 800m wide potassic zone with a 300m wide (calc-) potassic core consisting of K-feldspar, biotite, magnetite and actinolite (Wilson et al, 2003).

If porphyry deposits similar to those of the LFB existed within the Pluton tenements, the key questions are on the size of potential ore bodies, the nature of the alteration haloes, structures, lithology and alteration zonation. If reasonable sub-surface continuity of the alteration zones is assumed between the drill holes in the area, then the combined size of the alteration zones could be several km's (see Appendix B), which is similar to the LFB alteration zones surrounding economic deposits.

There is little known about structures in the Cethana area, and lithologically, the host rocks are much more felsic than those of the LFB. The importance of the latter lies in their susceptibility to alteration, as explained further below. The assemblages observed in CETD3 and CETD4 are dominantly of a propylitic nature but change to biotite-magnetite and possibly garnet towards deeper levels. This is good evidence for magmatic-hydrothermal fluid flow and proximity to an intrusion, provided some of this alteration is not metamorphic in origin.

In documented porphyry systems, biotite alteration zones are usually associated with the highest grades, and at Cethana, a similar association is seen (Appendix C), although the grades are sub-economic and there is a noticeable lack of expected abundant quartz(-sulfide) veining and abundant K-feldspar alteration. Furthermore, disseminated garnet and magnetite veins are more indicative of a skarn system, possibly one that formed syn-to-post deformation, as evidence by vein and passive replacement textures. This seems to fit better with the propylitic nature of alteration as well. In this case, a supposed porphyry or main fluid conduit could technically be up to 750m away from the Cethana mine. There is some uncertainty related to this interpretation, as some of the alteration minerals and fabric-parallel sulfides could also indicate submarine syn-volcanic hydrothermal activity, such as that in sub-economic VMS systems.

In comparison to the Cethana core, DR1 shows more promising porphyry-related features. DR3 and DEVD2 have both intersected highly altered intrusive bodies (also seen in hand samples) and are the most direct evidence that a porphyry system may be present. Particular mention should be made of identification in DR1 of multiple, crosscutting hydrothermal features, which is a characteristic of economic porphyry systems (cf. nine vein stages recognized within individual Northparkes deposits) and the alternating K-feldspar and sericite-quartz±pyrite zones, which provide reasonable evidence for porphyry type alteration. The lack of expected biotite within K-feldspar zones may be explained by the lack of mafic minerals in the felsic host rocks. Most of the brittle features are iron-oxide veins that have no systematic relationship (e.g haloes) to the observed K-feldspar and sericite-quartz-pyrite alteration. This remains poorly understood, but the simplest interpretation is that the veins are unrelated to the pervasive alteration, and therefore, the pervasive alteration is a result of pervasive but unfocussed fluid flow. It is therefore important that more work is carried out to understand the nature of the iron oxide veins. Are they the expression of Devonian remobilisation, or are they part of a Late Cambrian skarn system?

The classic Andean porphyry model (Gustafson and Hunt, 1975 has it that most grade occurs within the transition zones between potassic and phyllic alteration, which is not seen in DR1. In fact, such models are unlikely to be representative of the systems around the Cethana anomaly, which is interpreted as a submarine magmatic system and indeed, the Lachlan Fold Belt porphyries (which are also interpreted to be submarine) do not show this type of grade-alteration correlation either. However, within the LFB deposits, phyllic alteration is often attributed to fault related activity, not the magmatic-hydrothermal system itself. There is little evidence for this at Cethana and therefore, it is likely that Cethana shares features of LFB and other porphyry systems, such as Ok Tedi and Grasberg where large phyllic alteration zones are part of the magmatic-hydrothermal system. It should be noted that vein densities in the DR1 core, just as in CETD core, are not those expected of proximity to the economic parts of porphyry systems, but this is interpreted as not having intersected the zones of highest paleo-fluid flow.

The highest grades in all core are associated with intervals high in iron-oxides (Appendix C). This correlation may provide testable targets based on local magnetic or IP survey data.

Potential for higher-grade mineralisation

The majority of alteration minerals found here are not unique to porphyry systems: e.g. chlorite, quartz, magnetite, hematite, epidote, biotite, tourmaline. In that respect, trying to pigeonhole the deposit into a single ore deposit model is unadvisable, as the alteration mineralogy shows that important characteristics with porphyry, skarn, IOCG and VMS deposits are shared, whereas some key minerals for each deposit type is missing, e.g. biotite+K-feldspar or actinolite for a porphyry, pyroxene for a skarn, actinolite and albite for an IOCG, and clay minerals and massive sulfide for a VMS. However, provided the alteration minerals are not of metamorphic origin, they all provide good evidence for the presence of a hydrothermal system sufficiently large to form an economic deposit.

This leaves a few key questions to be answered by further exploration work:

1 What is the architecture of the system and what are the main focussed fluid pathways?

The area around Cethana with its diffuse alteration and syn-tectonic veins looks less promising than the Five Mile Rise and Dove River areas, the latter which show more brittle features and have intrusive host rocks that tend to deform in a brittle fashion over a larger range of PT conditions that undoubtedly affected the area in its Cambro-Ordovician geological history. This is important because of the potential of brittle structures to focus fluids. In this (southern) part of the tenement, the most favourable targets are intrusive contacts, of which not many have been encountered yet.

2 What are the main depositional traps along these fluid pathways?

The association of the sulfides with iron oxides is a common feature of many mineralised systems, related to sulfidation reactions, e.g. in porphyries, skarns and IOCG type deposits. Extrapolating these principles to a larger scale, this means that host rock characteristics will have a major influence on the depositional/reaction behaviour of the fluids. In practice, this means searching for permeable, iron-bearing lithologies, such as more mafic volcanic or intrusive units or iron-skarns, the latter which can form in the more calcareous and limy units of the volcano-sedimentary (Cambrian) units. Hence, it is advisable to get a better stratigraphic control on the host rocks.

3 What is the nature of the fluids?

There is no doubt that the alteration mineralogy indicates high temperature (>300° C), saline, oxidising fluids. These fluids had the capacity to transport large quantities of metal incl. copper, as evidenced by the large amounts of hydrothermal iron oxide, which requires fluids of high chloride concentrations. The key uncertainty here is whether there was sufficient sulfur in the fluids to facilitate the precipitation of copper and facilitate gold transport. This question can only be answered once zones of high depositional favourability have been intersected.

4 What is the geological history of the area?

The limited 3D understanding of spatial relationship between different geological units prohibits assessing the relative timing of magmatic and hydrothermal activity in the area. This, coupled with an absence of geochronological data (e.g. U-Pb or Ar-Ar dates), implies many of the timing relationships have to be assumed or guessed. For example, it is not known whether the tourmaline flooding event in DR1 was substantially separated in time from the later iron-oxide veining and replacement event. This is important to the extent that magmatic-hydrothermal activity of Devonian age is not considered to produce the type of target Pluton is interested in. Recommendations on appropriate dating strategies and cost estimates could be provided by a consultant.

Mineralisation model

The data available are not sufficient to determine what kind of 'traditional' deposit model should be used, but if the above-mentioned key questions are answered this should provide testable targets.

It is advisable to compose a hybrid model that combines features of IOCG, skarn and porphyry deposits. Construction of such a model is beyond the scope of this report, but would include desktop study of some type examples of deposits that were not discussed in this report, in particular the Big Gossan (Grasberg) and Cadia skarns and the Raul-Condestable deposit (Chile).

As reviews of above mentioned deposit-types show (e.g. Meinert et al, 2005; Seedorff et al, 2005; Williams et al., 2005), many magmatic-hydrothermal ore deposits fall into a spectrum between end-members, in which characterisation based on mineralogy often fails to pinpoint the deposit type. To circumvent this problem, focus in the model should thus be on the common features: focussed fluid flow and depositional/chemical traps.

A reasonable speculation from the data available is that the most favourable target areas are:

- At depth in the area along the roughly E-W trending contact of the Dove River granite, probably a few hundred meters deeper than EOH of DR1.
- On and around the intersection (in 3D space) of the N-S trending Lake Cethana lineament with the inferred batholith from aeromagnetics or ground geophysical methods. This requires inversion modelling to test some likely scenarios where the edge of the batholith, apophyses, or skarn bodies may be.

4 Conclusions and recommendations

Limited available geological data on the Cethana anomaly area shows evidence for a large magmatic-hydrothermal system, which may have had the potential to focus its oxidising, saline hydrothermal fluids with copper-gold mineralising potential into a zone of high fluid flow and favourable depositional characteristics. Although such zones have not been intersected by the current holes drill holes, the area in close proximity to the partially covered Dove River granite looks promising in terms of alteration assemblages and brittle features.

Many features of the area show evidence of porphyry style alteration. The alteration assemblages support such an interpretation to a reasonable extent. However, the lack of some mineral assemblages or abundant veining suggests that a direct comparison with systems such as Cadia and Northparkes is unwarranted. The alteration assemblages do not exclude other interpretations such as IOCG or skarn systems. It is advised that a hybrid mineralisation model is constructed, because despite of the non-similarities, there is high fluid flow potential and evidence pointing at the right type of mineralising fluids.

