GEOLOGICAL REVIEW OF THE CACAO VEIN TARGET, LA INDIA GOLD PROJECT, NICARAGUA

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By: Warren Pratt
Specialised Geological Mapping Ltd

Specialized Geological Mapping
www.geologicalmapping.com
info@geologicalmapping.com
Tel: ++ 44 (0) 1343 842813

1 INTRODUCTION

The Cacao target is controlled by Condor Gold plc. It occurs within the La India gold district, in the Province of León, Nicaragua. The district is characterised by Low Sulfidation epithermal gold mineralisation on the East flank of a caldera (Santa Rosa del Peñón).

Drilling in the district by Condor Gold has established Inferred and Indicated Resources of over 2.3 Moz gold (SRK mineral resource, 25 January 2019). Most of the gold occurs in narrow crustiform quartz-dominated veins with excellent continuity (up to several km).

The district resources include 46 Koz gold at Cacao (Underground, 2 g/t cut off: 474,000 tonnes at 3 g/t gold) and 14 Koz gold (Open Pit, 0.5 g/t cut off; 188,000 tonnes at 2.3 g/t gold). But Cacao is at a very early stage of exploration and the company believes there is excellent potential for a 500 Koz or 1 Moz resource.

A geological map of part of the district, with a 2 km grid, is shown in the figure below. Drill collars are also shown. Selected drill logs (done by the author) are attached in Appendix 1.

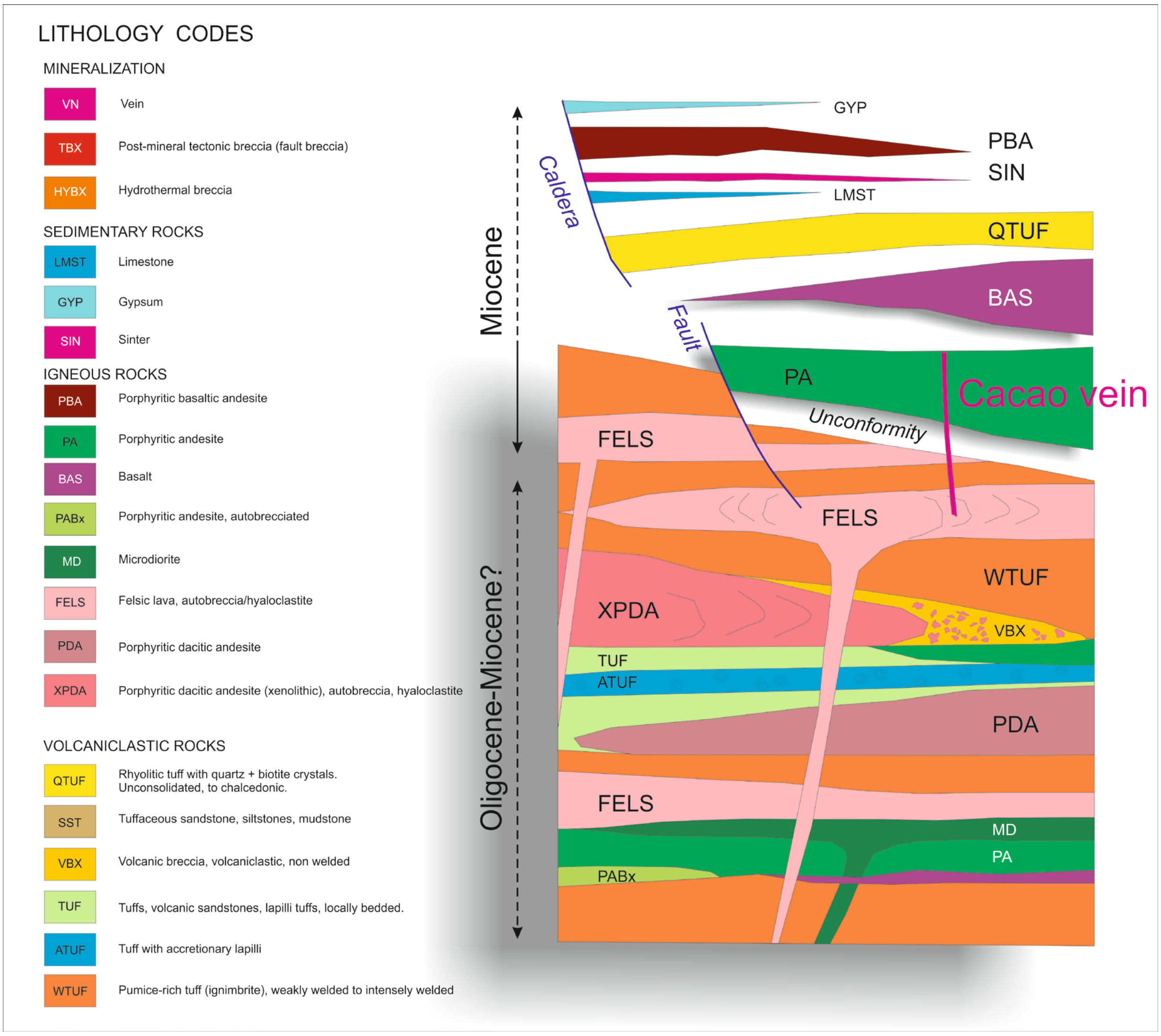
Most of the focus of Condor Gold has been on increasing resources in the other veins (La India, America, Mestiza). Despite initial drilling at Cacao as early as 2007, the target was mostly neglected until new drilling in 2016. This reflected problems with RC drilling and poor recovery in 2007. And perhaps the perception that it was not attractive for open-pitting.

Cacao was first identified at surface because it comprises an East-West-striking ridge of chalcedonic, silicified and brecciated rocks between 10 and 30 m wide. There are rare East-West, subvertical crustiform quartz veins up to 1 m thick within the breccias. But, compared with the significant veins at la India and America, they are discontinuous and never exploited by informal miners.

2 LITHOSTRATIGRAPHY

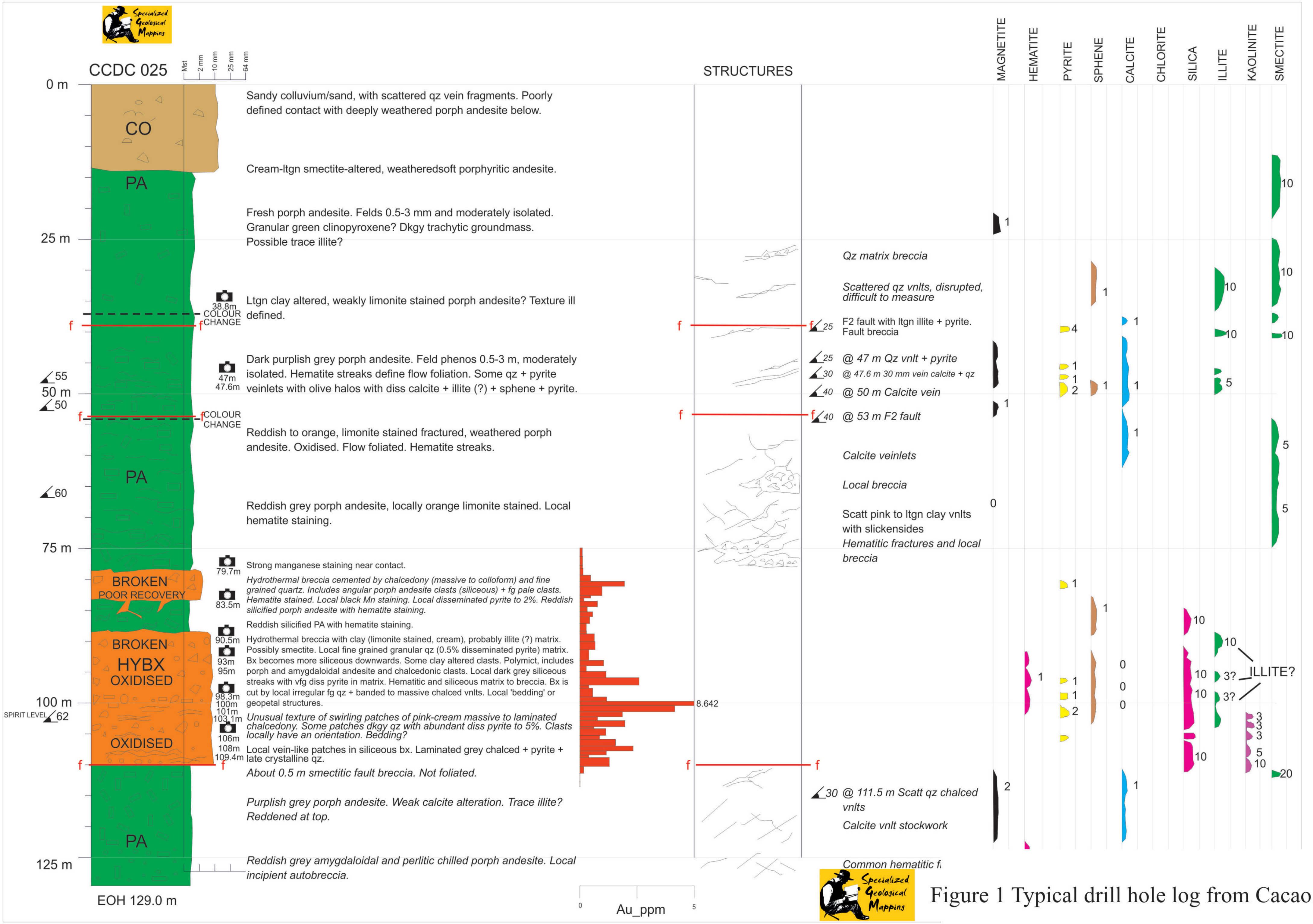
Mineralisation at Cacao is hosted within sub horizontal Miocene porphyritic andesites (‘PA’ in the stratigraphic column below). In terms of regional stratigraphy, these andesites are some of the youngest rocks in the district. *(Younger rocks fill the Santa Rosa del Peñón caldera.)*

At La India and America, the andesites occupy narrow graben and half graben above a ‘basement’ of felsic volcanic rocks (see Figure 2). These comprise formerly glassy dacite/rhyolite flow domes and welded tuffs. East of the major Highway Fault, a post-mineral fault, the andesites are dropped down (see map above). It also appears that the entire district epithermal system is dropped down, because remnants of sinter are preserved at Cacao (as float boulders). Cacao is therefore much less eroded than La India and America.



The andesites at Cacao are mostly fresh and display moderately isolated small plagioclase and clinopyroxene phenocrysts in a very fine grained, trachytic groundmass. The andesite shows flow foliation and, in places, is autobrecciated. Figure 1 shows a typical drill log.

The andesites at Cacao are at least 160 m thick, the thickest seen in the district to date. One drill hole shows evidence of a thin pumice tuff, so there are at least two andesite lava flows (or high-level sills) present. This is shown on the screenshot below (viewed towards West).



Sandy colluvium/sand, with scattered qz vein fragments. Poorly defined contact with deeply weathered porph andesite below.

Cream-ltgn smectite-altered, weatheredsoft porphyritic andesite.

Fresh porph andesite. Felds 0.5-3 mm and moderately isolated. Granular green clinopyroxene? Dkgy trachytic groundmass. Possible trace illite?

Ltgn clay altered, weakly limonite stained porph andesite? Texture ill defined.

Dark purplish grey porph andesite. Feld phenos 0.5-3 m, moderately isolated. Hematite streaks define flow foliation. Some qz + pyrite veinlets with olive halos with diss calcite + illite (?) + sphene + pyrite.

Reddish to orange, limonite stained fractured, weathered porph andesite. Oxidised. Flow foliated. Hematite streaks.

Reddish grey porph andesite, locally orange limonite stained. Local hematite staining.

Strong manganese staining near contact.

Hydrothermal breccia cemented by chalcedony (massive to colloform) and fine grained quartz. Includes angular porph andesite clasts (siliceous) + fg pale clasts. Hematite stained. Local black Mn staining. Local disseminated pyrite to 2%. Reddish silicified porph andesite with hematite staining.

Reddish silicified PA with hematite staining.

Hydrothermal breccia with clay (limonite stained, cream), probably illite (?) matrix. Possibly smectite. Local fine grained granular qz (0.5% disseminated pyrite) matrix. Bx becomes more siliceous downwards. Some clay altered clasts. Polymict, includes porph and amygdaloidal andesite and chalcedonic clasts. Local dark grey siliceous streaks with vfg diss pyrite in matrix. Hematitic and siliceous matrix to breccia. Bx is cut by local irregular fg qz + banded to massive chalced vnlts. Local 'bedding' or geopetal structures.

Unusual texture of swirling patches of pink-cream massive to laminated chalcedony. Some patches dkgy qz with abundant diss pyrite to 5%. Clasts locally have an orientation. Bedding?

Local vein-like patches in siliceous bx. Laminated grey chalced + pyrite + late crystalline qz.

About 0.5 m smectitic fault breccia. Not foliated.

Purplish grey porph andesite. Weak calcite alteration. Trace illite? Reddened at top.

Reddish grey amygdaloidal and perlitic chilled porph andesite. Local incipient autobreccia.

Qz matrix breccia

Scattered qz vnlts, disrupted, difficult to measure

F2 fault with ltgn illite + pyrite. Fault breccia

@ 47 m Qz vnlt + pyrite

@ 47.6 m 30 mm vein calcite + qz

@ 50 m Calcite vein

@ 53 m F2 fault

Calcite veinlets

Local breccia

Scatt pink to ltgn clay vnlts with slickensides

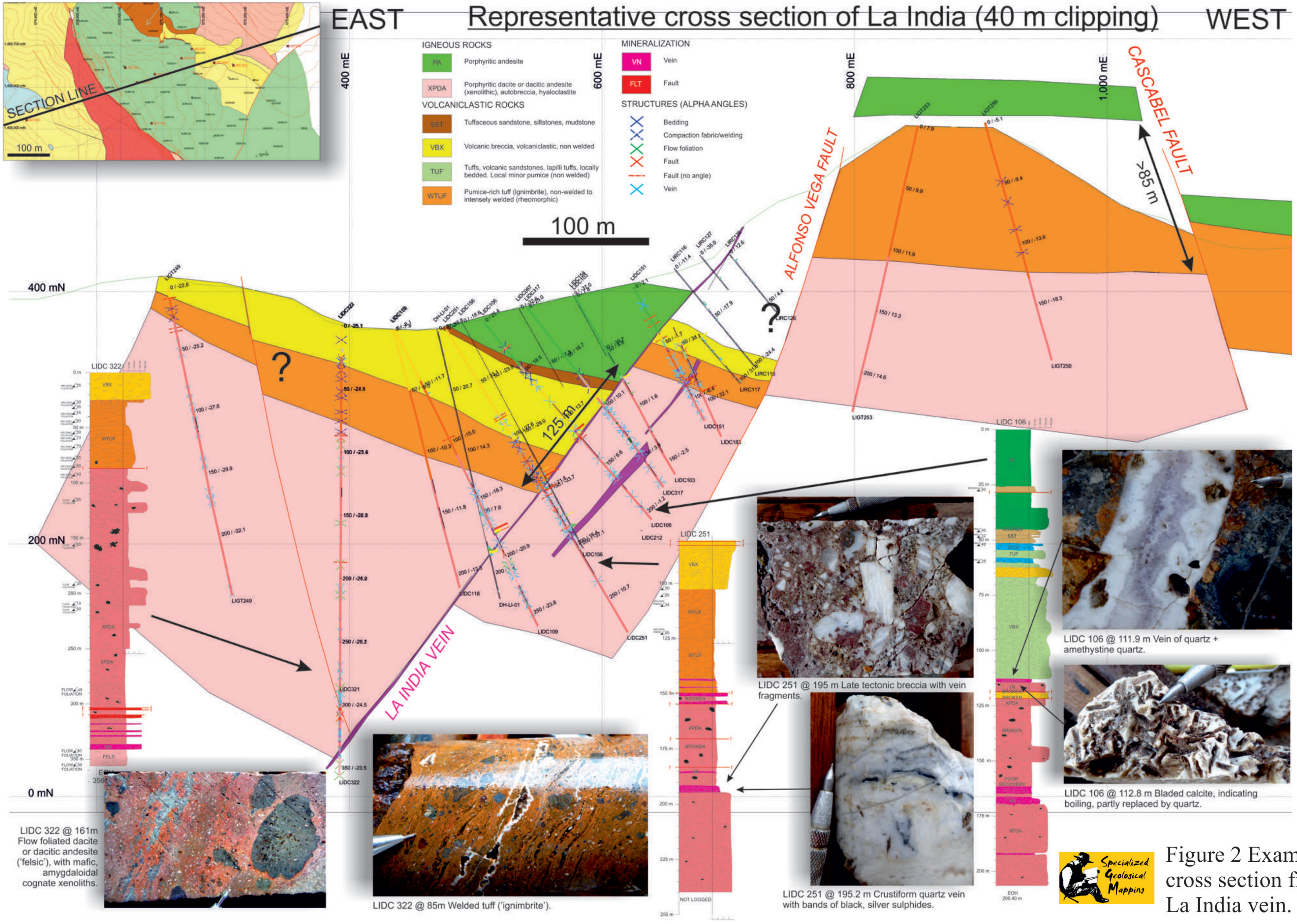
Hematitic fractures and local breccia

@ 111.5 m Scatt qz chalced vnlts

Calcite vnlt stockwork

Common hematitic f

Figure 1 Typical drill hole log from Cacao.



