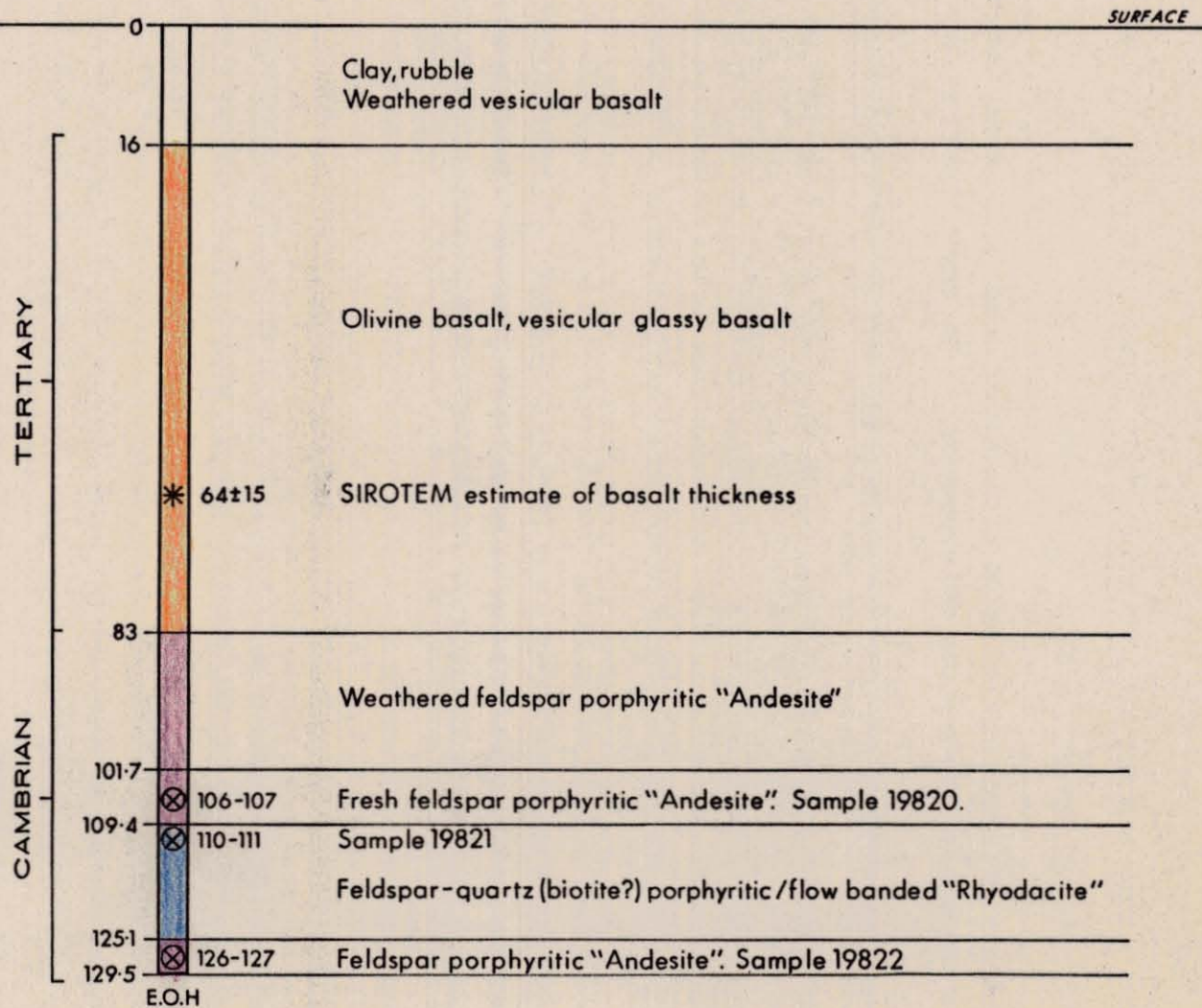


045

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LEGEND

Location on Beecroft Road,
630m south of line 12 000 N


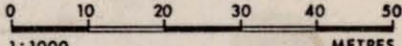
VERTICAL

Hammered : 0-94.4

Cored : 94.4-129.5

- SAMPLE LOCATION
- ⊗ PETROLOGICAL EXAMINATION
- ⊗ LITHOGEOCHEMICAL ANALYSES

5 cm

 PANCONTINENTAL MINING LIMITED EXPLORATION DIVISION		
MT. CATTLEY PROJECT E.L. 14 / 85 - TASMANIA LITHOLOGICAL SECTION HOLE NO MCPD 3		
 1:1000 METRES		
Compiled W.H.	Date October, 1986	Dwg. No
Report No	Map Ref. SK 55-3	FIGURE 3