Exploration focus should be on identification of zones of coincident focussed fluid flow and focussed deposition. Higher-grade mineralisation may be targeted once such zones, e.g. apophyses of the postulated Cambrian batholith, are identified. Priority should be given to identifying the 3D distribution and nature of host rocks to such zones, as this will allow prediction of depositional traps. This is particularly relevant given the evidence for skarn type mineralisation, which is strongly controlled by host rock characteristics.

The following is recommended to help identify drill targets:

- Stratigraphic logging of the host volcanics, preferably away from hydrothermal alteration, if possible
- Construction of 3D model, preferably with the use of inversed geophysical data and stratigraphic information

- Zircon U-Pb dating of the intrusive bodies thought to represent Cambrian granites to substantiate the exploration model and/or Ar-Ar dating of white mica associated with mineralisation

Furthermore, exploration work should focus on understanding the nature of the iron-oxide veins and bodies, i.e. whether they represent Devonian low-grade remobilisation (Corbett, 2009) or whether they are part of the postulated Cambro-Ordovician hydrothermal event. This impacts directly on the mineralisation model, which in turn determines the drill targets. Even if they are Devonian however, they are direct evidence of zones of high fluid flow, and it is likely that they would have exploited pre-existing structures that can be traced down to deeper levels.

When drilling for porphyry style-targets, an important consideration is drill spacing, as porphyry copper deposit grade can be extremely variable and change from 0.1 to 4.0 % Cu within 10’s of meters, contrary to the popular belief that they are large, homogenous, low-grade (0.6% Cu) bodies.

5 References

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Appendix A – Selected photos from drill core

Photo 1. DR1 @ 28m. Chlorite-silica alteration

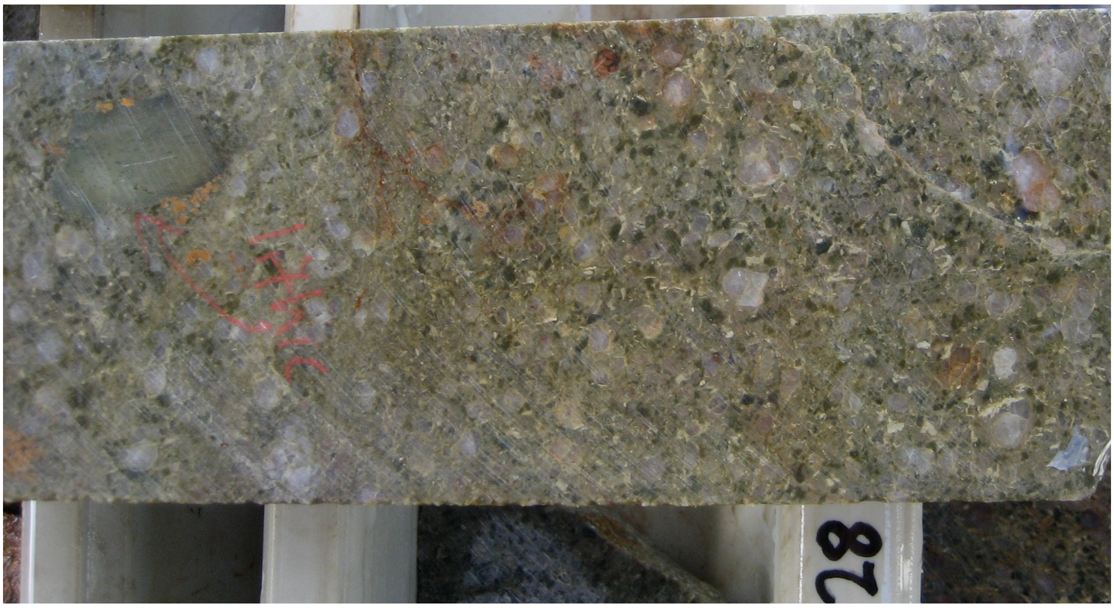


Photo 2. DR1 @ 228. Pink K-feldspar + hematite dusting alteration

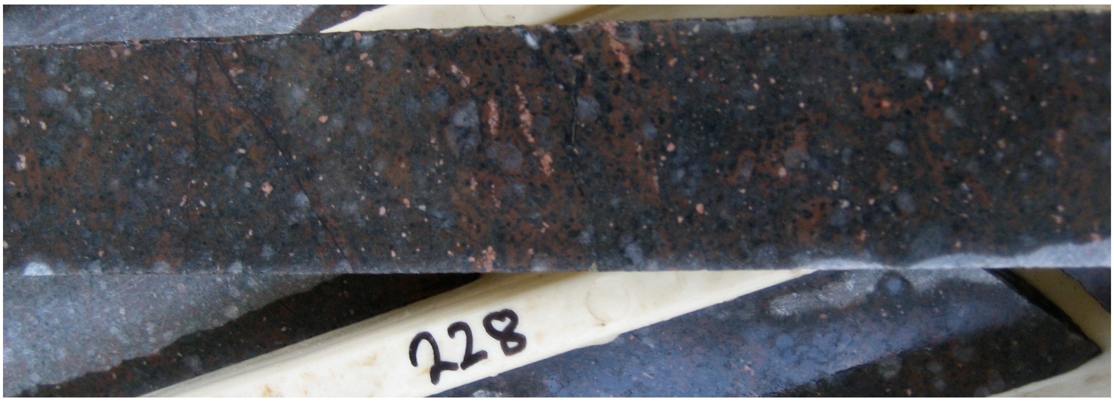


Photo 3. DR1 @ 236 m. Light grey sericite-quartz-pyrite alteration cut by tourmaline and hematite veins.