LIDC 322 @ 161m Flow foliated dacite or dacitic andesite ('felsic'), with mafic, amygdaloidal cognate xenoliths.

LIDC 322 @ 85m Welded tuff ('ignimbrite').

LIDC 251 @ 195 m Late tectonic breccia with vein fragments.

LIDC 251 @ 195.2 m Crustiform quartz vein with bands of black, silver sulphides.

LIDC 106 @ 111.9 m Vein of quartz + amethystine quartz.

LIDC 106 @ 112.8 m Bladed calcite, indicating boiling, partly replaced by quartz.

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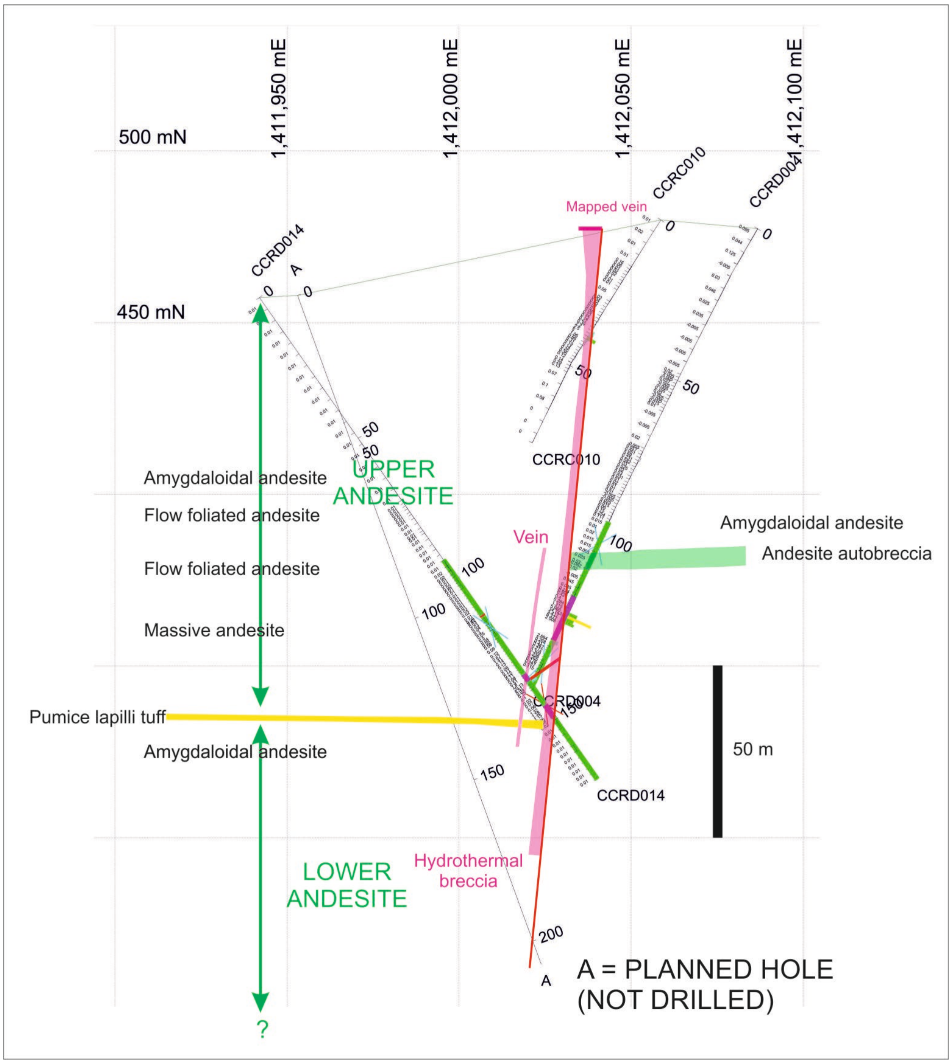
Figure 2 Example cross section from La India vein.



Exposures of flow banded dacite and welded tuffs in the major creek about 1.4 km East of Cacao (see Figure 3, modified from Allen, 2017) indicate that the felsic 'basement' must be at relatively shallow depth at Cacao. But it is not intersected in the deepest hole.

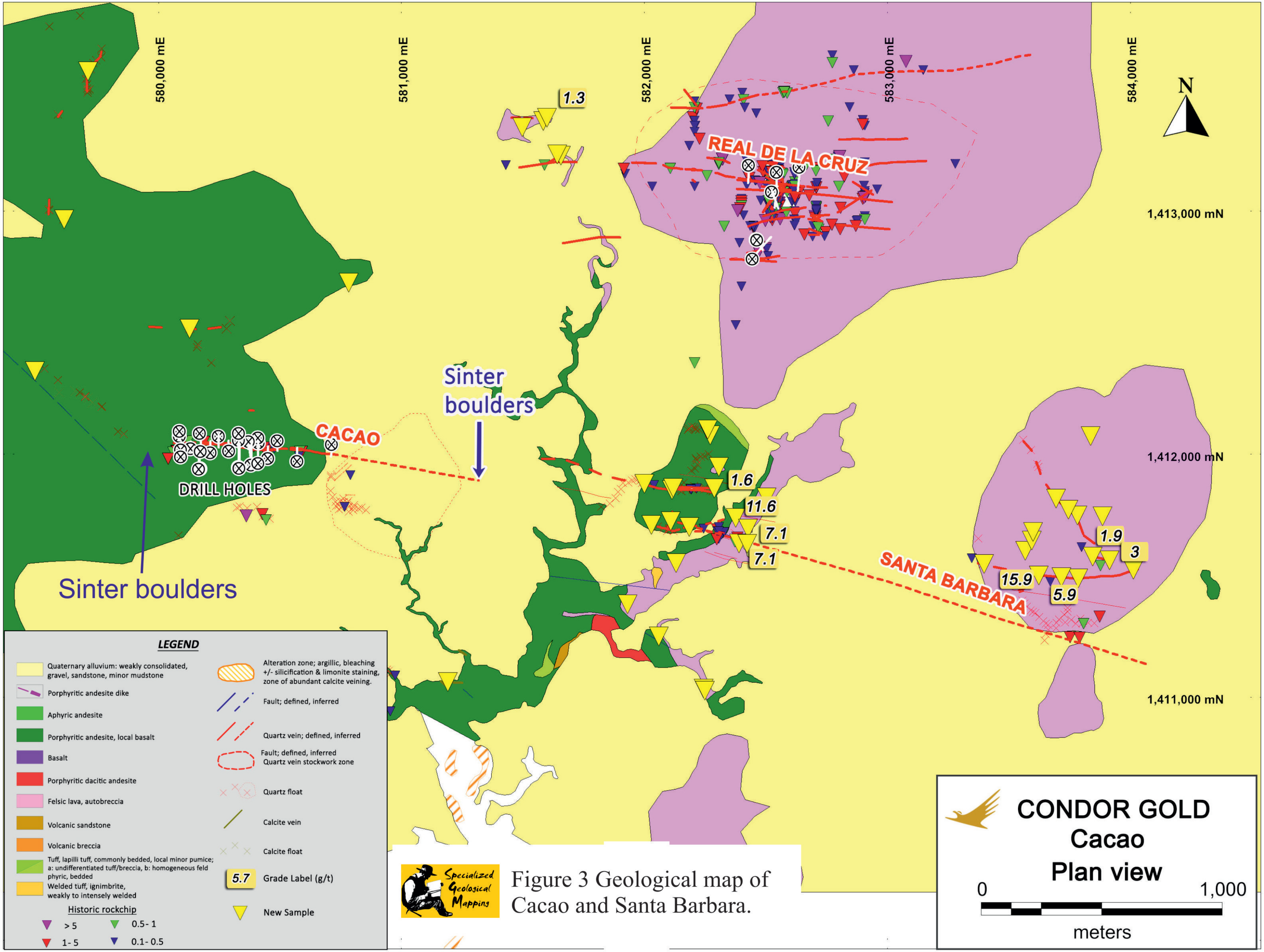
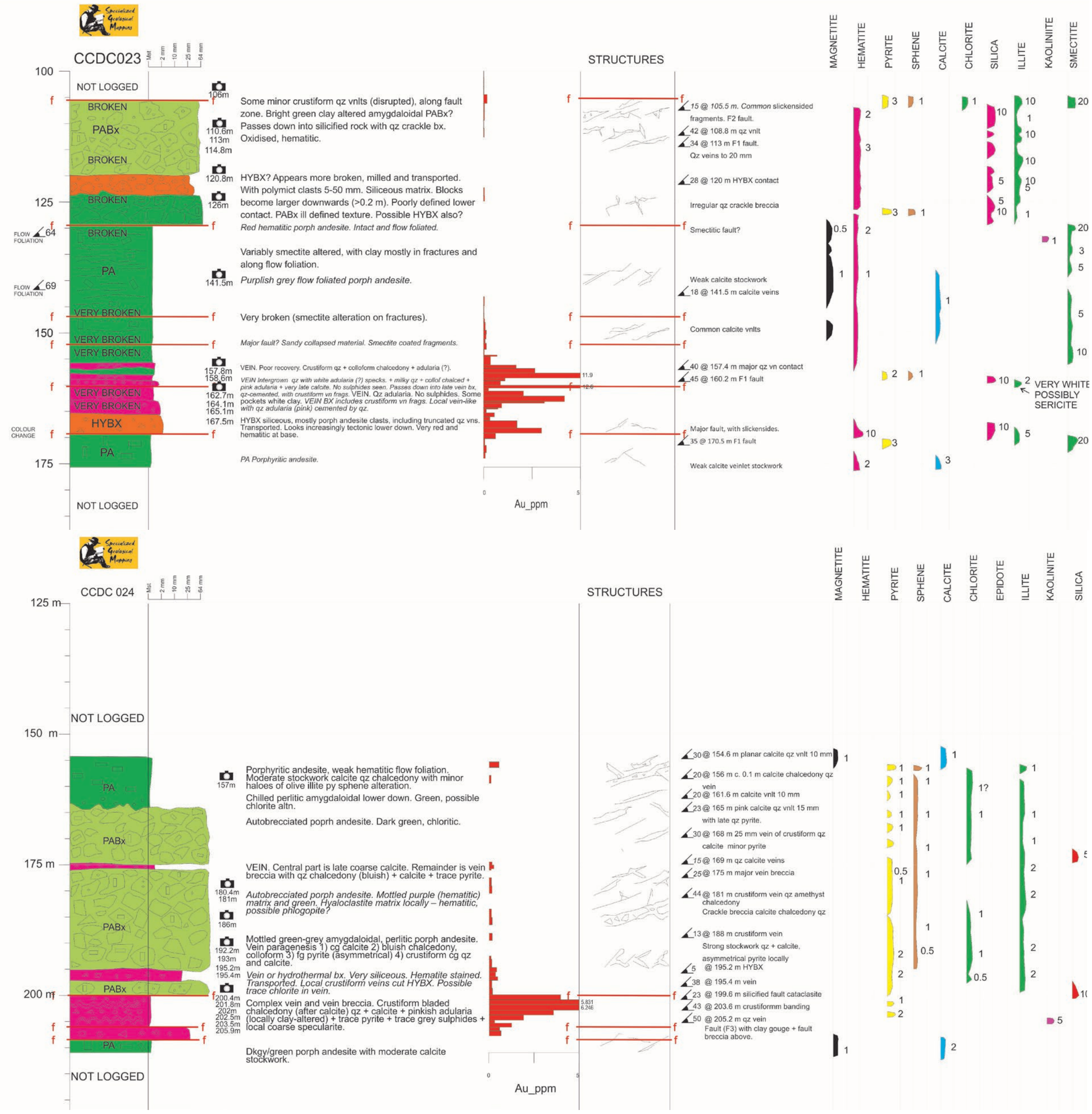


Figure 3 Geological map of Cacao and Santa Barbara.

3 STRUCTURE

The East-West zone of silicification, hydrothermal breccia and veining at Cacao dips very steeply South. Drilling demonstrates several significant post-mineral faults parallel to the Cacao structure, though none is directly exposed at surface. Unfortunately, some of the 2007 drill holes were drilled from the footwall (North side) and the angle was not optimum – there are some long intersections of very broken drill core where the drill holes followed these post-mineral faults.

More reliable holes, which were collared in the hanging wall and drilled towards the North, mostly show a major post-mineral fault defining the bottom of the ore zone. The upper side of the ore zone is much less tectonised and seems mostly intact. This is shown well in drill holes CCDC 023 and 24 (see below).



The Cacao ridge has a strike length of about 700 m long. At its East end it dives beneath a major alluvial fan, up to 20 m thick (Figure 3). Deeply eroded streams show that large boulders of silicified rock and sinter appear in the alluvium, at the projected extension of the Cacao structure (Figure 3; Allen, 2017).

Within a major drainage, about 1.6 km East of the Cacao ridge, several parallel veins are currently being exploited by informal miners. Grab samples give values up to 11.6 g/t Au. The structure(s) then disappears below more alluvium, before remerging at Santa Barbara (Figure 3). Vein float boulders at Santa Barbara show excellent epithermal textures and grab samples from splays give values up to 15.9 g/t Au.

The overall strike length of the Cacao-Santa Barbara vein system is about 4 km.

4 HYDROTHERMAL ALTERATION AND TEXTURES

The Cacao structure comprises a distinctive ridge that stands about 10-20 m above the surrounding plain. This ridge comprises hydrothermal breccia, with widespread chalcedonic alteration. The silicified core is flanked by quartz + kaolinite-altered hydrothermal breccia. The breccias are polymict and include dacite/rhyolite (derived from the underlying felsic volcanics?) and silicified andesite. Example textures are shown in Figure 4. Drilling suggests that this body of hydrothermal breccia funnels and narrows downwards.

