

1979/23. A diamond drill hole at Silver Hill Road, Cygnet.

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*Abstract*

A cored hole at Silver Hill Road, Cygnet [EN05042172] proved 219.5 m of dark pebbly basal Permian tillite without reaching a base. The tillite is in places intruded and metamorphosed by thin dykes and sheets of Cretaceous syenite.

INTRODUCTION

The basal Permian tillite (Truro Tillite<sup>\*</sup>) of the Cygnet area is a widespread well-developed unit of unknown but considerable thickness. No lateral equivalents are known in the Hobart area where the Glenorchy bore reached basement without encountering tillite.

This bore was sited to prove the thickness of the tillite and, in the absence of a major dolerite body, continue on in an attempt to find basement. The bore penetrated pebbly tillite and associated laminites, in places metamorphosed and intruded by minor Cretaceous syenite bodies, to a depth of 219.5 m. At this depth the drill was removed for use elsewhere and on return a year later the hole was lost, owing to drilling difficulties, without much further progress. Besides the 200 m of tillite found in the hole at least another 100 m is known to exist above the level of the hole giving a minimum thickness of at least 300 m for the tillite of the Cygnet area.

[12 July 1979]

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\* Unpublished formation name.

GEOLOGICAL LOG OF CYGNET NO. 3 DIAMOND DRILL HOLE (SILVER HILL)

Depth (m)	Description	Formation
0.00 - 11.84	Soil, clay, sand and deeply weathered pebbly tillite.	TRURO TILLITE
11.84 - 16.30	Tillite, light grey, weathered.	
16.30 - 17.93	Tillite, dark grey, deeply weathered and with small pebbles.	
17.93 - 28.90	Tillite, dark grey, fairly fresh with many medium-sized pebbles.	
28.90 - 34.25	Tillite, dark grey, many small pebbles. Thin (2.5 mm) calcite veins both vertical and horizontal.	
34.25 - 40.94	Tillite, dark grey, with mainly small pebbles but with a few large cobble and boulder sized clasts.	
40.94 - 47.42	Tillite, dark grey, medium-sized pebbles mainly but a few boulders.	
47.42 - 49.10	Black siltstone with only a few small dropped granule size pebbles.	SYENITE
49.10 - 56.60	Syenite, light grey, tabular feldspars (10-20 mm) and a dark mafic mineral throughout - gives a spotted appearance. Top and bottom margins fairly flat lying but also irregular.	
56.60 - 62.39	Dark grey pebbly tillite - pebbles up to 30 mm but mostly smaller.	TRURO TILLITE
62.39 - 69.00	Tillite mainly small pebbles and granular size material - large boulders towards base of section up to 220 mm.	
69.00 - 82.00	Tillite dark grey to black - spotty - granule sized material throughout. A few pebbles up to 20 mm.	
82.00 - 101.00	Grey tillite small and large pebbles and boulders.	
101.00 - 101.58	Heavily slickensided tillite material ?small fault.	
101.58 - 103.87	Dark grey pebbly tillite.	SYENITE
103.87 - 104.80	Syenite, top and bottom contacts not recovered.	
104.80 - 108.82	Pebbly tillite.	TRURO TILLITE
108.82 - 110.00	Black finely-bedded mudstone or siltstone, without pebbles of any kind - banding faint but clearly present.	
110.00 - 117.62	Pebbly tillite.	
117.62 - 117.82	Sandstone fine-grained, cross bedded, resting on what appears to be a conglomerate (pebbles touch and support each other - no fines).	TRURO TILLITE

## GEOLOGICAL LOG OF CYGNET NO. 3 DIAMOND DRILL HOLE (SILVER HILL) (continued)

Depth (m)	Description	Formation
117.82 - 151.20	Pebbly tillite, 30 mm sized pebbles to granules, a few large boulders.	F.T.
151.20 - 152.20	Syenite, dark grey with many small tabular feldspars. Top and bottom very irregular with small embayments of tillite into syenite.	SYENITE
152.20 - 165.00	Tillite, dark grey, pebbly (30-40 mm) and many small pebbles.	↑ TRURO TILLITE
165.00 - 166.34	Dark grey to black siltstone to mudstone finely laminated.	
166.34 - 167.25	Mudstone much as above but with a few small dropped clasts of granule size.	
167.25 - 172.00.	Laminated siltstone almost entirely free of pebbles of any kind except at about 171 m where a few large (30 mm) pebbles occur.	
172.00 - 184.38	Dark grey very pebbly tillite, small and large pebbles. Bottom 80 mm appears to be conglomeratic (pebbles touching).	
184.38 - 184.90	Fine-grained mudstone with only a few granule and smaller sized clasts.	↓
184.90 - 200.72	Pebbly tillite - very pebbly, all sizes - veined throughout by thin calcite veins (all at about 45° to vertical).	
200.72 - 201.25	Tillite heavily affected by anastomosing veins ?calcite.	
201.25 - 204.90	Syenite light grey, porphyritic. Syenite has irregular top but is possibly flat lying. Base flat but irregular.	SY
204.90 - 212.76	Pebbly tillite, baked.	F.T.
212.76 - 219.51	Pebbly tillite, baked.	
	Hole terminated at 219.51 m.	