Photo 4. DR1 @ 144m. Tourmaline (black) flooding of breccia matrix

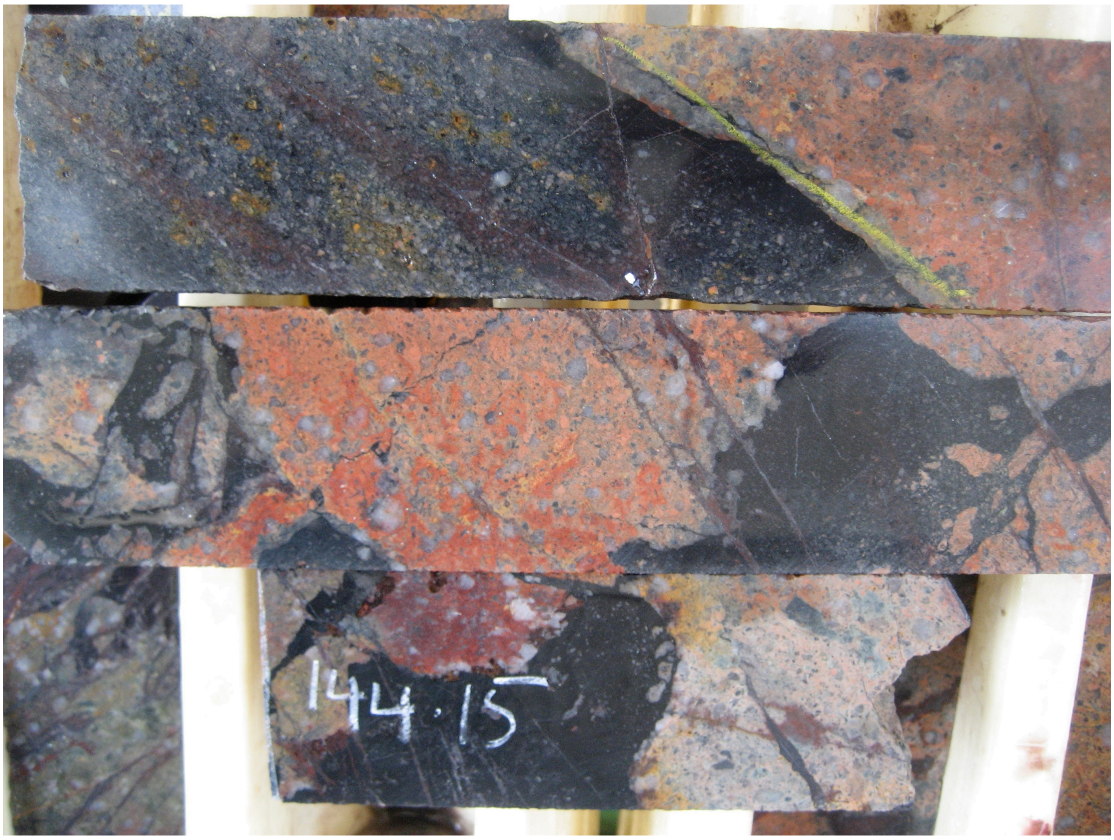


Photo 5. DR1 @ 82m. Sheeted hematite veins

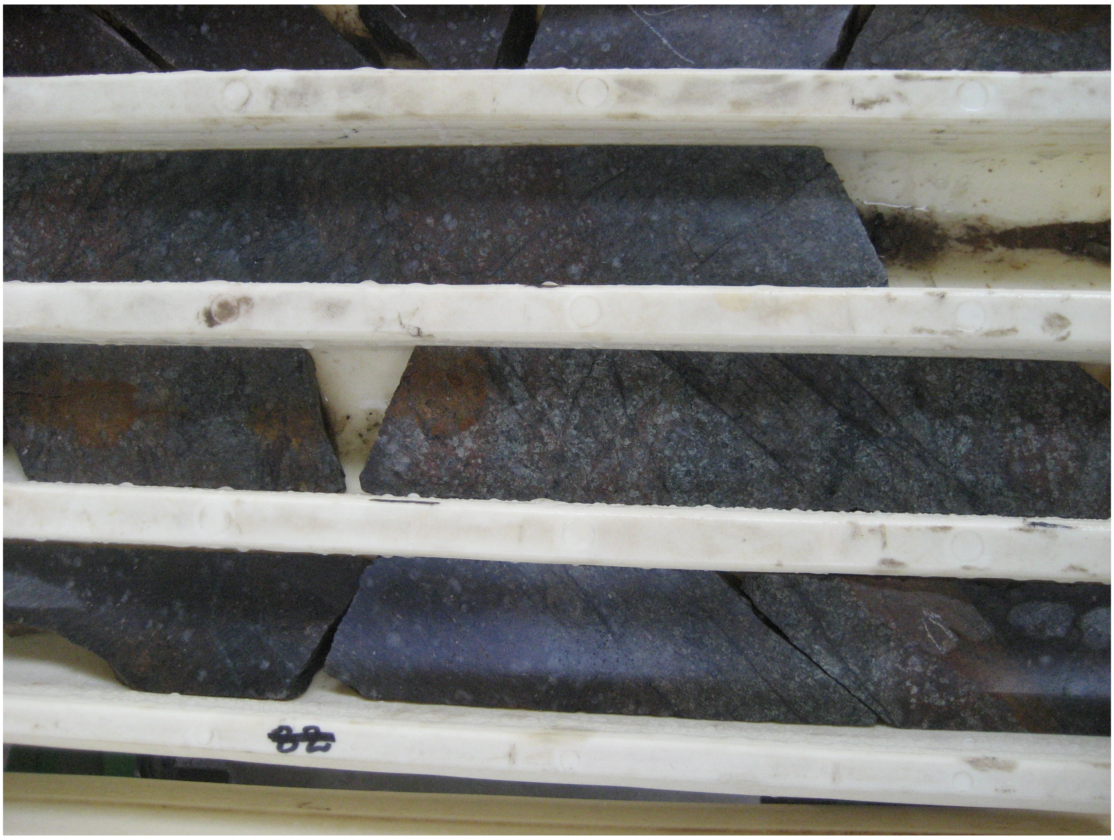


Photo 6. DR1@190m. Massive hematite, brecciating a previous tourmaline infill

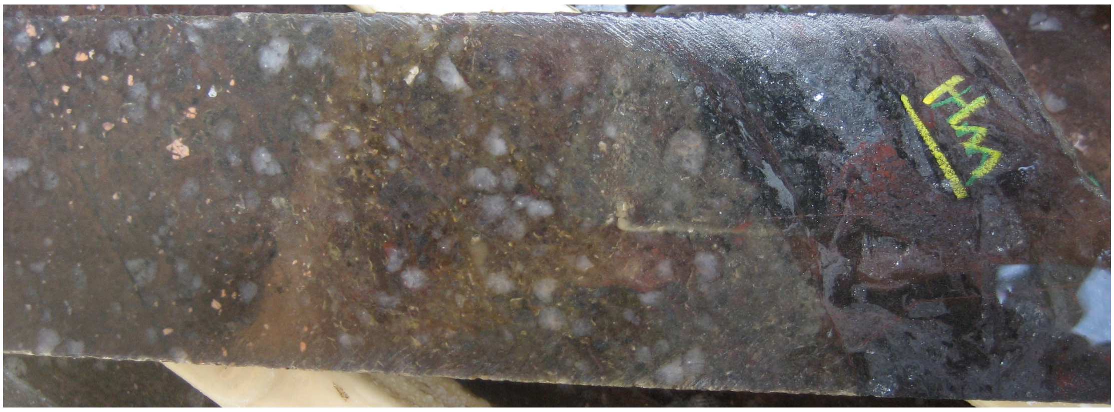


Photo 7. DR1 @ 266m. Hematite + chalcopyrite veins, crosscutting K-feldspar zone

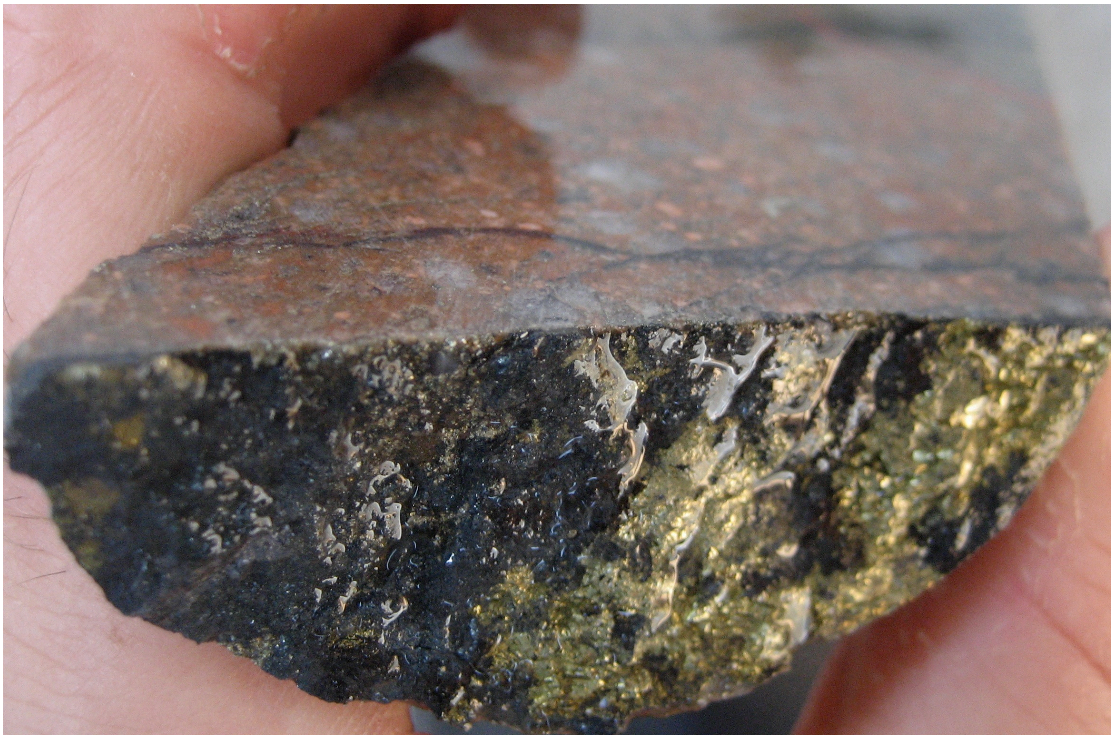


Photo 8. DR1 @ 287. Hematite veins (some with purple halo) crosccut sericite and K-feldspar alteration. Thick quartz-sulfide vein is latest.