There are widespread indicators of the original paleosurface. The most important comprises float blocks of probable hot spring sinter (Figure 4) on the East and West sides of the ridge (see Figure 3 for location). These float blocks are up to several metres in diameter. *(Note that sinters occur elsewhere in the District, in the Santa Rosa del Peñón caldera, to the West of La India. It is not clear if they are the same age.)*

Other near-surface features include cavities filled by horizontally bedded chalcedonic sediment and chalcedony. These geopetal structures are common at the tops of epithermal systems (Sillitoe, 2015). The finest chalcedony probably accumulated by deposition of colloidal silica during sharp cooling due to vapor loss and boiling. Silica solubility was exceeded, and the amorphous colloids formed as silica gel – this is commonly ‘bedded’ (the geopetal spirit levels). Hydrothermal currents transported sediments and caused features such as graded bedding in the coarser chalcedonic sediments.

Drilling demonstrates that the wide (up to 30 m) zone of hydrothermal breccia narrows and give way downwards to classic crustiform epithermal veins. These veins are identical to those exposed at the ground surface at La India. The best vein textures occur in CCDC 024 (Figure 5). This contains a single vein about 3.3 m wide (true thickness). A hydrothermal breccia in the hanging wall of the vein brings the principal mineralised zone to about 5.5 m (true thickness). The vein shows a remarkable number of hydrothermal ‘events’; there are early hydrothermal breccias that are cut by subsequent crustiform veins. There are also hydrothermal breccias with crustiform vein fragments.

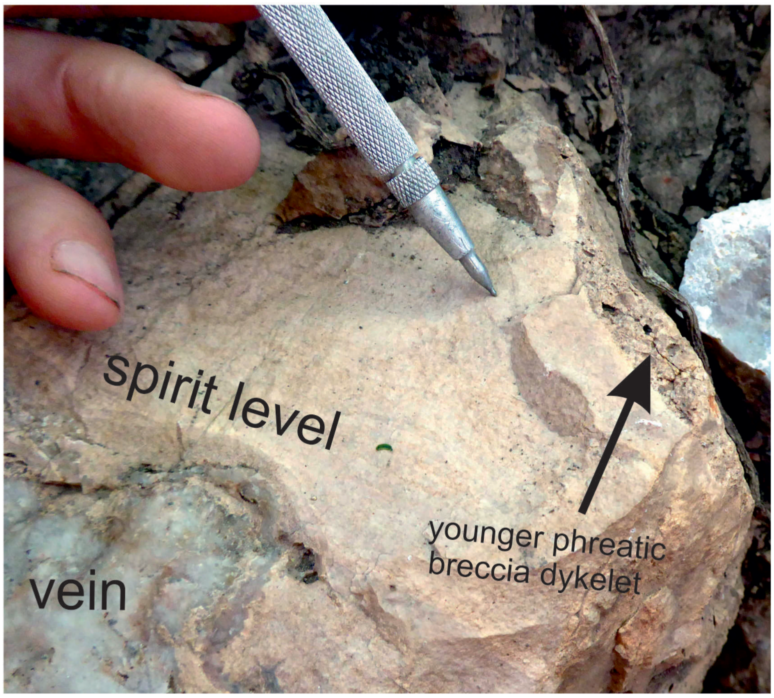
The vein itself displays a host of textures (Figure 5). These include: 1) bladed calcite, a classic indicator of boiling (normally associated with gold deposition), replaced by amethystine quartz; 2) Bands of adularia; 3) colloform chalcedony. All are typical of the boiling levels of hydrothermal systems. These same features are widespread at La India, but not at America or Mestiza, where vein textures are much simpler (commonly spongy intergrowths of calcite and quartz). The vein intersection in CCDC 024 closely resembles vein textures in deep holes in the Southeast of La India (e.g. LIDC 324; 11.4 m at 7.4 g/t gold-equivalent). Both display chalcedony with an apple green tinge.

Details. The vein zone in CCDC 020 (Figure 6), one of the deeper intersections, comprises a major footwall fault with poor recovery. The hanging wall of the fault includes a good crustiform, dilational vein with zoned (white-translucent) euhedral quartz, colloform chalcedony, hematite and late coarse calcite (not replaced by quartz). There is trace illite in the vein. This vein runs up to 5 g/t Au. Higher in the hanging wall there is a phreatic (?) breccia which includes calcite vein fragments and has siliceous sediment spirit levels (geopetal structures) similar to those at Central Breccia. The breccia passes up into a massive, crudely banded calcite vein.

The wall rocks in CCDC 020 show extensive weak calcite + pyrite + clay (illite?) + sphene alteration. Pyrite rises to about 2% close to the vein. The abundance of calcite, both replacing phenocrysts and in amygdales, suggests that the hydrothermal fluids were alkaline and reduced. The ‘illite’ may well be mixed layer illite-smectite.

CCRD 004 displays good grades, but core is very broken, with poor recovery. Gold occurs in a deeply oxidised and broken syn-mineral (?) breccia with common vein fragments. The quartz is sugary. There is also a post-mineral fault with smectite.

CCRD 005 cut a narrow vein of granular quartz and chalcedony, which seems to be barren. There is an andesitic autobreccia (?) with quartz-rich matrix, overprinted by a stockwork of fine-grained quartz and chalcedony veinlets. The drill direction was not optimal and it is possible



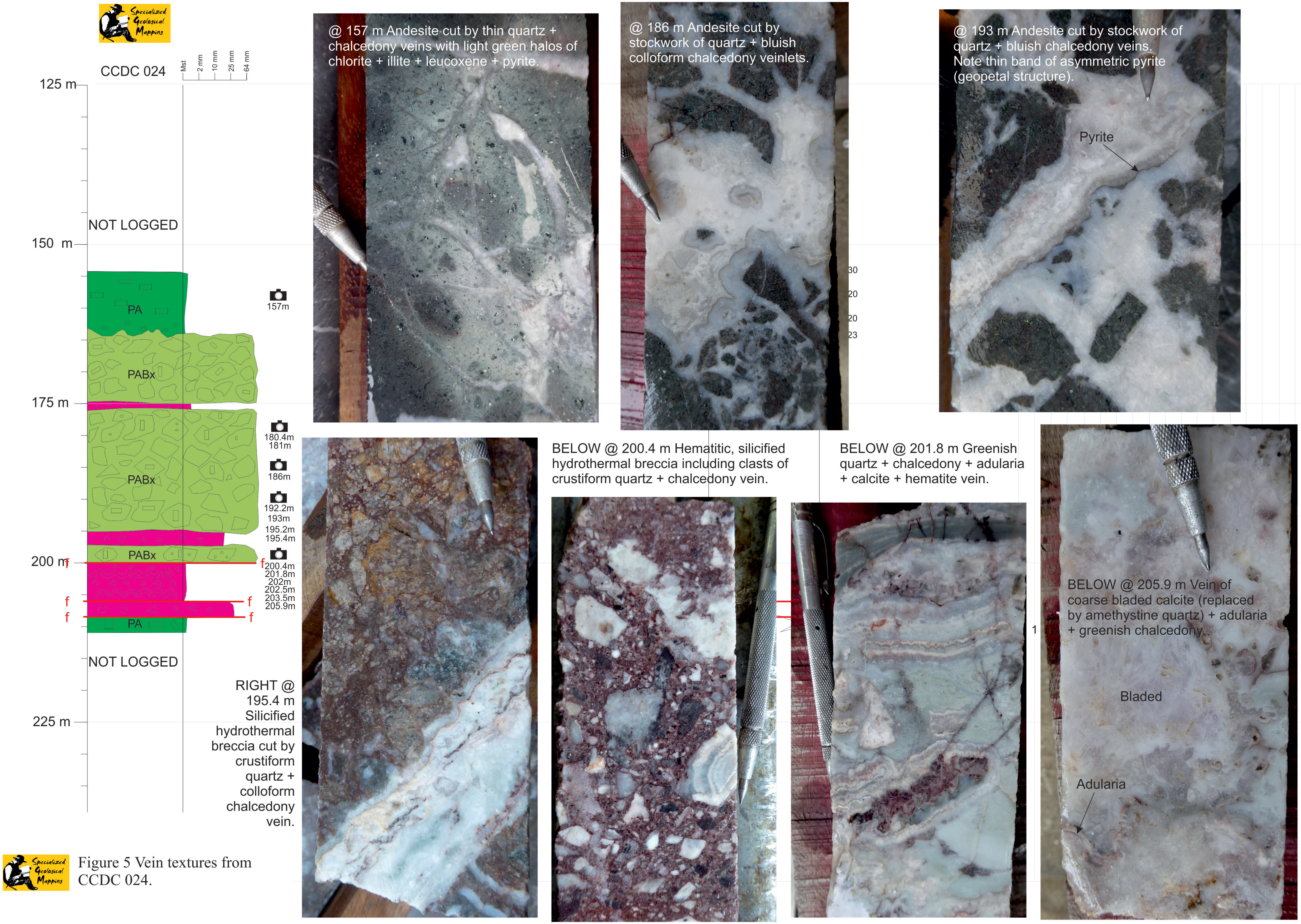
ABOVE. An epithermal vein is cut by horizontally bedded siliceous sediment ('spirit level' or geopetal structure), in turn cut by a narrow phreatic breccia dike.

ABOVE. Chalcedonic hydrothermal breccia is cut by a spirit level of finely banded chalcedonic sediment.

ABOVE & BELOW. Silicified hydrothermal breccia with some kaolinite-altered clasts.

ABOVE. Large float boulders of sinter (siliceous hot spring deposit).

Figure 4 Hydrothermal textures from Cacao.



@ 157 m Andesite cut by thin quartz + chalcedony veins with light green halos of chlorite + illite + leucoxene + pyrite.

@ 186 m Andesite cut by stockwork of quartz + bluish colloform chalcedony veinlets.

@ 193 m Andesite cut by stockwork of quartz + bluish chalcedony veins. Note thin band of asymmetric pyrite (geopetal structure).

RIGHT @ 195.4 m Silicified hydrothermal breccia cut by crustiform quartz + colloform chalcedony vein.

BELOW @ 200.4 m Hematitic, silicified hydrothermal breccia including clasts of crustiform quartz + chalcedony vein.

BELOW @ 201.8 m Greenish quartz + chalcedony + adularia + calcite + hematite vein.

BELOW @ 205.9 m Vein of coarse bladed calcite (replaced by amethystine quartz) + adularia + greenish chalcedony.

Figure 5 Vein textures from CCDC 024.

the hole was stopped before reaching the main vein.

CCRD 006 is very encouraging. The footwall (N wall) displays a moderate stockwork and minor crackle breccia of quartz + calcite + chalcedony veinlets. Individual veins are up to 0.2 m, with a variety of directions. The main vein intersection, about 125 m depth, comprises massive white calcite (locally bladed) + rare bands of fine-grained pyrite. The vein locally comprises a mix of dogs-tooth (scalenohedral) calcite and colloform chalcedony. Wall rock alteration increases towards the end of the hole, to about 2% disseminated pyrite. But the hole was stopped only a few metres below the vein intersection. Maybe for technical reasons? There is a 104 g/t Au result from the massive vein. There was no sign of a post-mineral fault. It may have jumped to the hanging wall side of the vein?

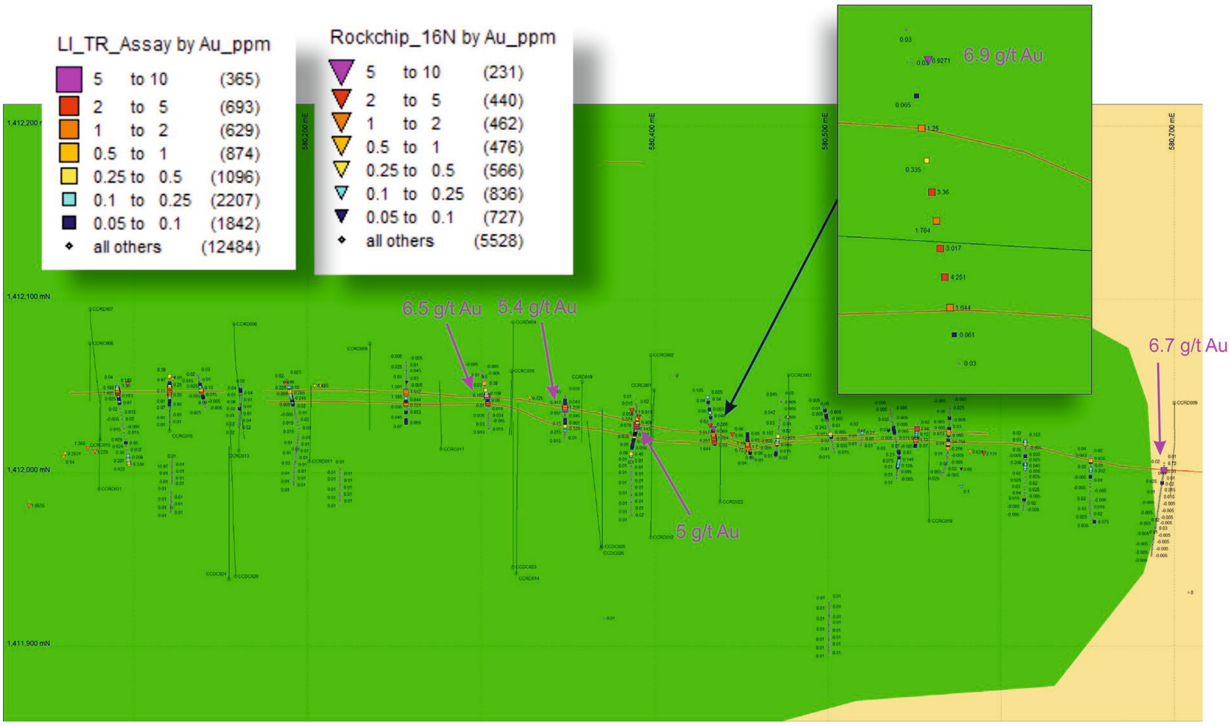
CCRD 013 was a shallow hole with no assay results above 1 g/t Au. A major post mineral fault defines the top of the zone. The footwall comprises a hydrothermal breccia with a fine-grained quartz + pyrite matrix. Clasts of andesite show clay alteration. There is late drusy quartz. The hydrothermal breccia is locally 'sandy' resembling the phreatic breccias from Central Breccia. It passes down into a massive vein with colloform chalcedony + fine grained quartz + pyrite + minor late drusy quartz.

CCRD 019. This core is very broken, with poor recovery. The decent grades (up to 6 g/t Au) come from a vein of fine-grained quartz and chalcedony, with local disseminated pyrite. Only small vein fragments are present in the core box. Below 50 m depth there is a long run of breccia (poor recovery). The top part is clearly syn-mineral vein breccia, with kaolinite-altered clasts cemented by sugary massive quartz (or cristobalite?). Lower down is a hydrothermal breccia with numerous oxidised red porphyritic andesite clasts. It includes scattered small vein clasts. The hole is interesting. There is no single good vein, but a long run of probable phreatic breccia. This looks high level. The kaolinite and possible cristobalite imply an acid sulphate overprint at the top of an epithermal vein system.

CCRD 022 also shows poor recovery and broken core. A vein runs 2.3 g/t Au and comprises colloform chalcedony, fine quartz and local coarse euhedral quartz. Local bladed calcite is replaced by quartz. This is a typical boiling level texture and occurs only 75 m below the surface. However, this texture is rare in core from Cacao.