MT CATTLEY EL 14/85 TASMANIA

WALTER HERRMAN - 30.9.1986

GEOLOGICAL LOG: DRILL HOLE - MCPD3

Collar Co-ordinates: On Beecroft Road 630m
South of intersection with line
12000N

Collared: 25/9/1986

0- 13.5m - 6.5" Down Hole
Hammer
13.5- 94.4m - 4.5" Down Hole
Hammer
94.4-129.5m - NQ Core

CHIP LOG:

0-13.5m Rubble and clayey weathered basalt (Not sampled).

13.5-16m Purplish brown soapy clay; chips are mixture of fresh and oxidised olivine basalt.

16-19m Fresh dark grey fine granular olivine basalt.

19-22m As above.

22-25m Sloppy brown clay. Very few fine chips of fresh basalt - contamination? Some clayey weathered basalt.

25-28m Sloppy brown clay. Abundant chips: a mixture of fine grained olivine basalt and purplish grey glassy-vesicular basalt.

28-31m As above.

31-34m Dark grey olivine basalt and purplish grey glassy vesicular basalt.

34-37m As above.

37-40m Dark grey fine grained olivine rich basalt, some small interstitial black glassy patches.

047

- 40-43m Dark grey, granular olivine basalt + vesicular basalt.
- 43-46m As above.
- 46-49m Dark grey fine grained olivine basalt.
- 49-52m Dark grey fine grained olivine basalt + purplish grey vesicular basalt. Vesicles filled (amygdales) with pale blue-green mineral.
- 52-55m Dark grey fine grained olivine basalt and some very fine glassy grey to dark grey basalt.
- 55-58m Fine grained bluish grey to dark grey glassy basalt.
- 58-61m Fine grained grey glassy olivine basalt.
- 61-64m As above.
- 64-67m As above.
- 67-70m Dark grey to purplish grey very fine grained olivine basalt with small black glassy interstitial patches. Some chalcedonic chips ex amygdales?
- 70-73m As above; some small chalcedonic and pale blue-green "zeolite" filled amygdales.
- 73-76m Dark grey finely vesicular olivine basalt and reddish very vesicular (scoriaceous) basalt.
- 76-79m Reddish grey fine scoriaceous basalt, minor fine grained olivine basalt.
- 79-82m As above.
- 82-85m As above, also some brick red weathered volcanic of uncertain affinity. Appear to have broken through base of basalt at around 83m.
- 85-88m Mixture of various basalt types as above - up hole contamination? Hammer slowed down in soft weathered basement.
- Chips brick red (weathered) and bluish green (oxidised) semi chloritic volcanic rock with small tabular feldspar phenocrysts - possibly intermediate composition.

88-91m As above poor chip return, sample washing away as clay.

Weathered brownish-greenish grey felsic volcanic with considerable uphole contamination of basalt chips.

91-94.4m

Light brown weathered rock with fine to medium (1-2mm) granular fabric comprising crystal fragments of whitish feldspar, small bronzy flakes of altered mica and many small rounded fractured olive brown grains which might be lithic volcanic fragments? Appears to be a weathered felsic-intermediate volcanic rock, possibly a fine lapilli tuff??

NQ CORE:

Core is oxidised to about 101.7m, generally quite badly broken especially in the interval 99.1-100.3m.

99.4-101.7m

Oxidised feldspar porphyritic "Andesite"

Generally a light buff brown to olive khaki colour, more or less weathered, particularly clayey down to about 95m but from then on compact and retaining relict fabric.