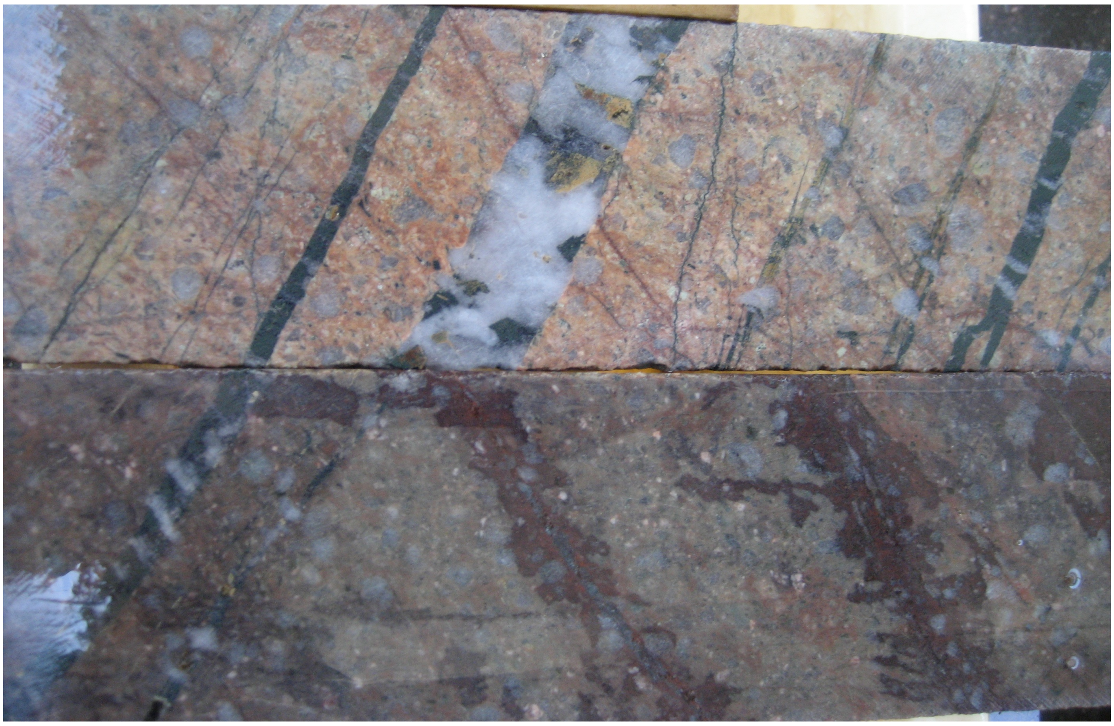


Photo 9. CETD4 @ 56m. Quartz-chlorite-epidote vein-related alteration

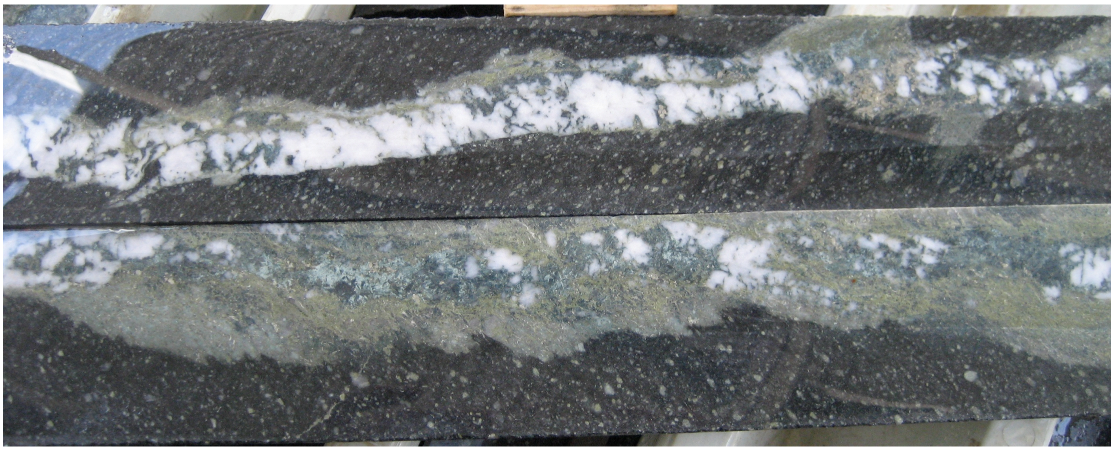


Photo 10. CETD4 @ 73m. Strong fabric in quartz-rich volcaniclastic.

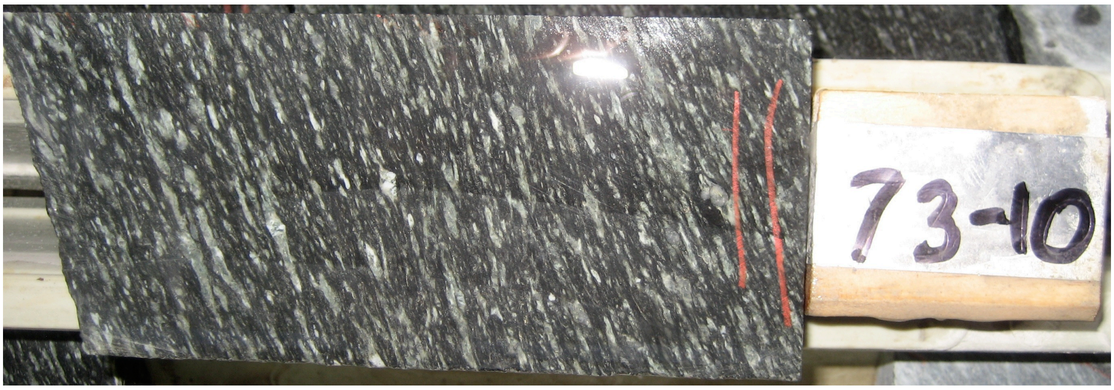


Photo 11. CETD4 @ 142m. Quartz-rich volcaniclastic with faint fabric.

Photo 12. CETD4 @ 280m. Fabric parallel pyrite in strongly silicified and perhaps sericitised volcaniclastic with moderate fabric development.

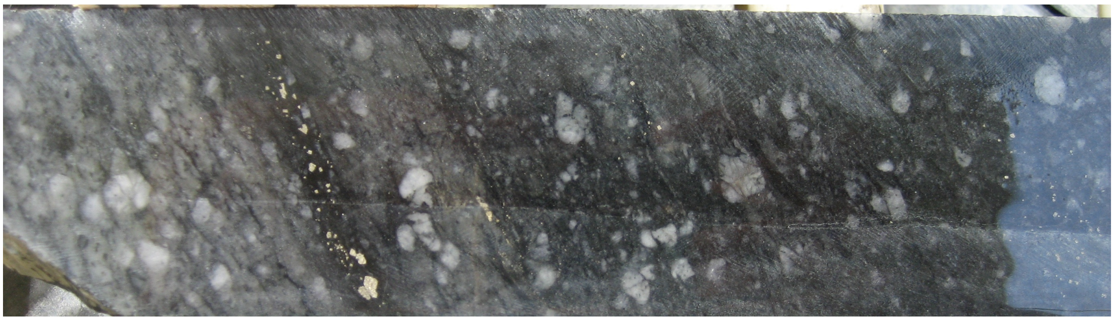


Photo 13. CETD4@ 262m. Fabric parallel recrystallised pyrite , crosscut by later quartz-chlorite vein.

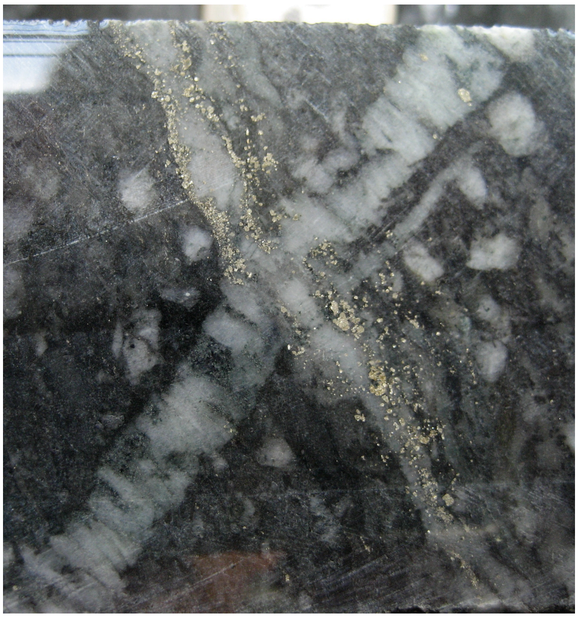


Photo 14. CETD4 @ 525. Pre-deformation quartz veins have been brecciated and recrystallised.

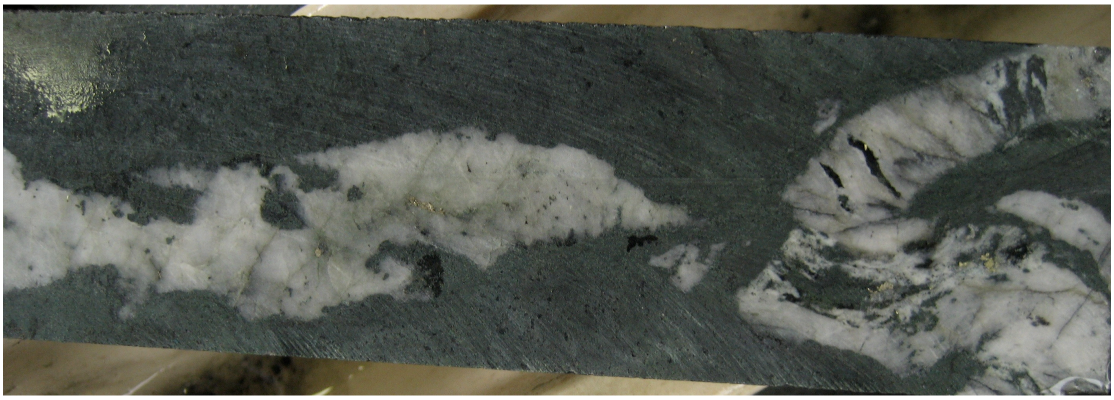


Photo 15. CETD4 @ 385m. Syn-deformation quartz+chlorite±magnetite±pyrite vein with clear bending of the vein fabric into wall rock (syntaxial growth).