5 GOLD MINERALISATION

Rock sampling and trenching at Cacao before drilling in 2007 showed some interesting values, with the highest grades along the axis of the ridge (see screenshot below). Most of the chalcedonic breccias are low grade (sub 1 g/t Au). But spikes in grade to nearly 7 g/t Au mostly coincide with narrow, discontinuous crustiform quartz veins.



ABOVE. Rock (triangles, grab) and trench (squares, 1 m long samples) gold assays from Cacao. Drill hole collars and traces are also shown.

Figure 6 shows a long section of Cacao, with significant intersections labelled. *(Note that some of the 2007 drill holes stopped short of the vein zone or were drilled from the footwall.)* The highlighted intersections were all drilled from the hanging wall and mostly come from the 2016 program.

Figure 6 shows gold-equivalent values (which include silver), but the overall contribution from silver is low. Unlike many epithermal deposits, the silver:gold ratio at Cacao is low (typically 1-5, increasing to 10 in deeper holes). There is no visible gold. *(Visible gold is very rare in the La India District.)*

The highest gold grades (up to 104.9 g/t Au over 0.85 m) occur within the thicker veins; the stockworks in the hanging wall are generally low grade or barren, reflecting their simpler textures. However, some of the hydrothermal breccias in the shallower drill holes also show elevated grades.

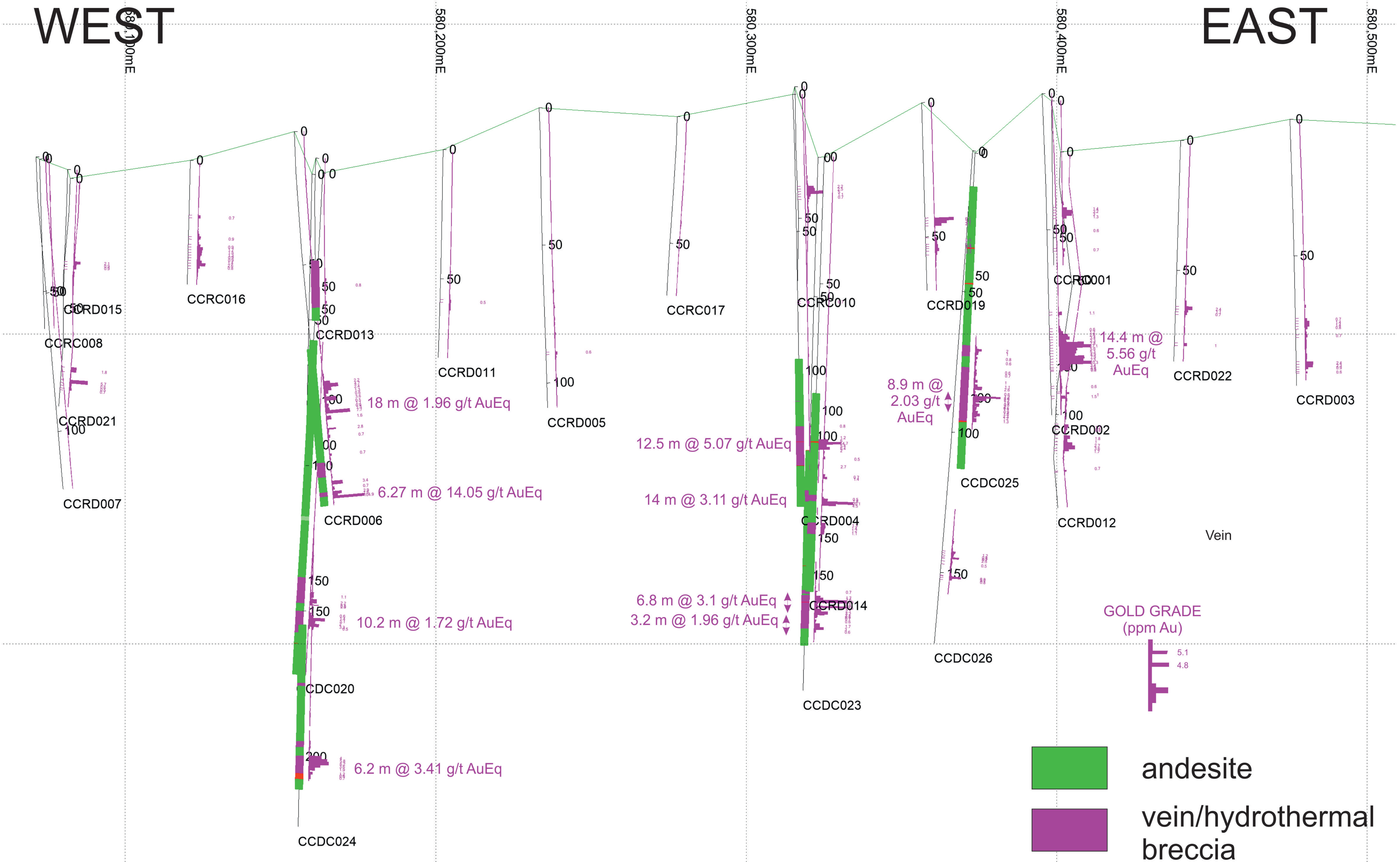


Figure 6 Long section of the Cacao Vein. Portions relogged by the author are shown with lithology colours on the hole trace. Gridlines at 100 m intervals.

6 INTERPRETATION

All the evidence suggests that the original ground surface is preserved at Cacao. This contrasts with La India, where the vein system has been exposed by erosion. At Cacao the hydrothermal fluids flowed out onto the ground surface and formed siliceous hot springs (sinter). There is no significant vein at surface.

I interpret the hydrothermal breccias at Cacao as phreatic breccias, formed by the interaction of hot water and cold rock. Periodic choking of the conduits by opal accumulation (subsequently transformed to chalcedony) resulted in periodic over-pressuring and explosions. Some of the breccia may have been thrown out onto the original ground surface, to form an apron of ejecta. The widespread kaolinite at surface probably reflects an acid sulfate (‘steam-heated’) overprint, a common feature of the tops of epithermal systems (Sillitoe, 2015). Open spaces were filled by hydrothermal opal and sediment, forming the geopetal structures.

Because there is no major continuous vein at surface, and because the chalcedonic rock is not favourable for mining, the informal miners are not active at Cacao. However, the drilling clearly shows how a phreatic hydrothermal breccia funnels down into a traditional, continuous crustiform vein with moderate to high grade gold. The sheer variety of hydrothermal events and textures within the main conduit (vein) is remarkable and very encouraging. Some of these events were barren, but others introduced ore-grade gold. These are significant positive features for Cacao. The target shows every sign of being an entirely preserved epithermal system with good permeability and repeated reactivation.

At La India and Mestiza there is a clear structural control on the best gold grades. This forms steeply plunging oreshoots which contribute hugely to project economics. In both places the oreshoots occur where the principal vein bends (jogs) in a fault system with a component of strike slip. This is almost certainly true at Cacao, but it is early days since there is insufficient drilling to define the oreshoots.

Mapping indicates that the contact between felsic volcanic rocks and the overlying andesites must be very close (perhaps 200 m below ground surface?). *(The contact occurs about 410-420 m elevation in the dam river valley; this is only about 50 m below ground surface at Cacao.)* At La India the brittle felsic volcanics (glassy welded tuffs, dacites, obsidian) show much wider veins and higher gold grades than the andesite cover. There is therefore great potential for Cacao to host a thicker, higher grade vein at relatively shallow depth. This has not yet been drill-tested.

7 RECOMMENDATIONS

The full potential of Cacao has not been tested. The vein system is almost 4 km long, making it one of the longest veins in the La India District. There are high grades from deeper holes which demonstrate the clear potential. There is also a good chance that the main boiling level, with the highest grades, has not been drilled yet. The vein thicknesses are comparable to the thickest veins seen at La India, which is very encouraging. The vein textures are very similar to the bonanza grade deeper drill holes in the Southeast of La India (e.g. LIDC 324).

Depending on budgets, future drilling should be two-pronged; 1) to increase the known resource at Cacao by infill and stepping down to give 50 m piercement points. This will also help us understand the shapes of oreshoots. 2) Widely spaced step-outs along the projected extension of the vein beneath the alluvium. These will give an idea of the potential of Cacao to host a 1 Moz gold resource.

The suggested holes, a total of just under 5000 m, are shown in the table below and in Figure 7. They are also discussed in a video of the 3D workspace (Appendix 2).

HOLE_ID	Drill order	East	North	Elevation	Azimuth	Inclination	Depth	Platform
CCDC027	WP_Cacao1	580234	1411900	454	13	-48	200	A
CCDC028	WP_Cacao2	580234	1411900	454	15	-60	250	A
CCDC029	WP_Cacao3	580234	1411900	454	350	-50	210	A
CCDC030	WP_Cacao4	580234	1411900	454	347	-60	250	A
CCDC031	WP_Cacao5	580234	1411900	454	344	-70	325	A
CCDC032	WP_Cacao6	580321	1411891	455	0	-58	250	B
CCDC033	WP_Cacao7	580321	1411891	455	0	-66	300	B
CCDC034	WP_Cacao8	580372	1411900	456	12	-50	210	C
CCDC035	WP_Cacao9	580372	1411900	456	358	-58	230	C
CCDC036	WP_Cacao10	580372	1411900	456	0	-68	310	C
CCDC037	WP_Cacao11	580433	1411930	455	2	-50	150	D
CCDC038	WP_Cacao12	580433	1411930	455	2	-62	195	D
CCDC039	WP_Cacao13	580433	1411930	455	2	-70	280	D
CCDC040	WP_Cacao14	580562	1411928	458	0	-48	175	E
CCDC041	WP_Cacao15	580562	1411928	458	0	-70	270	E
CCDC042	WP_Cacao16	580818	1411900	444	10	-50	175	F
CCDC043	WP_Cacao17	580818	1411900	444	0	-70	270	F
CCDC044	WP_Cacao18	581045	1411875	442	15	-45	100	G
CCDC045	WP_Cacao19	581045	1411875	442	15	-65	150	G
CCDC046	WP_Cacao20	581971	1411825	442	22	-45	200	H
CCDC047	WP_Cacao21	581941	1411651	442	20	-45	150	J
CCDC048	WP_Cacao22	581941	1411651	442	20	-60	300	J
						Total	4950	

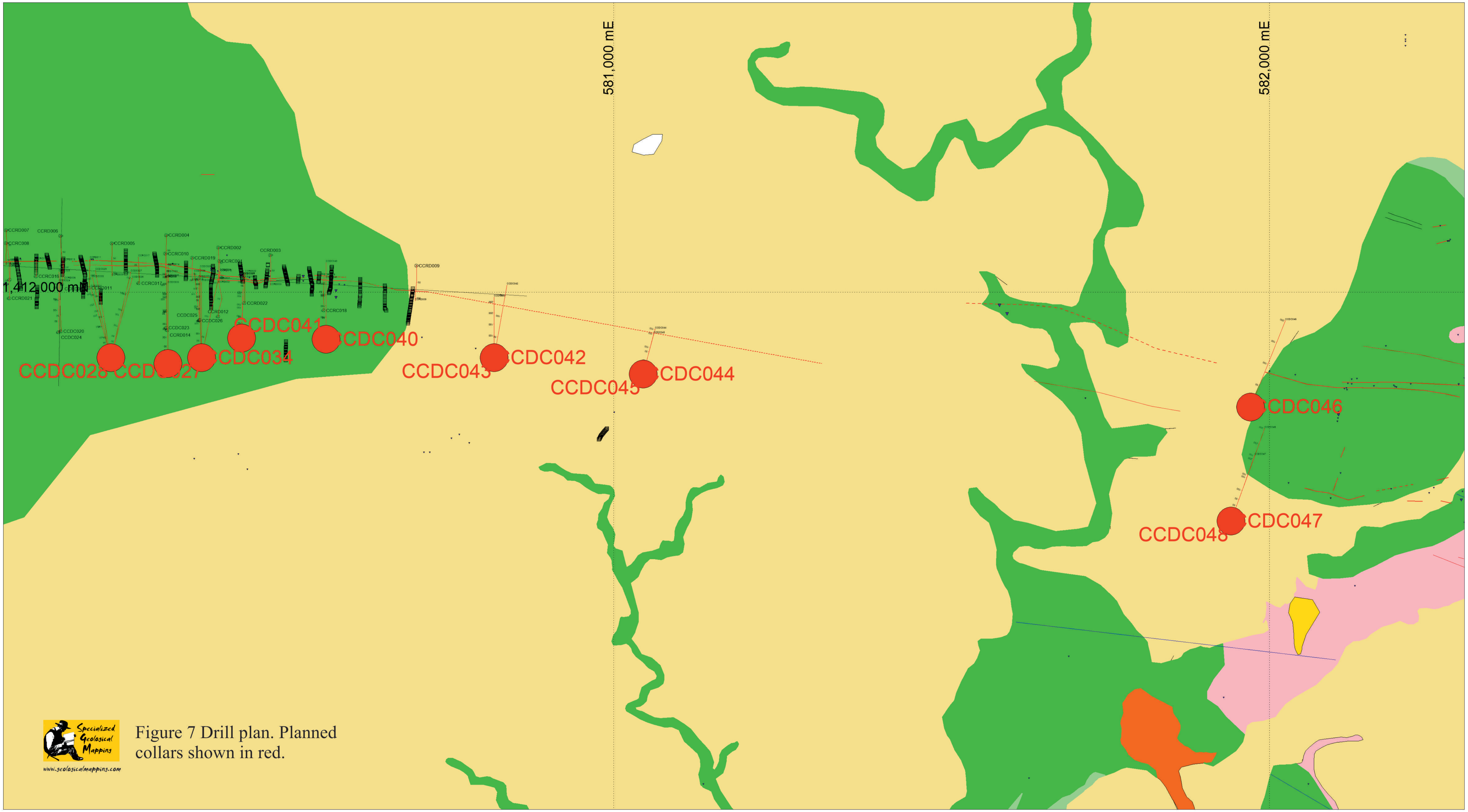


Figure 7 Drill plan. Planned collars shown in red.