The typical rock type consists of small (1-3mm creamy white, tabular, slightly glomeroporphyritic grains of feldspar (plagioclase?) evenly sprinkled (^10%/volume) in a light greyish brown matrix apparently consisting of tiny fractured "spheres" which are about 1mm diameter and give a close packed granular appearance to the matrix. In places the fabric appears almost metamorphic but I suspect the ground mass is composed of partly altered glassy material, perhaps but not necessarily originally "spherulitic" which has been finely fractured by quenching or deformation.

The only other mesoscopically recognizable mineralogy/fabric is as amygdales which are abundant prominent and of two types:

- (i) Small (<1mm) elliptical or tear drop shaped, usually filled with semi clear, grey, soft mineral.

- (ii) Larger, wavy elongate amygdales upto 8mm x 2mm size with distinct wavy, interstitial habit; and with strong parallel preferred orientation defining a distinct linear/planar fabric. These are usually rimmed with the pale translucent mineral as in (i) but the cores are filled with a dark green, soft mineral of radiating habit, somewhat resembling chlorite.

The overall composition appears to be intermediate; there is no quartz yet no well crystallised ferromagnesians; could be a felsic andesite tending to dacite. Presence of aligned amygdales indicates extrusive volcanic.

In places (for example as at 100.3m) there are small patches composed of closely packed tabular feldspar with sparse interstitial dark mineral which might be altered glass or altered mica? These areas or patches resemble lithic fragments and may be cognate lithics of feldspar rich crystal mush.

There are occasional (late stage?) quartz veinlets; (barren whitish-grey dog toothy veinlets upto 5mm wide) these cross cut as varying angles and are observable wavy and irregular in character. The most notable vein occurrences are at:

96-96.5m, 2-5mm, wide semi parallel to LAOC.

97.5-98.5m, 5mm, wavy, semi parallel to LAOC

99.4-99.8m, 5-10mm, irregular tending sinusoidal, faintly zoned, chalcedonic veins.?

Some rather vughy suggesting original carbonate presence.

Measured vesicle lineations are:

96m	approx.	60 ⁰	to LAOC
97.7m	approx.	50 ⁰	to LAOC
98.3m	approx.	50 ⁰	to LAOC
99m	approx.	40 ⁰	to LAOC
100.6m	approx.	50 ⁰	to LAOC

101.7-109.4

Feldspar porphyritic "Andesite"
(Unoxidised)

The transition between oxidised and fresh core is fairly sharp occupying less than 1m interval of core.

This rock type is clearly the fresh equivalent of the rock described above; it displays the distinctive vesicular and micro fractured / "granular" fabric.

The typical rock consists of smallish (1-3mm) equant to tabular but generally very subhedral grains of pale greenish grey plagioclase rather sparsely distributed (<10%) in a medium to dark greenish grey ground mass. The ground mass appears to consist of very fine grey material which has a medium "granular" fabric superimposed by a continuous network of fine fractures usually having three point junctions as in foam.

The average granule size formed by these fractures is around 0.5 - 1.0mm.

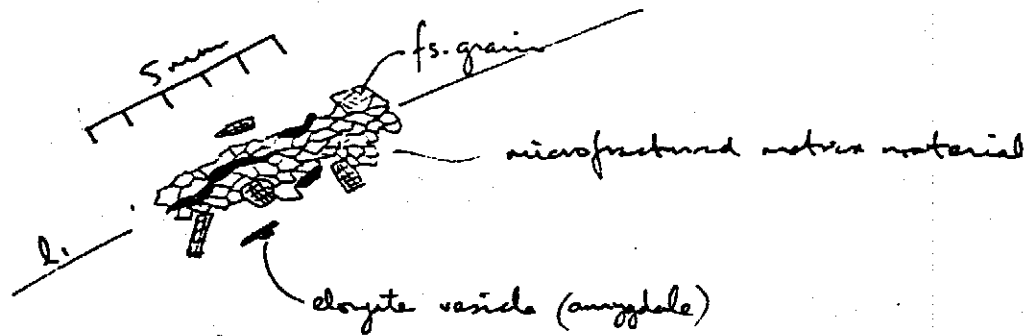
Small tear drop shaped vesicles (~ 1mm) and larger elongated vesicles (amygdales) are abundant and constitute at least 5-10% of volume.

The smaller vesicles are filled with a light grey mineral of moderate hardness (not quartz) and often have pale rims or reaction haloes? The larger elongate vesicles (amygdales) are generally filled with a dark green soft mineral of radiating habit resembling chlorite.