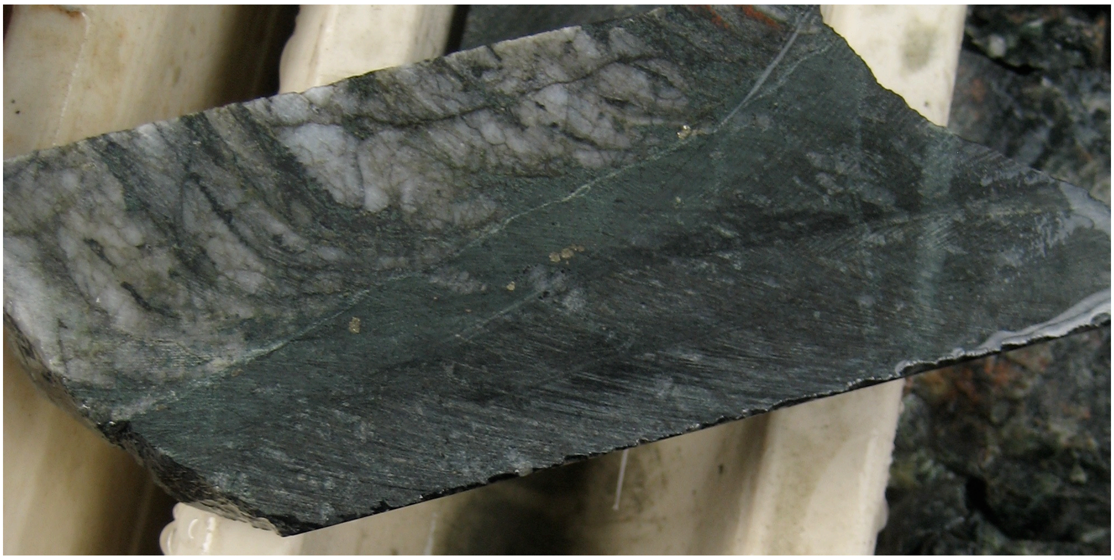


Photo 16. CETD4 @ 172m. Post-deformation quartz-chlorite-epidote vein, with vein halo selectively alterating into fabric-parallel orientation.

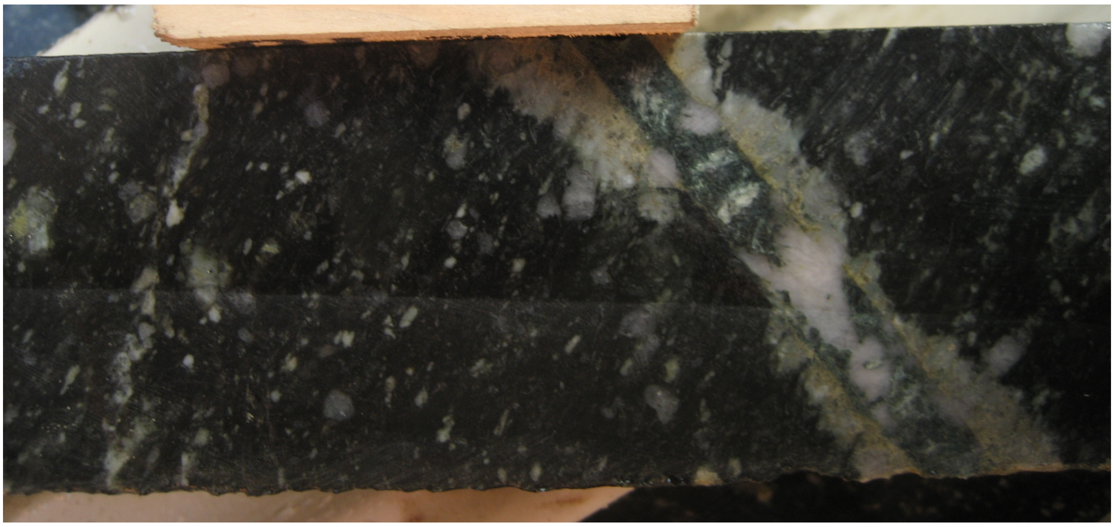


Photo 17. CETD4 @ 497m. Magnetite-pyrite-quartz vein.

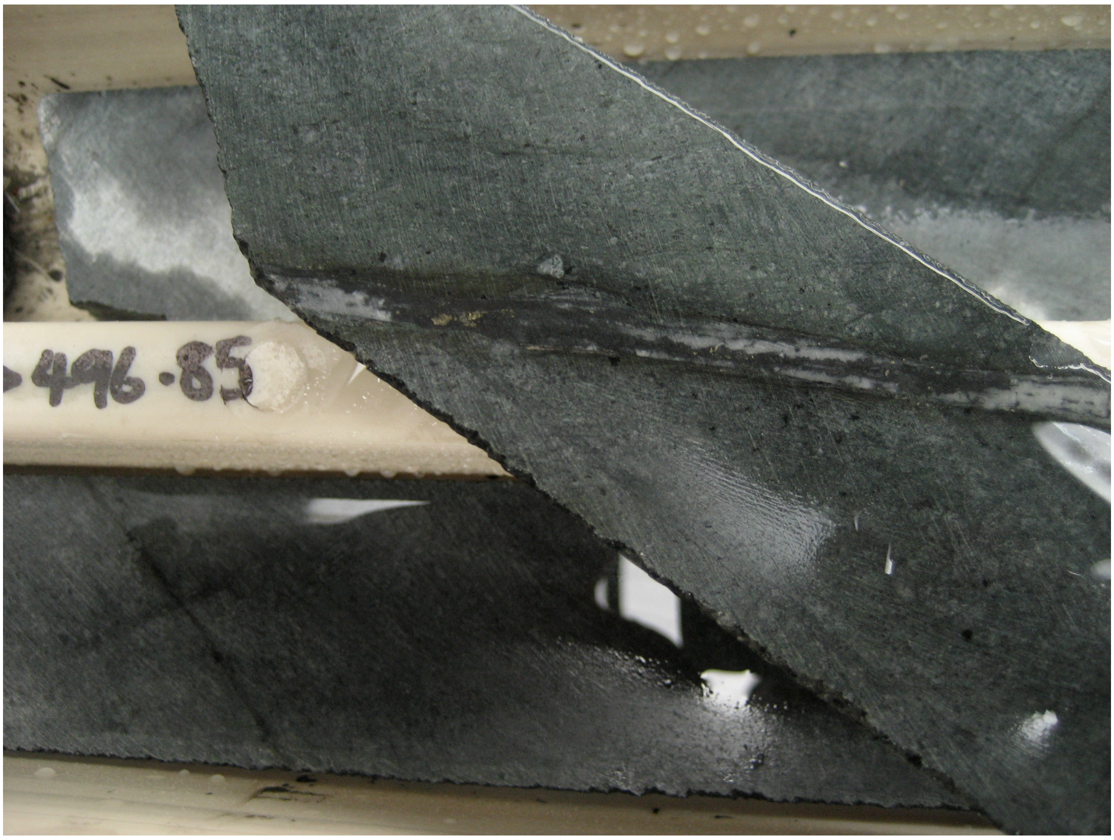


Photo 18. CETD4 @ 393m. Magnetite±chalcopyrite breccia/vein.

Photo 19. CETD4 @ 505. Spotty garnet (?) selective-pervasive alteration.

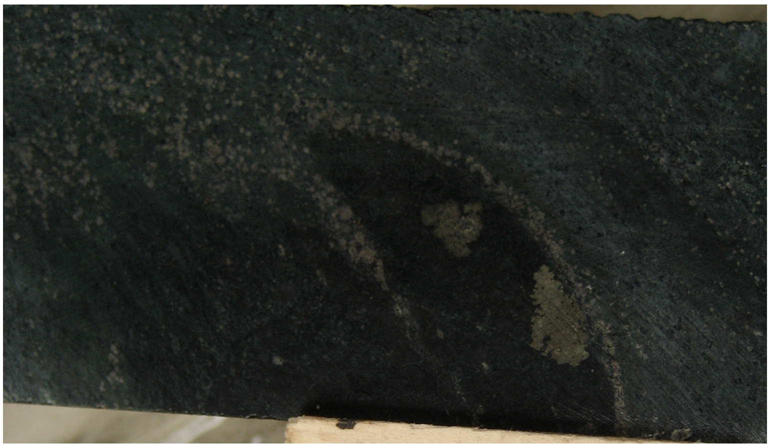


Photo 20. CETD4 @ 511. Spotty biotite alteration in texture destroyed chlorite altered host rock ,with nearby quartz-magnetite vein.