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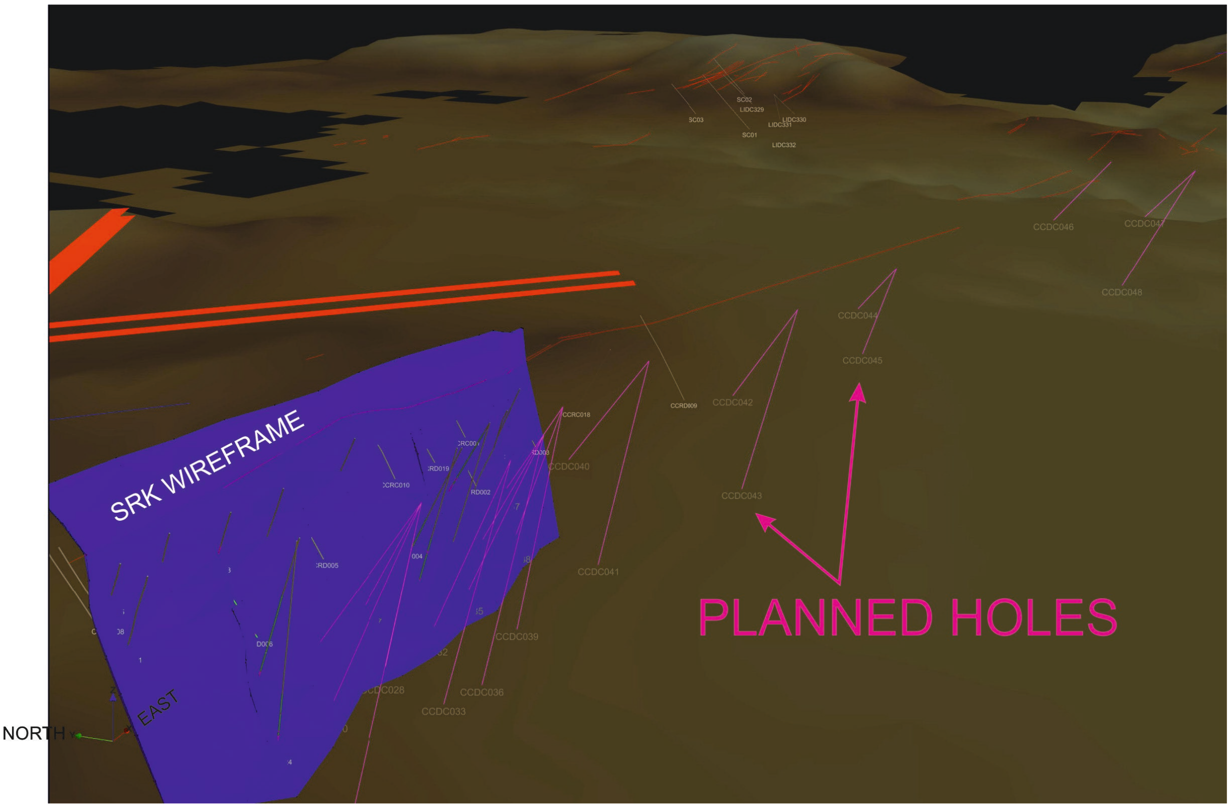
This Discover3D screenshot also shows the planned drill holes.



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9 DATA AND SIGNATURE PAGE

The author, Warren Pratt (PhD CGeol) is a Director of Specialised Geological Mapping Ltd, a consulting company based in the UK. He is a graduate of Hull University, UK (BSc Hons Geology, First Class, 1986) and the University College of Wales, Aberystwyth, UK (PhD Structural Geology, 1990). He has practiced his profession continuously for the last 29 years and is experienced in epithermal, porphyry Cu/Au, orogenic/shear zone Au and VHMS deposits. Warren Pratt is a Competent Person as defined in Chapter 19 of the UKLA Sourcebook, Chartered Geologist (25 years), Fellow of the Geological Society, and Fellow of the Society of Economic Geologists. He won the President's Award of the Geological Society in 1994 for the preparation of detailed geological maps.

The author has detailed knowledge of the assets held by Condor Gold plc in Nicaragua. The author holds options in Condor Gold plc. The only other commercial interest in relation to Condor Gold plc is the right to charge professional fees for this report.

Dated at Urquhart, 04 June 2019

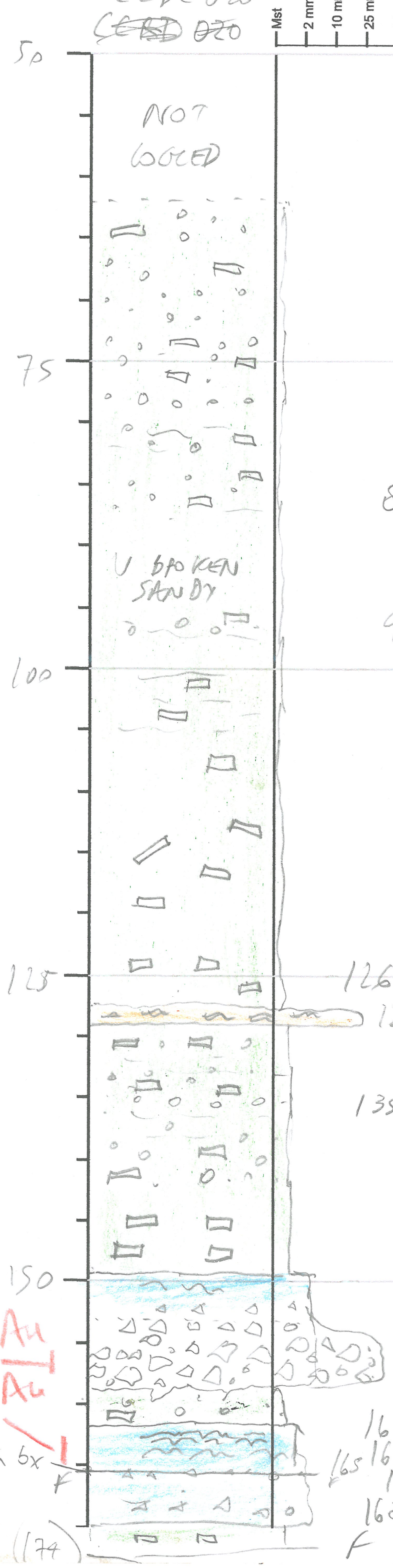
signed

Warren Pratt, PhD, CGeol

Appendix 1
A3 drill logs

Specialized Geological Mapping

CCDC 020
~~CCDC 020~~



STRUCTURES

78.5 Chilled glassy perlitic amygdaloidal PA. local hyaloclastite
Locally flow foliated

86.5

Irreg veins chalced + euhedral qz + calcite

96.7 Flow fol amygdaloidal PA

Flow fol PA reddish grey

Local crackle bx with colloform chalced + euhedral + fg qz

Purplish grey PA. Feld phenos 0.5 - 3mm mod isolated. Vfg gd. Almost glassy.

Vein stock and crackle bx early qz late coarse calcite

126 Chilled vfg PA. to Olive green, glassy

128.3 Pumice lapilli tuff. Siliceous

135.8 Flow fol amygd PA - siliceous. qz/calcite amygdales

Chilled glassy PA. Amygdaloidal

Vein to 0.5m fg qz / euhedral qz / coarse calcite

150.6 (Massive vein crudely banded calcite local rock frags (increasing downwards). Passes into

153.6 phreatic bx? with siliceous fgn sediment fill; Includes calcite vein frags

162 PA - glassy amygdaloidal

165 164.8 (Vein crustiform zoned euhedral qz, coll chalced, hematite

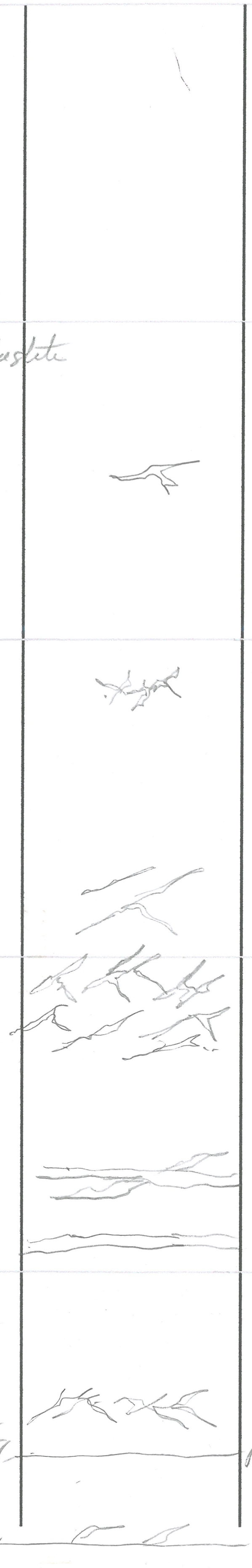
165.4 - Some late coarse calcite /. Trace illite in vein.

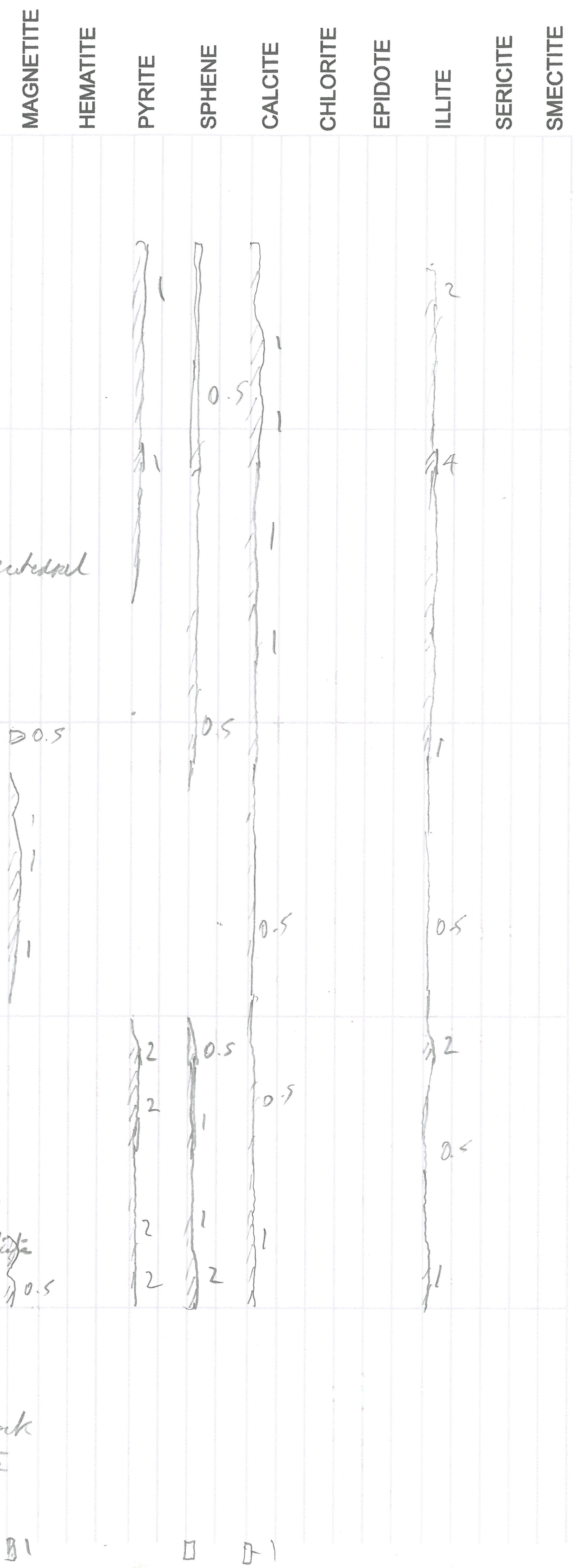
168.8 Vein bx - local coarse calcite/poss dolomite?

Strong ~~Lqz chalced~~ stock calcite with hematite

F ∠45 syn-mineral fault

F 174 Major fault - Sandy core to EOH.





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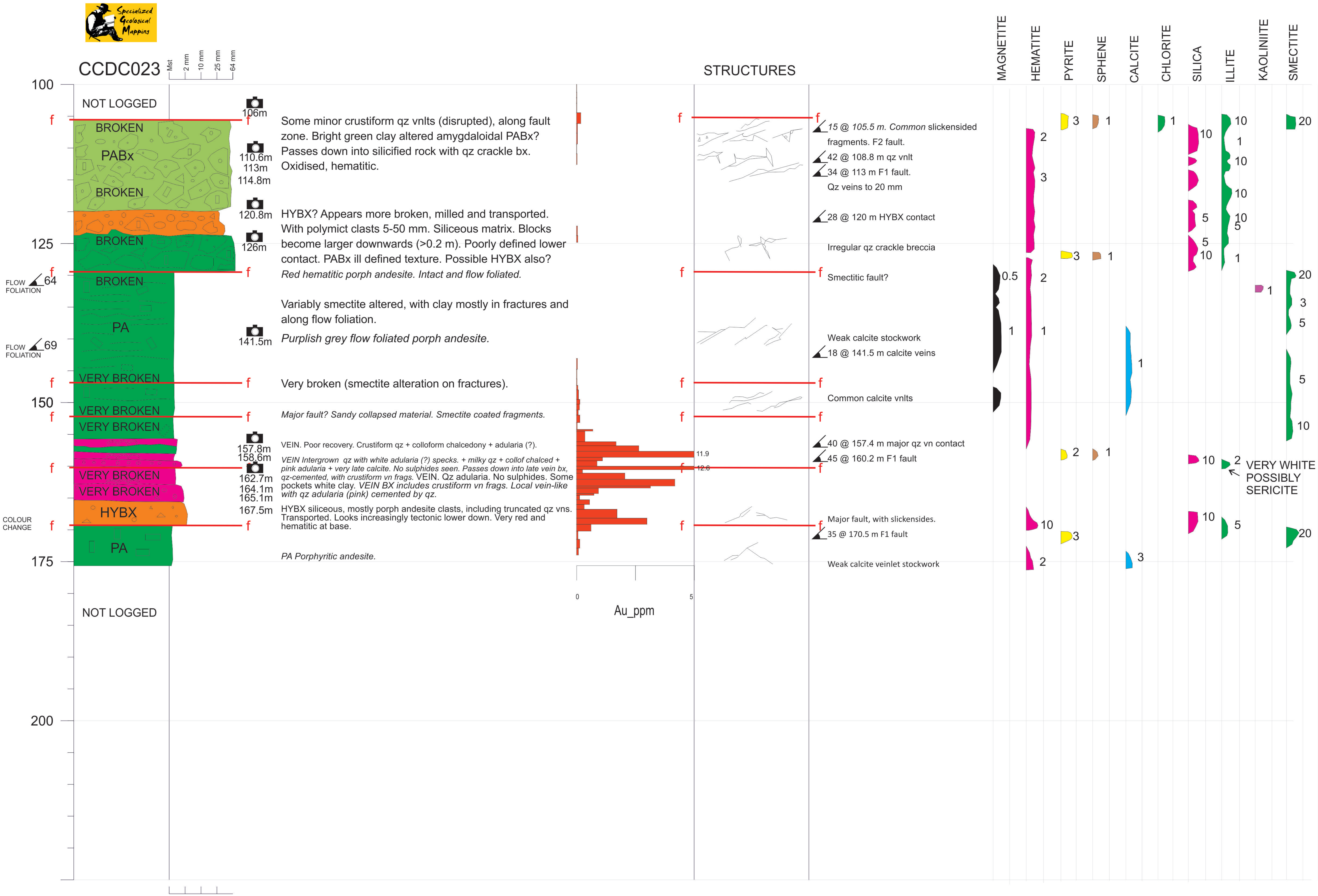


Some minor crustiform qz vnlts (disrupted), along fault zone. Bright green clay altered amygdaloidal PABx? Passes down into silicified rock with qz crackle bx. Oxidised, hematitic.

HYBX? Appears more broken, milled and transported. With polymict clasts 5-50 mm. Siliceous matrix. Blocks become larger downwards (>0.2 m). Poorly defined lower contact. PABx ill defined texture. Possible HYBX also?

Red hematitic porph andesite. Intact and flow foliated.

Variably smectite altered, with clay mostly in fractures and along flow foliation.

Purplish grey flow foliated porph andesite.

Very broken (smectite alteration on fractures).

Major fault? Sandy collapsed material. Smectite coated fragments.

VEIN. Poor recovery. Crustiform qz + colloform chalcedony + adularia (?).

VEIN Intergrown qz with white adularia (?) specks. + milky qz + collof chalced + pink adularia + very late calcite. No sulphides seen. Passes down into late vein bx, qz-cemented, with crustiform vn frags. VEIN. Qz adularia. No sulphides. Some pockets white clay. *VEIN BX includes crustiform vn frags. Local vein-like with qz adularia (pink) cemented by qz.*

HYBX siliceous, mostly porph andesite clasts, including truncated qz vns. Transported. Looks increasingly tectonic lower down. Very red and hematitic at base.

PA Porphyritic andesite.