These have a distinct linear preferred orientation, the lineation has been measured as follows:

101.8m	-	30 ⁰	to LAOC
103.5m	-	25 ⁰	to LAOC
105.5m	-	20 ⁰	to LAOC
107m	-	25 ⁰	to LAOC
108.5m	-	20 ⁰	to LAOC

Curiously, the vesicle (amygdale) lineation fabric seems to align with slight elongation in the microfracture / "granular" fabric.



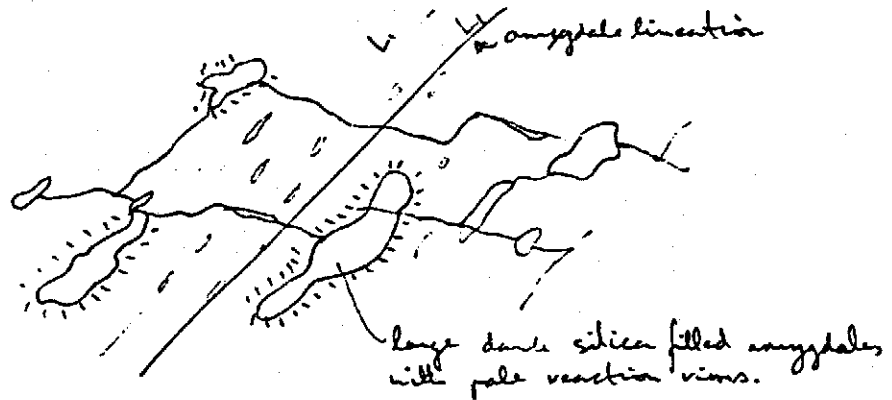
In this respect the microfracture fabric resembles a high grade metamorphic gneissosity. It may be an incipient form of cleavage development in a brittle glassy rock? This is particularly suspected in the zones 107-107.5m and 109-109.4m where the rock is affected by moderate development of fracture cleavage associated with pale green alteration of matrix material along and outward from the fractures.

The core is cut by a number of irregular veinlets, mainly composed of milky white-grey quartz and subordinate white carbonate (calcite?). The veins are generally irregular from < 1mm to about 10mm thick, often open space type tension gash fillings. They cut core at various angles and appear to post date fracture cleavage and vesicle lineation.

These veins are generally unmineralized and are without reaction envelopes. Sometimes, very minor fine pyrite and rare chalcopyrite occur as fine specks along the outer selvages of veinlets. Intensity of veining is not high, averaging 5-10 veins / metre core.

In places e.g. 105.5m small quartz veinlets are associated with large elongated amygdales of hard dark grey fine cherty silica? and rimmed by narrow (to 3mm) envelopes of pale straw coloured bleached rock. These particular amygdales are rounded/elongate upto 10 x 40mm in size and appear to be interconnected by fine silica filled veinlets.

Natural Scale:



These veinlets and amygdales also contain minor fine specks of pyrite. It appears that these may have remained unfilled vesicles during diagenesis and were finally filled at a late stage associated with (Devonian)? deformation fracturing and vein filling.

The contact with the underlying rock is sharpish being transitional over about 50mm in which small rounded blebs (lapilli?) of the pink R.-dacite appear to be enclosed by the darker andesitic rock.

109-125.1m

Feldspar - Quartz porphyritic rhyodacite.

This rock type has a generally light pinkish brown to pinkish grey colour and typically consists of equant to tabular rather subhedral phenocrysts of greyish plagioclase (1-4 mm, about 5-10% / volume) and small semi prismatic aggregates or grains of chloritised ferromagnesian (probably biotite) (1-4mm, < 5% / volume) and small rounded grains of clear quartz (1-2mm - 5% / volume) evenly distributed in a very fine pinkish matrix probably partly glassy and containing some K-feldspar.

Small elongate calcite or calcite + chlorite filled amygdales (1-10mm) 2-3% / volume) are present throughout. These and some of the more tabular feldspar phenocrysts have a weak linear preferred orientation which lies parallel to locally developed distinct grey to pink colour banding in the matrix which appears to be flow banding.