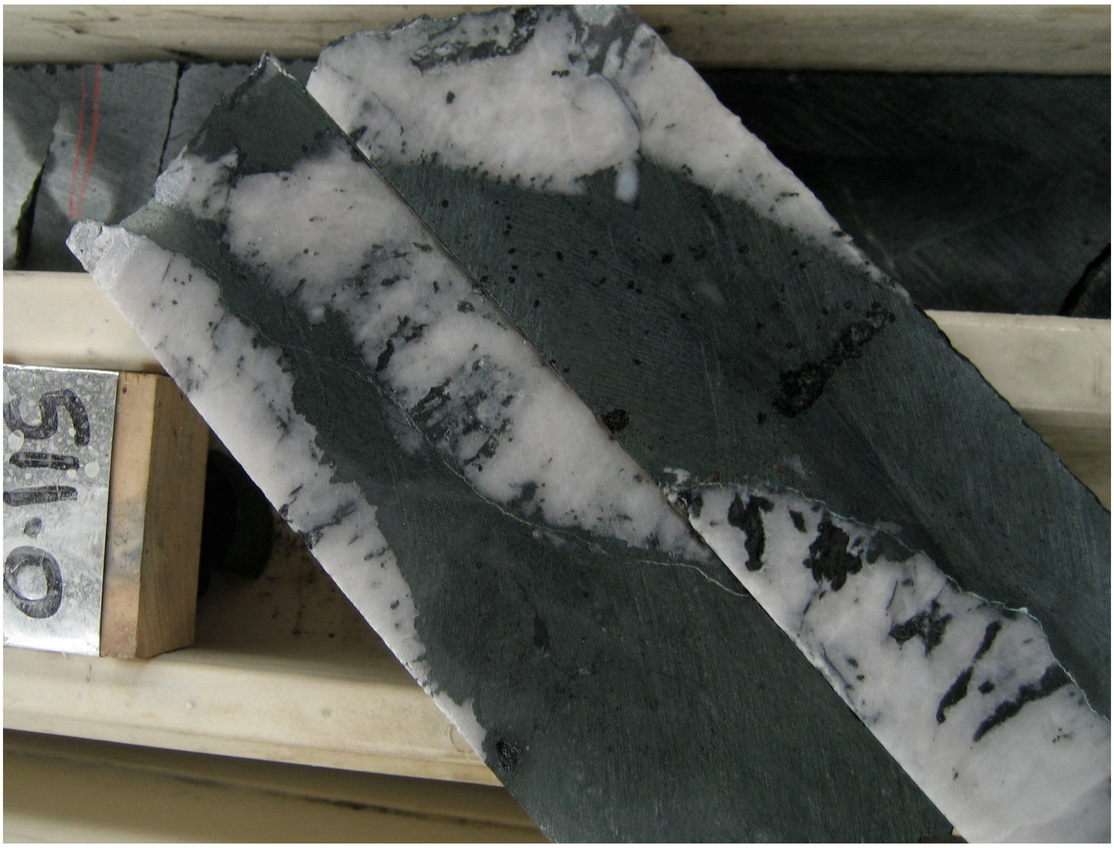


Photo 21. CETD4 @ 433m. Spotty magnetite alteration in texture destroyed chlorite altered host rock.

Photo 22. CETD4 @ 460m. Pyrite-pyrrhotite vein crosscutting magnetite-garnet alteration zone.

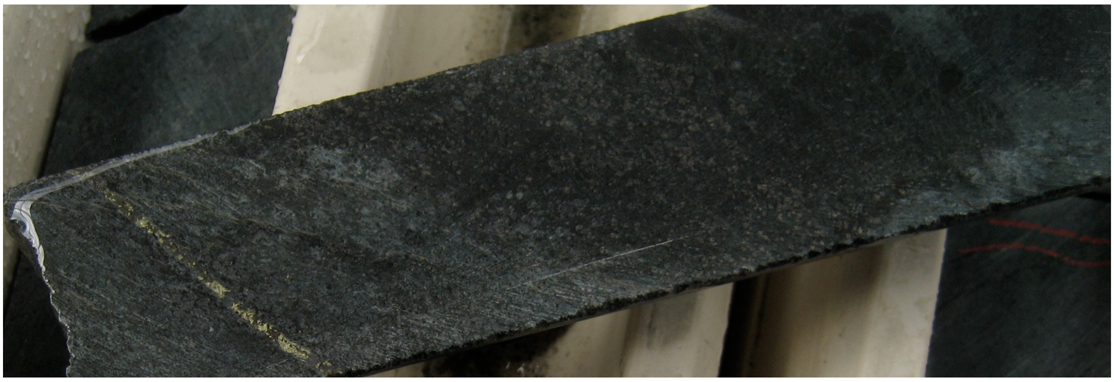


Photo 23. CETD3 @ 316. Late pink carbonate veins, crosscuts main fabric and silicified host volcaniclastic.

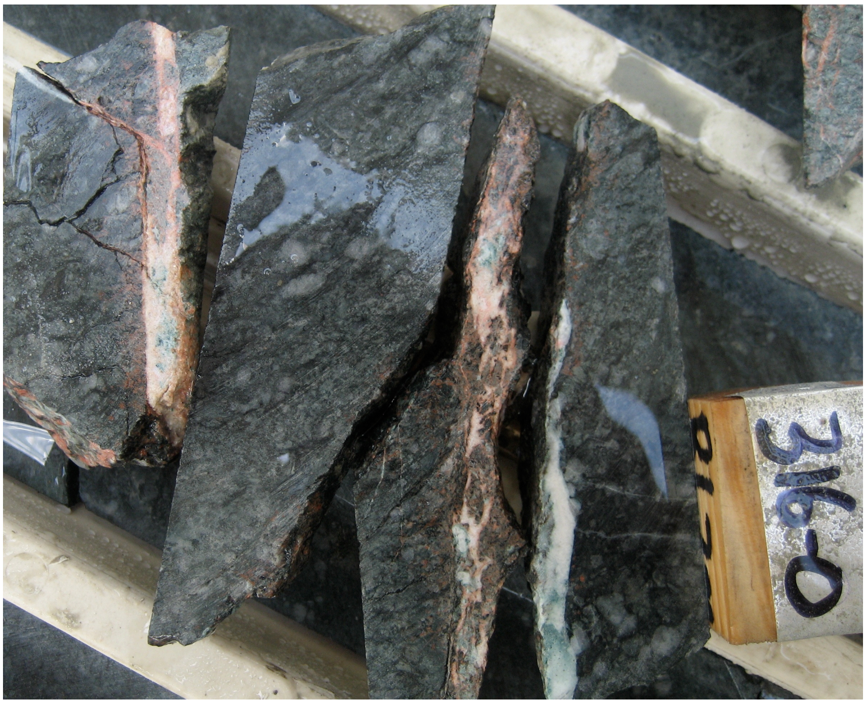


Photo 24. CETD4 @ 418m. Magnetite±pyrite fluidised breccia of strongly silicified and sericitised quartz-rich volcaniclastic.

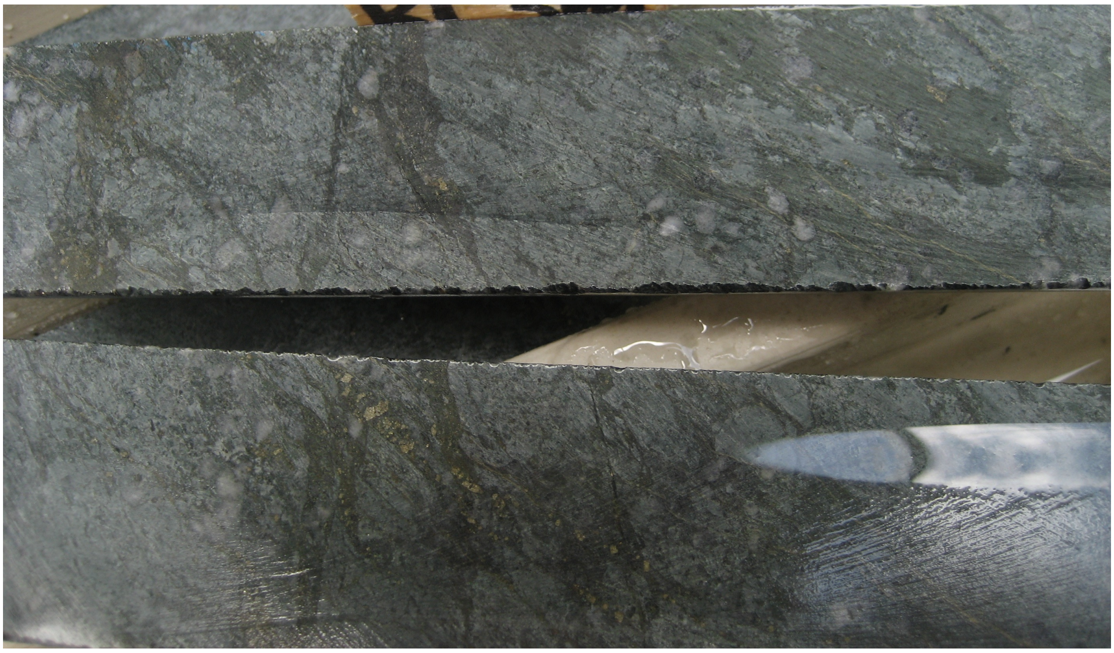


Photo 25. CETD4 @ 355m. Magnetite±pyrite fluidised breccia vein.

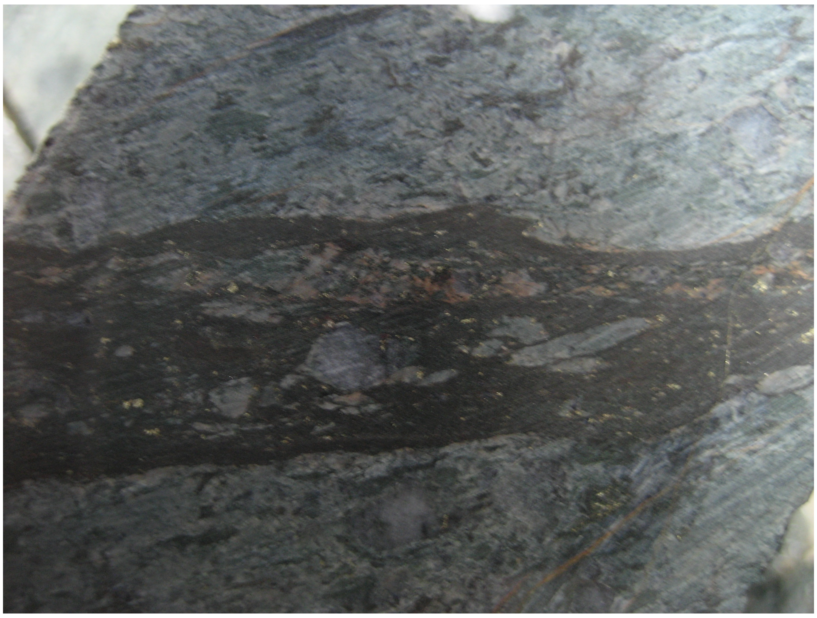


Photo 26. CETD3 @ 258m. Fabric parallel disseminated recrystallised pyrite within magnetite domains of magnetite-biotite-silica-sericite altered volcaniclastic. Late orange-pink carbonate veinlets.