15 @ 105.5 m. Common slickensided fragments. F2 fault.

42 @ 108.8 m qz vnlt

34 @ 113 m F1 fault.

Qz veins to 20 mm

28 @ 120 m HYBX contact

Irregular qz crackle breccia

Smectitic fault?

Weak calcite stockwork

18 @ 141.5 m calcite veins

Common calcite vnlts

40 @ 157.4 m major qz vn contact

45 @ 160.2 m F1 fault

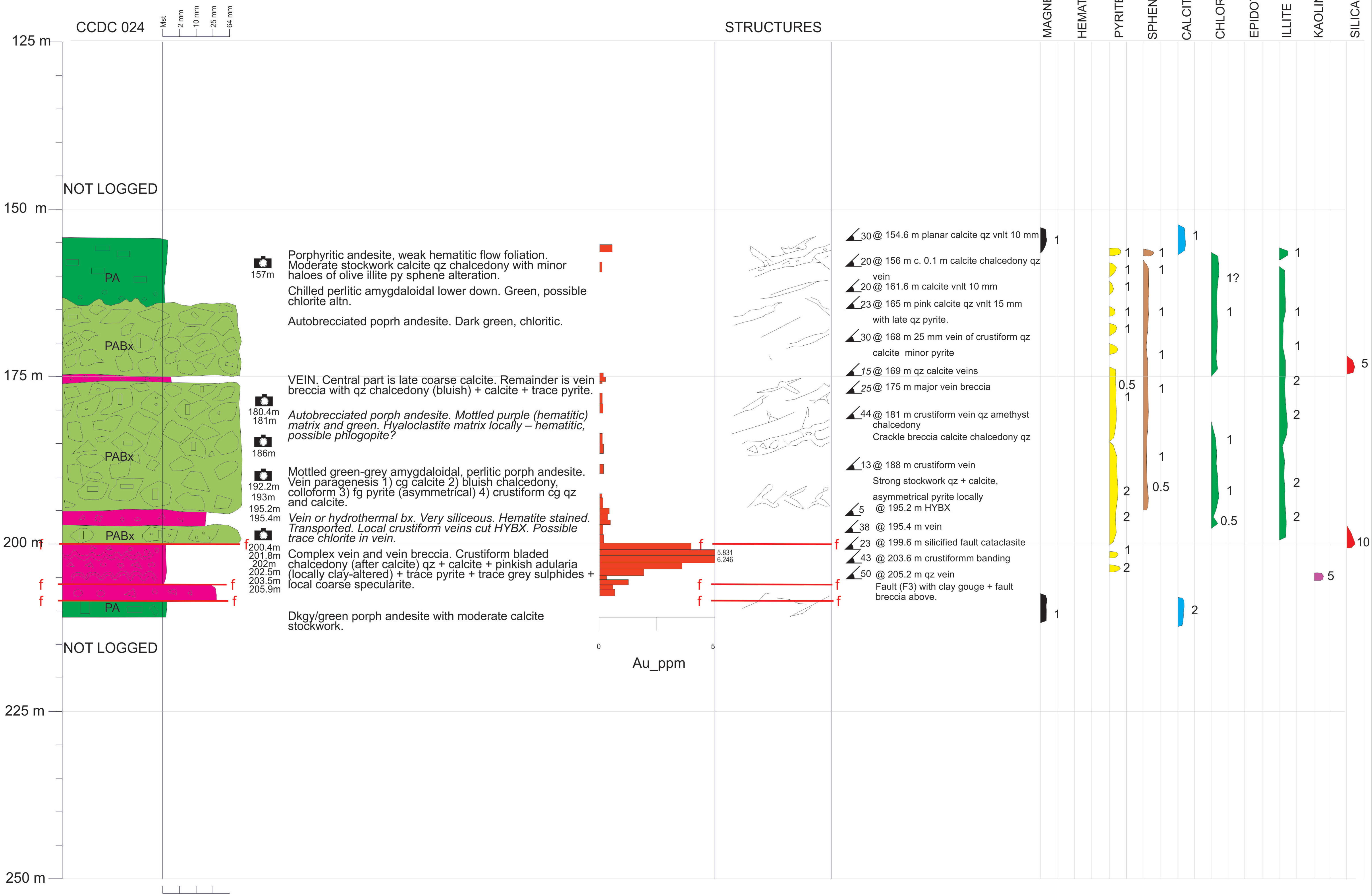
Major fault, with slickensides.

35 @ 170.5 m F1 fault

Weak calcite veinlet stockwork

Specialized Geological Mapping

CCDC 024



Porphyritic andesite, weak hematitic flow foliation. Moderate stockwork calcite qz chalcedony with minor haloes of olive illite py sphene alteration.

Chilled perlitic amygdaloidal lower down. Green, possible chlorite altn.

Autobrecciated poprh andesite. Dark green, chloritic.

VEIN. Central part is late coarse calcite. Remainder is vein breccia with qz chalcedony (bluish) + calcite + trace pyrite.

Autobrecciated porph andesite. Mottled purple (hematitic) matrix and green. Hyaloclastite matrix locally – hematitic, possible phlogopite?

Mottled green-grey amygdaloidal, perlitic porph andesite. Vein paragenesis 1) cg calcite 2) bluish chalcedony, colloform 3) fg pyrite (asymmetrical) 4) crustiform cg qz and calcite.

Vein or hydrothermal bx. Very siliceous. Hematite stained. Transported. Local crustiform veins cut HYBX. Possible trace chlorite in vein.

Complex vein and vein breccia. Crustiform bladed chalcedony (after calcite) qz + calcite + pinkish adularia (locally clay-altered) + trace pyrite + trace grey sulphides + local coarse specularite.

Dkgy/green porph andesite with moderate calcite stockwork.

30 @ 154.6 m planar calcite qz vnlt 10 mm

20 @ 156 m c. 0.1 m calcite chalcedony qz vein

20 @ 161.6 m calcite vnlt 10 mm

23 @ 165 m pink calcite qz vnlt 15 mm with late qz pyrite.

30 @ 168 m 25 mm vein of crustiform qz calcite minor pyrite

15 @ 169 m qz calcite veins

25 @ 175 m major vein breccia

44 @ 181 m crustiform vein qz amethyst chalcedony
Crackle breccia calcite chalcedony qz

13 @ 188 m crustiform vein
Strong stockwork qz + calcite,
asymmetrical pyrite locally

5 @ 195.2 m HYBX

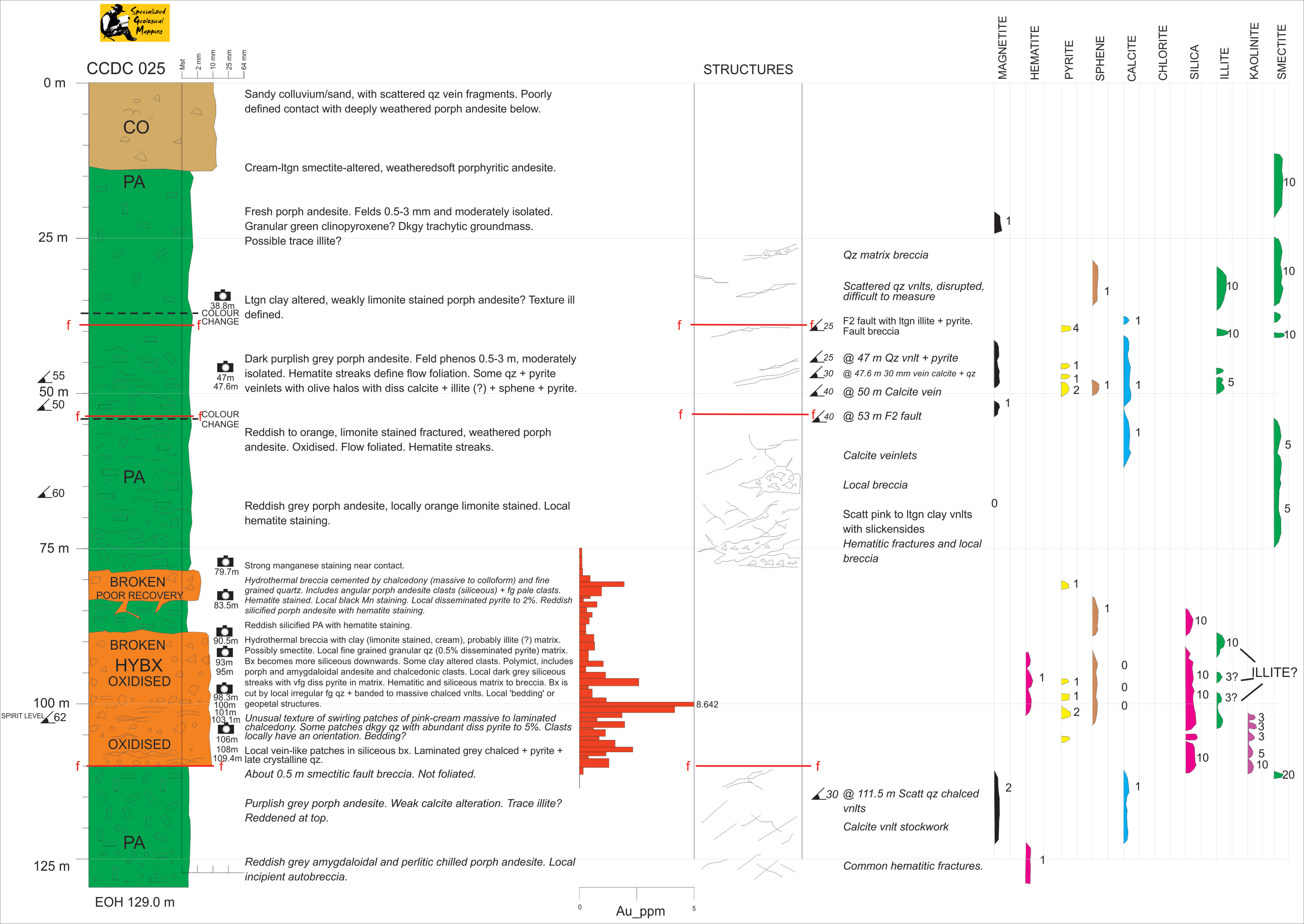
38 @ 195.4 m vein

23 @ 199.6 m silicified fault cataclasite

43 @ 203.6 m crustiformm banding

50 @ 205.2 m qz vein
Fault (F3) with clay gouge + fault breccia above.

CCDC 025



Sandy colluvium/sand, with scattered qz vein fragments. Poorly defined contact with deeply weathered porph andesite below.

Cream-ltgn smectite-altered, weatheredsoft porphyritic andesite.

Fresh porph andesite. Felds 0.5-3 mm and moderately isolated. Granular green clinopyroxene? Dkgy trachytic groundmass. Possible trace illite?

Ltgn clay altered, weakly limonite stained porph andesite? Texture ill defined.

Dark purplish grey porph andesite. Feld phenos 0.5-3 m, moderately isolated. Hematite streaks define flow foliation. Some qz + pyrite veinlets with olive halos with diss calcite + illite (?) + sphene + pyrite.

Reddish to orange, limonite stained fractured, weathered porph andesite. Oxidised. Flow foliated. Hematite streaks.

Reddish grey porph andesite, locally orange limonite stained. Local hematite staining.

Strong manganese staining near contact.

Hydrothermal breccia cemented by chalcedony (massive to colloform) and fine grained quartz. Includes angular porph andesite clasts (siliceous) + fg pale clasts. Hematite stained. Local black Mn staining. Local disseminated pyrite to 2%. Reddish silicified porph andesite with hematite staining.

Reddish silicified PA with hematite staining.

Hydrothermal breccia with clay (limonite stained, cream), probably illite (?) matrix. Possibly smectite. Local fine grained granular qz (0.5% disseminated pyrite) matrix. Bx becomes more siliceous downwards. Some clay altered clasts. Polymict, includes porph and amygdaloidal andesite and chalcedonic clasts. Local dark grey siliceous streaks with vfg diss pyrite in matrix. Hematitic and siliceous matrix to breccia. Bx is cut by local irregular fg qz + banded to massive chalced vnlts. Local 'bedding' or geopetal structures.

Unusual texture of swirling patches of pink-cream massive to laminated chalcedony. Some patches dkgy qz with abundant diss pyrite to 5%. Clasts locally have an orientation. Bedding?

Local vein-like patches in siliceous bx. Laminated grey chalced + pyrite + late crystalline qz.

About 0.5 m smectitic fault breccia. Not foliated.

Purplish grey porph andesite. Weak calcite alteration. Trace illite? Reddened at top.

Reddish grey amygdaloidal and perlitic chilled porph andesite. Local incipient autobreccia.

Qz matrix breccia

Scattered qz vnlts, disrupted, difficult to measure

F2 fault with ltgn illite + pyrite. Fault breccia

@ 47 m Qz vnlt + pyrite

@ 47.6 m 30 mm vein calcite + qz

@ 50 m Calcite vein

@ 53 m F2 fault

Calcite veinlets

Local breccia

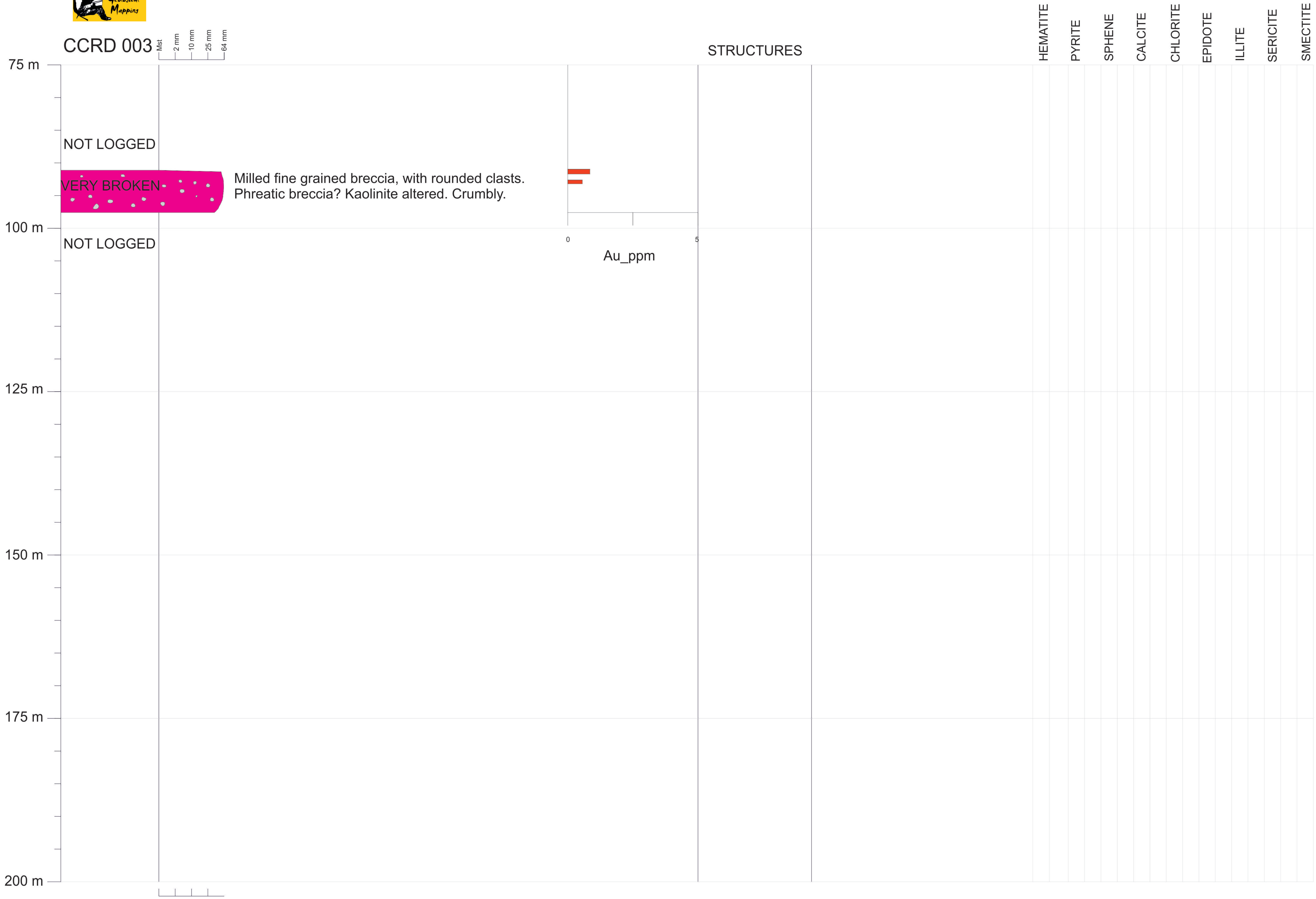
Scatt pink to ltgn clay vnlts with slickensides

Hematitic fractures and local breccia

@ 111.5 m Scatt qz chalced vnlts

Calcite vnlt stockwork

Common hematitic fractures.