051

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Banding is best developed in the interval 118-124.5m. Presence of (filled) vesicles and flow banding suggests extrusive volcanic origin.

The core is criss-crossed by small veins + veinlets (< 1mm to 15mm) of quartz and chlorite + carbonate. These cut₀ at varying angles from about 20° to 80° to LAOC, are commonly irregular and intersecting, occurring with moderate frequency, say 20-30 / metre core throughout the rhyodacite litho type. These veins, particularly the finer veinlets, carry traces of fine pyrite and rare chalcopyrite and sphalerite. (Sphalerite at 113.1m) very minor pyrite sometimes occurs in calcite-chlorite filled amygdales or chloritised ferromags. Average sulphide content well below 0.05% volume. Some of the larger veins are associated with locally pervasive pinkish bleaching (k feldspar alteration?) of the rock matrix in envelopes upto several centimetres wide, example at 118.5m.

The lower contact is fairly sharp similar to the upper contact in that small rounded pink lapilli? of rhyodacite seem to be enclosed by green andesite over a transitional zone of about 60mm. This could be contact reaction between felsic and intermediate extrusive flows; appears rather as if felsic alteration has occurred around amygdale rims within the andesite.

Measured flow banding

109.8m	-	40°	to LAOC
117.5m	-	50°	to LAOC
121.3m	-	60°	to LAOC
123m	-	50°	to LAOC
124.4m	-	60°	to LAOC

125.1-129.5m

Feldspar porphyritic "Andesite"

This rock type is compositionally similar to the interval 101.7 - 109.4m except that it is generally less amygdaloidal. The feldspar phenocrysts, feldspar rich "cognate lithic" fragments and the distinctive meshwork microfracture fabric are all present.

050

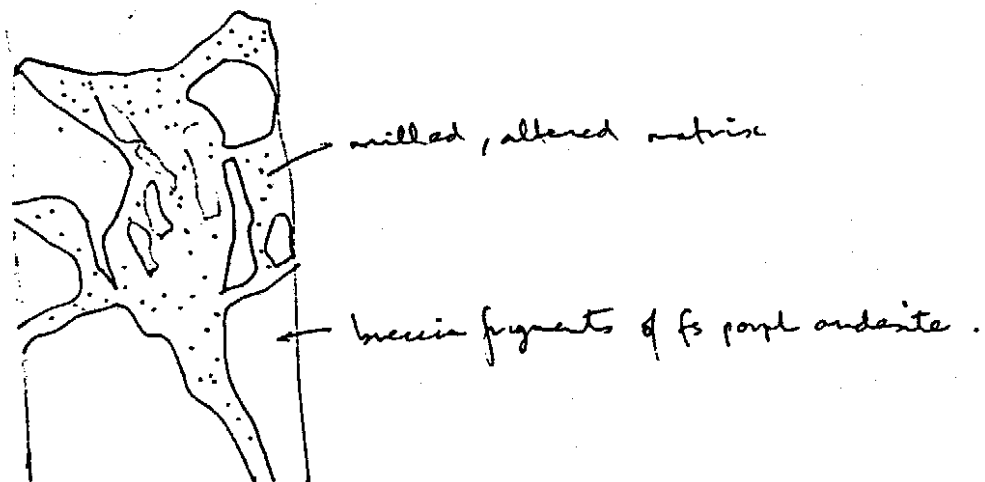
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Superimposed upon this is a coarse fragmental fabric; the rock could be termed volcanic breccia. However, the brecciation appears to have occurred "in situ" with weak pinkish green alteration of the inter fragment milled material.

Breccia fragment sizes vary from large >300mm to <10mm, are of variable irregular to splintery shapes. The interfragment matrix is finely "milled" down to 1-2mm grain size and appears to be weakly altered perhaps to epidote bearing assemblage. This alteration does not have associated sulphide mineralisation and there is no indication of alteration of the fragment margins.

Sketch of core at 127.0m



Superimposed in turn upon the breccia fabric are the usual quartz + chlorite + carbonate veins sometimes containing minute traces of fine pyrite, overall <0.05% pyrite.

Due to lower abundance of elongate amygdales the linear fabric is much less pronounced in this interval but generally appears to cut core at about 40-50 to LAOC

129.5m

E.O.H.