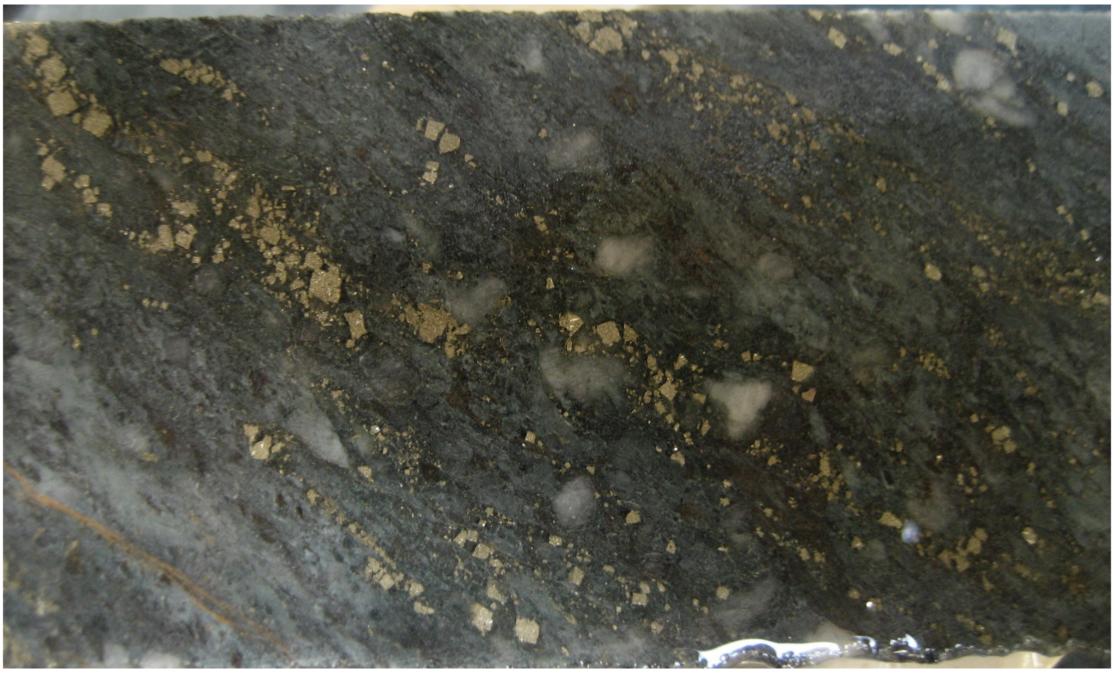


Photo 27. CETD3 @ 247m. Quartz-magnetite-pyrite vein crosscutting biotite alteration zone.

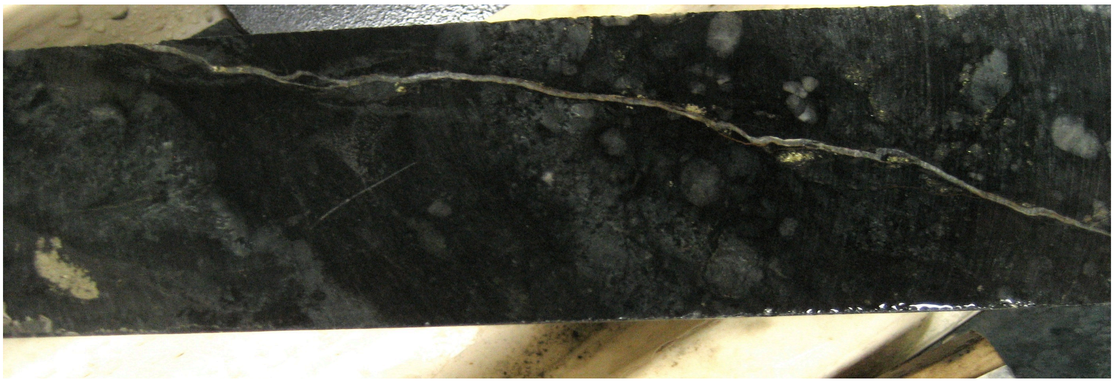


Photo 28. CETD3 @ 270. Quartz-chlorite±magnetite veins crosscut biotite-chlorite pervasively altered host volcaniclastic.

Photo 29. CETD3 @ 249m. Biotite-chalcopyrite (?) vein with sericite-silica halo.

Photo 30. CETD3 @ 265m. Possible fluidised breccia with strong sericite-silicification, and magnetite-biotite-sulfide infill.

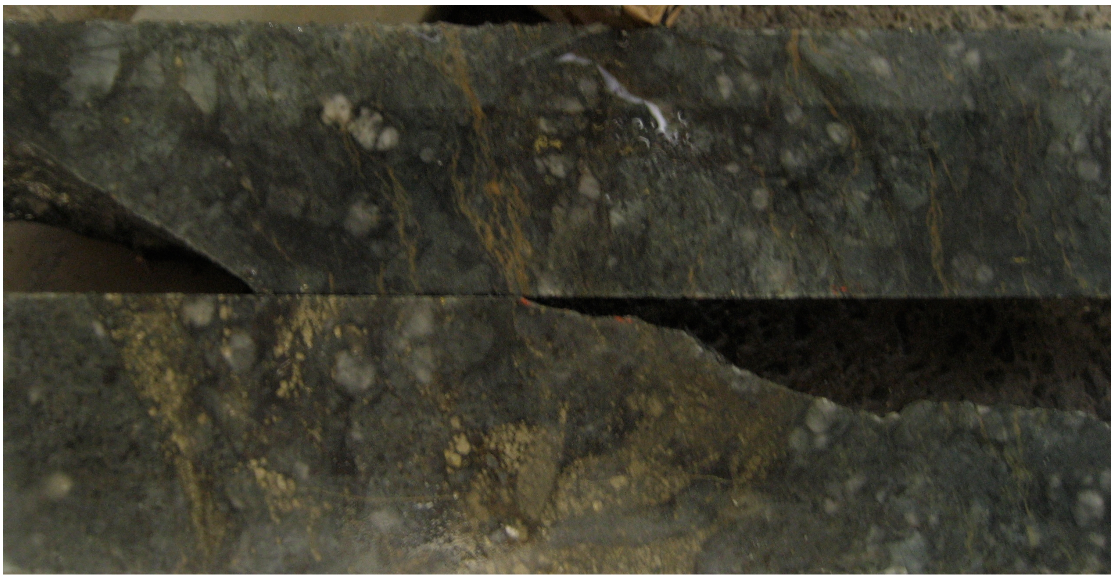


Photo 31. Sample 152818. Feldspar-phyric volcaniclastic, with sericitised feldspars and chlorite altered groundmass.

Photo 32. Sample 152819. Crowded biotite-quartz-feldspar monzodiorite porphyry with clay-altered groundmass, quartz-filled vesicles, and biotised hornblende.