Milled fine grained breccia, with rounded clasts. Phreatic breccia? Kaolinite altered. Crumbly.

CCRD003

Mst
2 mm
10 mm
25 mm
64 mm

STRUCTURES

MAGNETITE
HEMATITE
PYRITE
SPHENE
CALCITE
CHLORITE
EPIDOTE
ILLITE
SERICITE
SMECTITE

75

NOT LOGGED

2 →

V. BROKEN

Milled Jig bx - clayey, with rounded clast Phreatic bx? Kaolinite altered. Crumbly. [illegible]

100

NOT LOGGED

CCRD 004

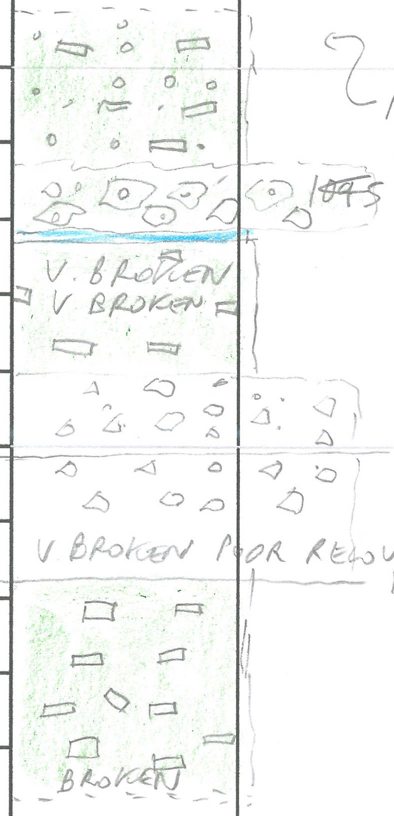
Mst | 2 mm | 10 mm | 25 mm | 64 mm

STRUCTURES

MAGNETITE	HEMATITE	PYRITE	SPHENE	CALCITE	CHLORITE	EPIDOTE	ILLITE	SERICITE	SMECTITE

NOT LOGGED

100



Reddish Oxidised PA - local qz amygdales. Weak clay altn. 2-3% 0.5% leucoxene.

109.5 Probable autobrecciated amygdaloidal PA.

Qz + chalcedony vein. c. 0.1m? Possible minor pink adularia?

Sandy

35 Scatt qz coll chalced veinlets with ~~bx~~ frags. Wallrock clasts.

Scatt vein coll chalced + fg qz.

pm Au

125

5

2

123.5 Red deeply oxidised and broken ~~post~~ syn-mineral (?) bx with common vein frags. The qz ~~veins are~~ is sugary. ~~And~~ fault bx. post mineral, with smectite. Slickensides

127.3 Also syn-mineral bx?

V BROKEN POOR RECOVERY — GAPS IN SAMPLING

Oxidised hematitic PA. 1-2% clay. Fairly tough. Possibly chilled glassy PA.

Scatt thin qz veinlets

∠20 qz vein

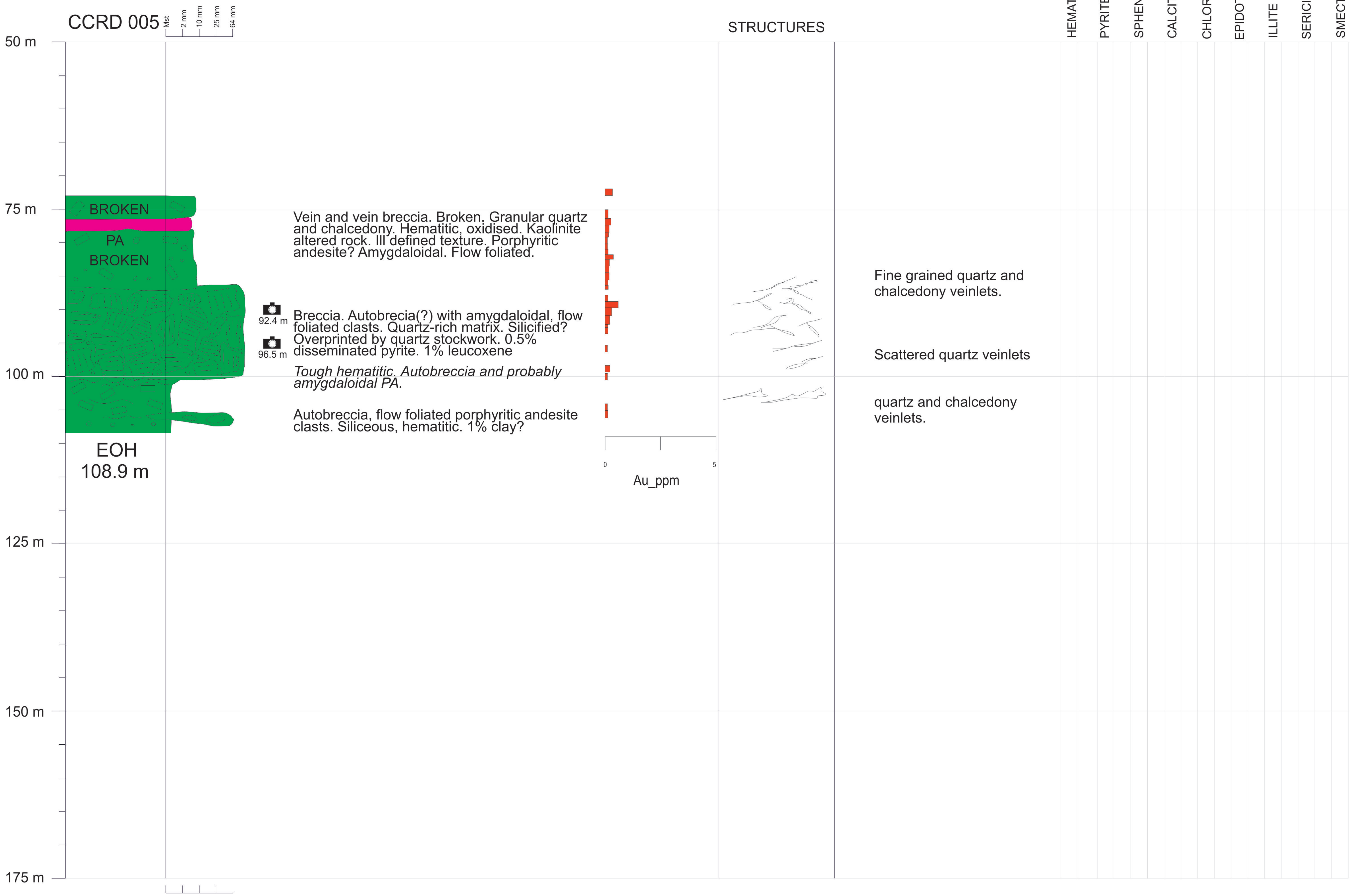
crackle bx - qz/chalced cement

150

EOH 148m

Specialized Geological Mapping

CCRD 005



Vein and vein breccia. Broken. Granular quartz and chalcedony. Hematitic, oxidised. Kaolinite altered rock. Ill defined texture. Porphyritic andesite? Amygdaloidal. Flow foliated.

Breccia. Autobrecia(?) with amygdaloidal, flow foliated clasts. Quartz-rich matrix. Silicified? Overprinted by quartz stockwork. 0.5% disseminated pyrite. 1% leucoxene

Tough hematitic. Autobreccia and probably amygdaloidal PA.

Autobreccia, flow foliated porphyritic andesite clasts. Siliceous, hematitic. 1% clay?

Fine grained quartz and chalcedony veinlets.

Scattered quartz veinlets

quartz and chalcedony veinlets.

Specialized Geological Mapping

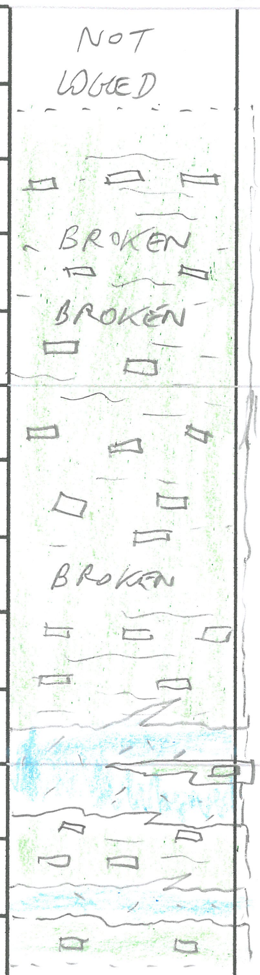
CCRD006

Mst | 2 mm | 10 mm | 25 mm | 64 mm

STRUCTURES

MAGNETITE | HEMATITE | PYRITE | SPHENE | CALCITE | CHLORITE | EPIDOTE | ILLITE | SERICITE | SMECTITE

75



EOH
137.88m

4 —|

g/t Au

local flow foliation?

OXIDISED

Red oxidised hematite stained porph andesite. Veins and bx fill comprise early colloform chalcedony, latter comb qz. Possible white adularia or albite locally.

100

106 Ito dkgn PA. Olive, tough. 0% mag. 2% olive clay altn of feld phenos 0.5-3mm, 1% leucoxene/sphene. 0.5% vfg diss py. Veins crustiform colloform chalcedony and banded calcite. Calcite seems late in paragenesis

122.7 123.3
124

Massive vein mostly white massive calcite (locally bladed) local ~~Faint~~ bands fg pyrite. Fairly structureless vein. locally it is a mix of chalcedony + dogstooth calcite.

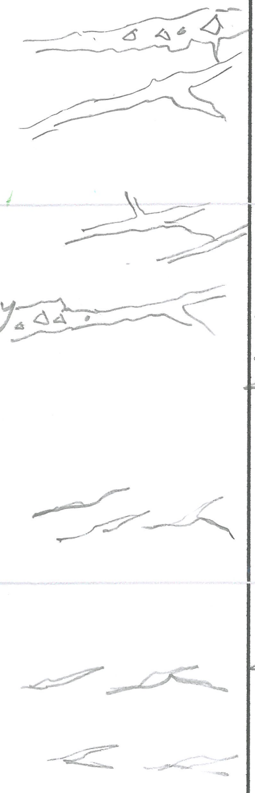
125

130.4 PA olive green. 1% leucoxene. 0.25% vfg py 1% clay. 0% mag

Massive vein. common coarse calcite, locally druzy

Alteration increasing. Tough. 2% diss py. 1% leucoxene

WHY WAS HOLE STOPPED? STILL IN VEINS



Mod ~~qz~~ stockwork and minor crackle bx

veins to at least 0.2m variety of directions

∡60 qz vein

∡25 carbonate vein

∡26 ~~to~~ chalcedony vein

∡23 qz/calcite vein

veins + crackle bx. local druzy qz cavities

∡32 qz calcite vein contact

∡35 veins calcite + chalcedony

150

175

200

CCRD 011

Very broken sandy PA? Local calcite veins preserved.

Locally obviously PA with possible flow foliation. Oxidised, broken. No obvious veins.

Specialized Geological Mapping

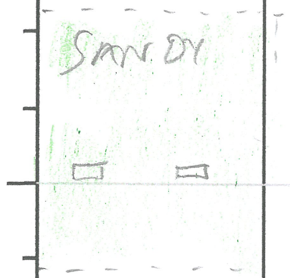
CCRD 011

Mst 2 mm 10 mm 25 mm 64 mm

STRUCTURES

MAGNETITE HEMATITE PYRITE SPHENE CALCITE CHLORITE EPIDOTE ILLITE SERICITE SMECTITE

50



Very broken sandy PA? local calcite veins preserved.

75

locally obviously PA with probable flow fol Oxidised, broken.
No obvious veins.

EOH
80.25m

100

125

CCRD 013

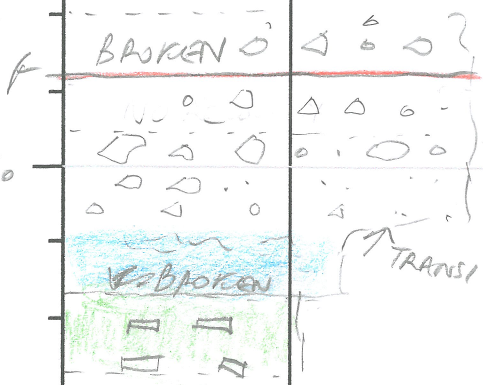
Mst | 2 mm | 10 mm | 25 mm | 64 mm

STRUCTURES

MAGNETITE | HEMATITE | PYRITE | SPHENE | CALCITE | CHLORITE | EPIDOTE | ILLITE | SERICITE | SMECTITE

25

NOT LOGGED



[illegible]

F 44.8 F F+B HYBX. Kaolinite altered. Oxidised Broken F ——— F Smectite clay gouge major fault.

47.55 HYBX with fg grey qz + py matrix. Clay altered PA clasts. late drusy qz

Hybx is locally sandy and silicified

50

51 Sugary granular qz with ill def bx texture. Cristobalite? Minor diss py.

55.3 vein with coll chalced + fg qz + pyrite. Minor late drusy qz

TRANSITION FROM VEIN TO HYBX.

Tough hematitic alt PA. 3-4% clay.

EOH 63.02m

75

CCRD014

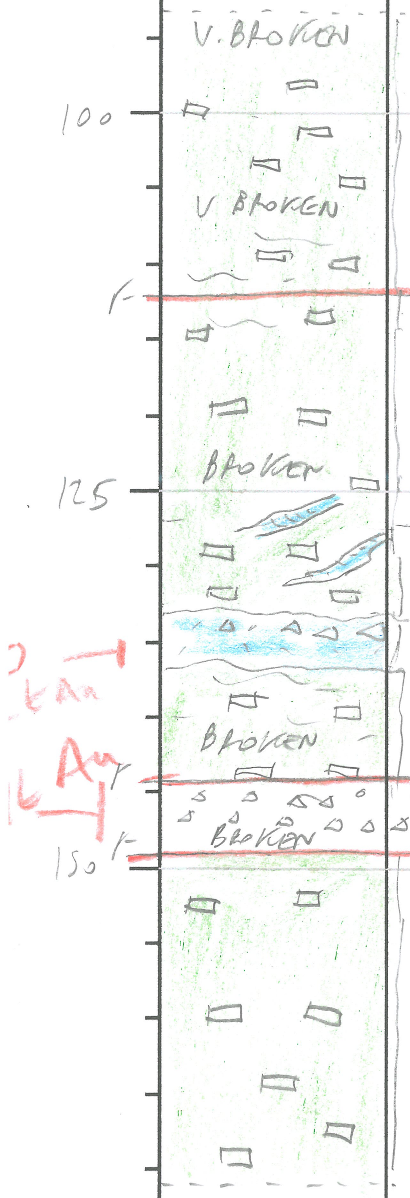
Mst
2 mm
10 mm
25 mm
64 mm

STRUCTURES

MAGNETITE
HEMATITE
PYRITE
SPHENE
CALCITE
CHLORITE
EPIDOTE
ILLITE
SERICITE
SMECTITE

75

NOT LOGGED



100

125

150

EOH

175

171m

Sandy, very broken core. Oxidised, crumbly.

103
OXIDISED

Ltgn tough PA - glassy groundmass. Mod isolated feld phenos. Oxidised.

PA glassy with ab perlitic texture. 2% diss py. 5% illite

F 113
OXIDISED

Yellowish - ltgy illite 1% / py 2% altered PA. Flow foliated F

118.7

Olive - ltgy tough PA. 1% leucoxene 0.5% diss py.

OXIDISED

126.3 ~~Greenish~~ Ltgn banded silicous tuffs / tuff ssts ? ~~Possibly~~ Probably a spirit level, ~~[illegible]~~

129.8 (spirit level greenish chalcedonic sediment + chalcedony

133.6 (Chalced - dominated vein. Rare streaks dkgy chalcedony with as vfg diss py (5%?).

OXIDISED

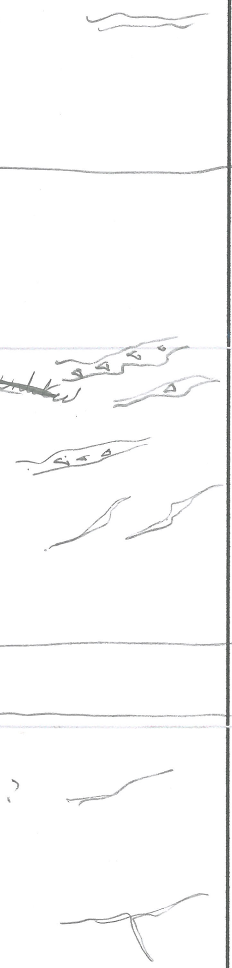
F (Reddish oxidised tough flow foliated PA. Feld phenos 0.5 - 2mm

147.6 an crowded. 2% Illite.

F ~~Post mineral~~ ~~[illegible]~~ Bx - ~~tectonic~~. Up to 3% diss py Syn-mineral F
Cemented by J3 Q2.

(DK green grey PA 1-2% mag 2% calcite (diss). ~~Trace clay~~ ?
felds 0.5 - 3mm. 0.5% leucoxene. Purplish grey (hematite)

160 Illite ? 1-3% in emerald green spots and patches.



∡ 2 Thin crustiform veins coll chalced adularia - trace grey sulphides.

F major fault with smectite ~~clay~~ gouge foliated.

∡ 21 chalcedony veinlet

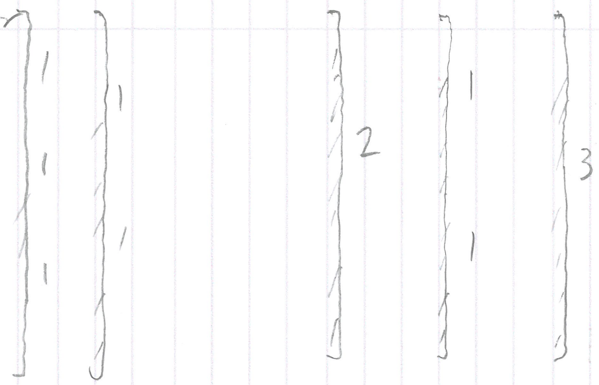
vein bx with colloform and massive chalcedony

F ∡ 26 Fault ~~contact~~ F2 or F3

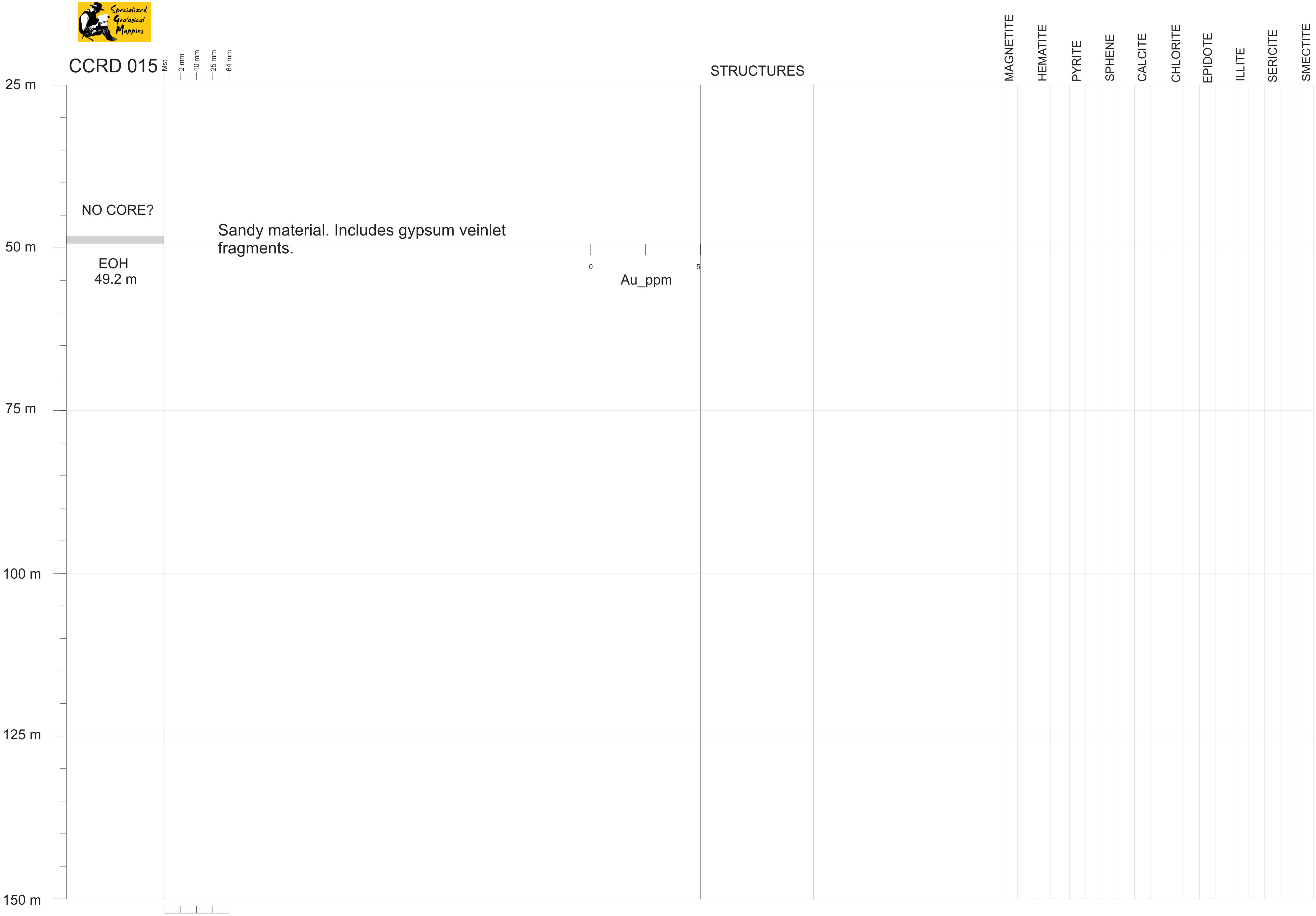
F major fault - major change in lithology

Scalt calcite units.

Calcite veinlets often foliated with minor hematite

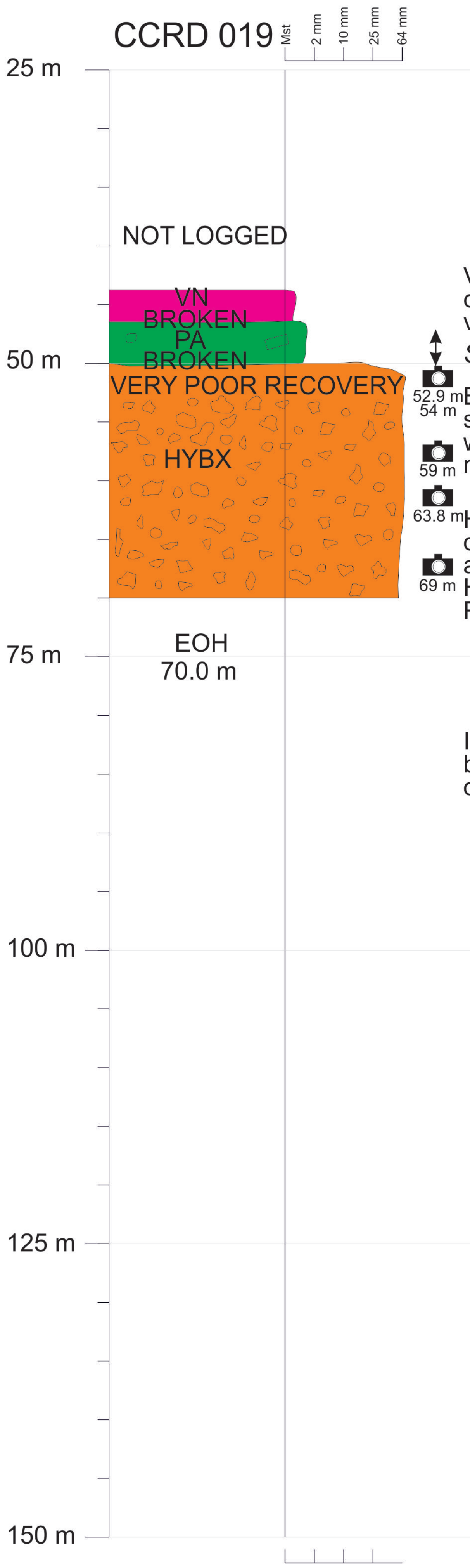


CCRD 015



Sandy material. Includes gypsum veinlet fragments.

CCRD 019

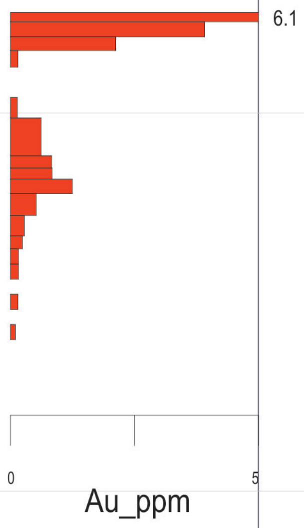


Vein (as small fragments) fine grained quartz and colloform chalcedony. Local disseminated pyrite in vein.

Strongly Kaolinite altered PA? Texture indistinct.

Breccia of vein and rock fragments. Post mineral or syn-mineral?Some probable syn-mineral breccia with kaolinite-altered clasts cemented by sugary, massive cristobalite (?) or quartz. HYBX.

HYBX increasing PA clasts. Oxidised, red. Includes obvious vein clasts (including chalcedony) Kaolinite altered clasts.Declining alteration in hematitic, tough, HYBX. PA clasts dominate small vein clasts. Phreatic?

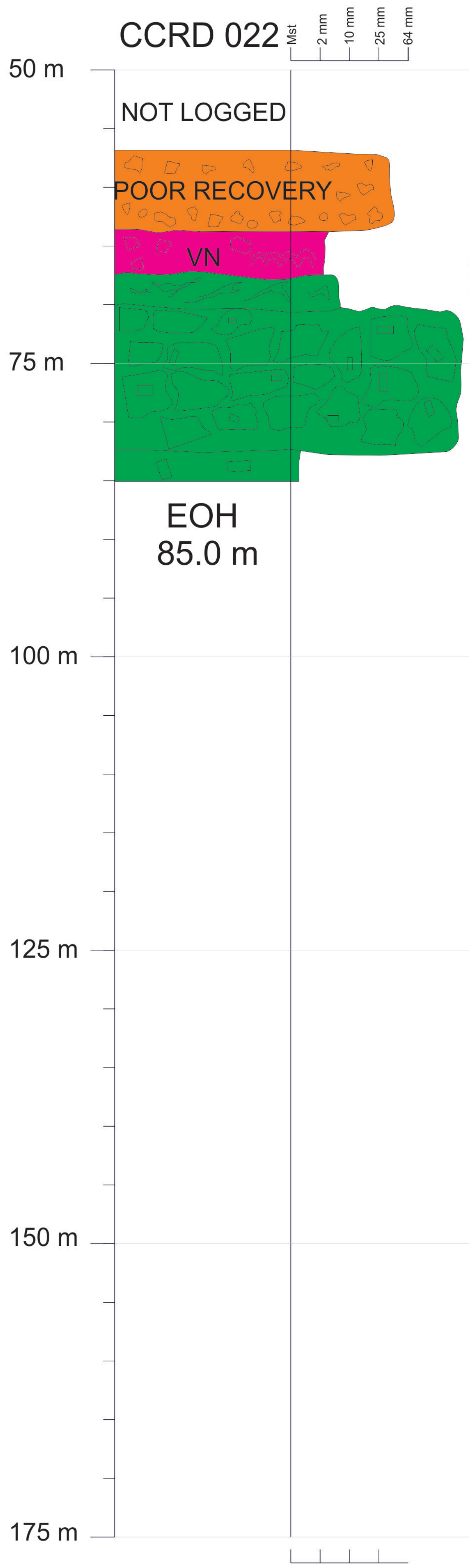


Interesting hole. No good vein but abundant phreatic breccia? High-level Kaolinite = acid sulphate overprint?. Possible cristobalite?

STRUCTURES

HEMATITE
PYRITE
SPHENE
CALCITE
CHLORITE
EPIDOTE
ILLITE
SERICITE
SMECTITE

CCRD 022



STRUCTURES

HEMATITE | PYRITE | SPHENE | CALCITE | CHLORITE | EPIDOTE | ILLITE | SERICITE | SMECTITE

📷 58 m Crumbly clay-rich HYBX or tectonic breccia vein fragments.

📷 Probable vein, very broken core. Poor recovery. Colloform chalcedony, fine grained quartz. Local coarse

64.8 m euhedral quartz, local bladed calcite replaced by quartz.

66.5 m Tough crackle breccia - quartz cement. PA clasts - olive,

68.7 m tough, 2% leucoxene, 0.5% very fine grained

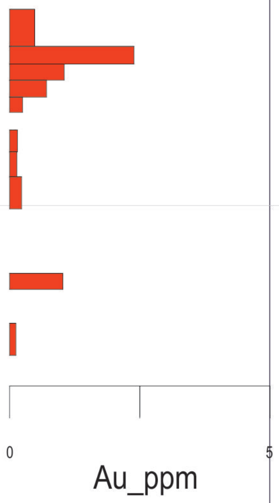
📷 disseminated pyrite, 1% Illite?

72.3 m *PA autobrecciated - hematite, oxidised. Glassy perlitic.*

Fault? Unclear.

Olive green, sandy, very broken PA. Calcite altered.

This hole should have been continued.



15 Quartz chalcedony veinlet up to 10 mm.

Appendix 2
Video of 3D workspace