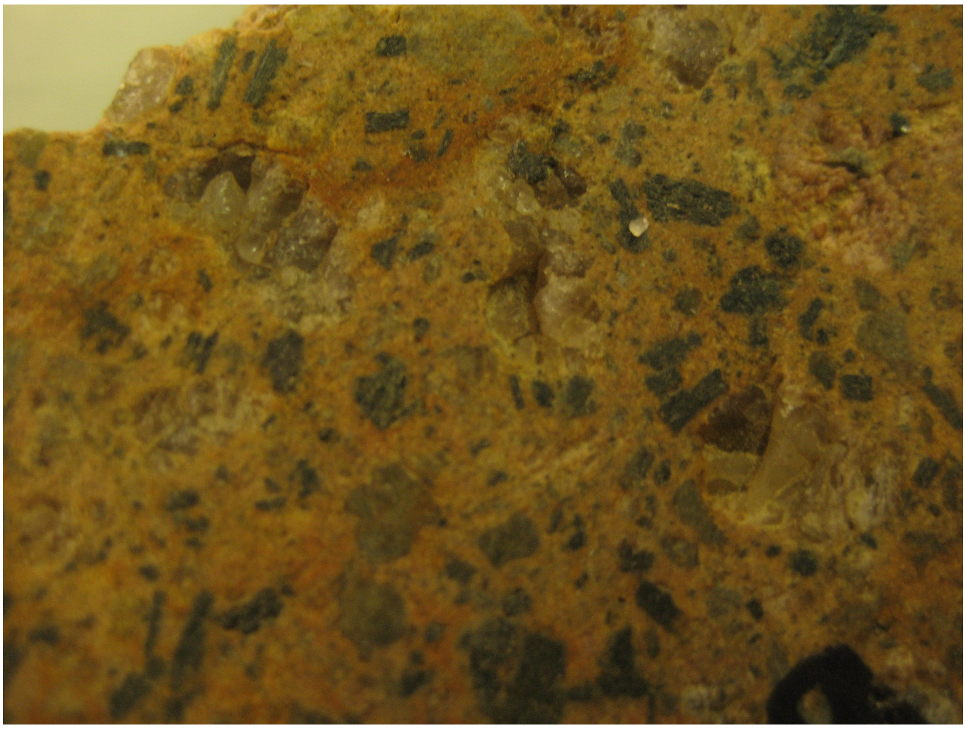
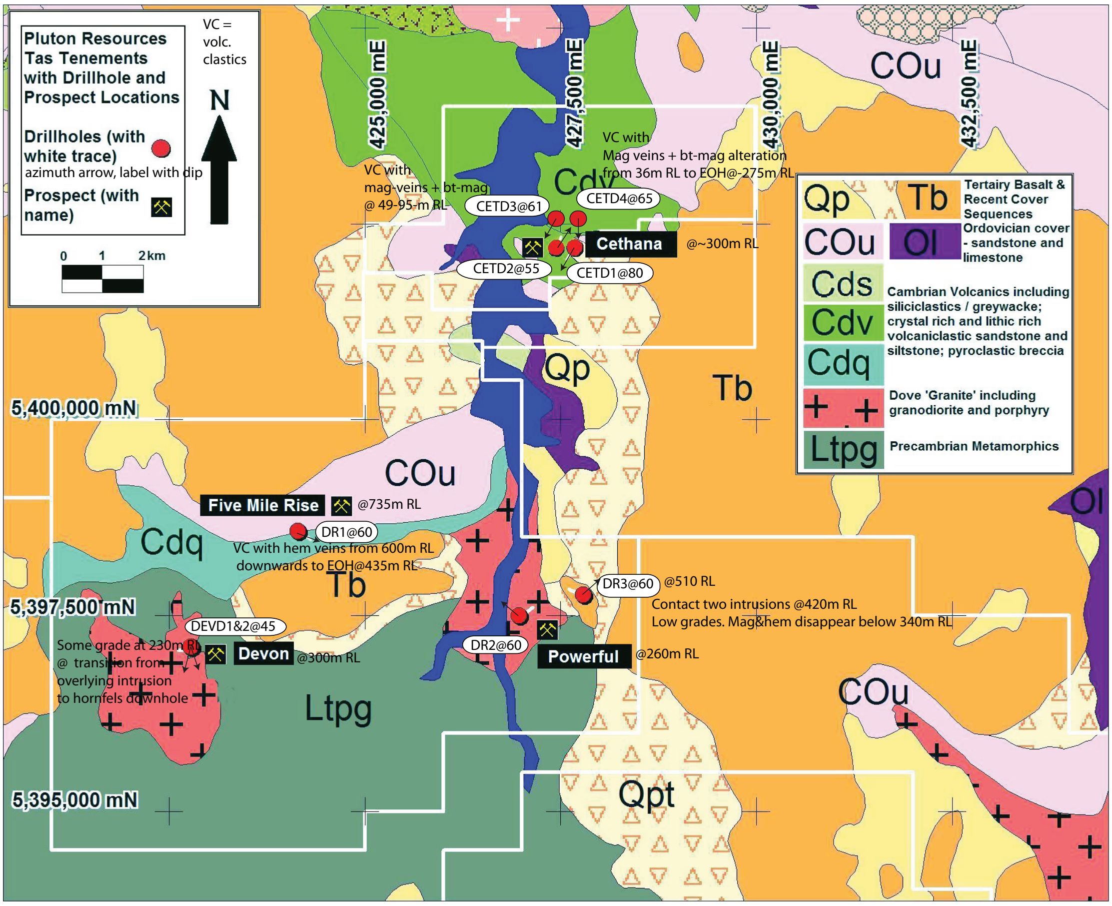


Photo 33. Sample 152820. Crowded medium grained porphyry with sericitised albite and biotite phenocrysts. K-feldspar altered matrix.

Photo 34. Hematite-pyrite-arsenopyrite (?) replacement zones in old mine working.

Photo 35. Hematite veining and passive replacement textures in volcaniclastic.

Appendix B – Annotated simplified geological map



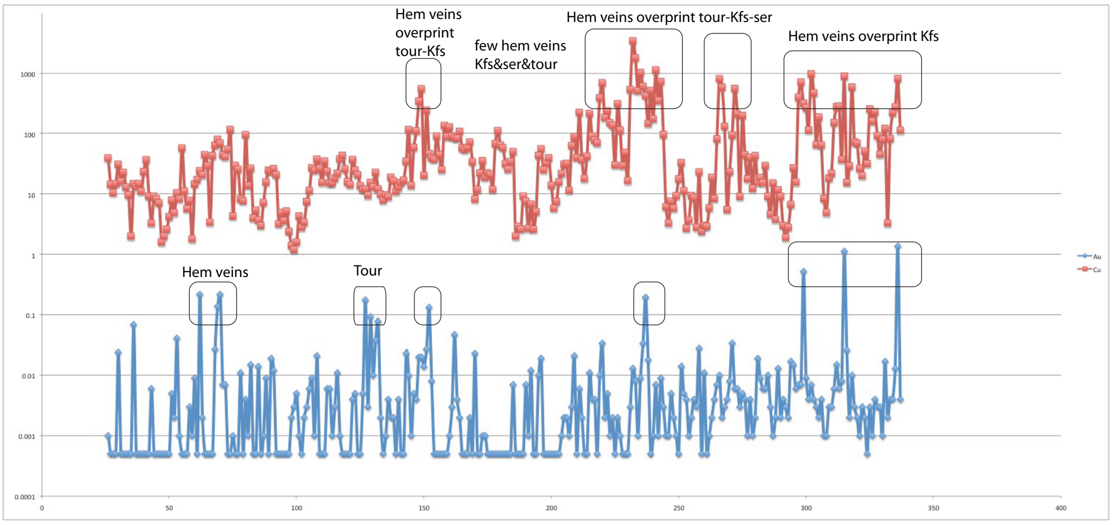
Notes:

- If alteration zones intersected by drill holes are continuous between the holes, the system may be several kilometers in size. Otherwise, a pencil/plug-like porphyry system (c.f. Northparkes) may be present at depth: Around FMR and Powerful deeper than ~350 RL, at Cethana deeper than ~ 0 RL.
- Iron oxide veining systems (associated with sulfides) change from magnetite-dominated at lower RL in the north to hematite-dominated at higher RL in the south. This may be related to a paleodepth distribution, where the more oxidised hematite suggests shallower levels. This, with the (interpreted proximal) biotite-magnetite alteration at Cethana, suggests a potential porphyry is closer to the surface there.

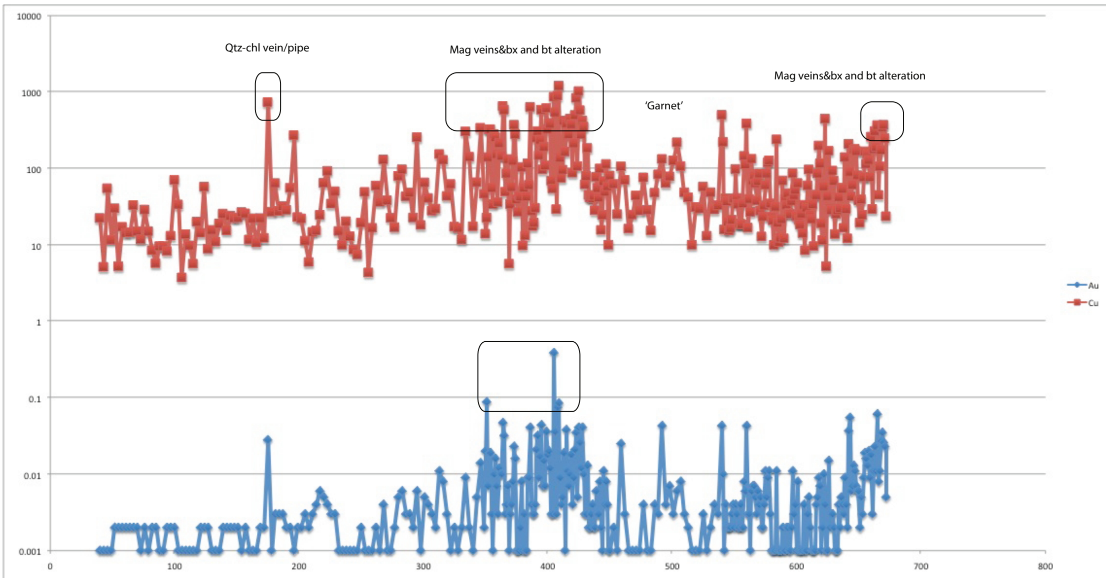
Appendix C – Annotated assay plots

X-axis: drill hole depth in m, EOH on right hand side

Y-axis: assay (ppm), log-scale



DR1



CETD4