CELL 87/69

AMPHION

DIEBACK INTERPRETATION

REPORT

060168

DEPT. OF CONSERVATION & LAND MANAGEMENT

FROM : Interpreters, Inventory Section, C.A.L.M., KELMSCOTT.

TO : Section Manager, Inventory Section, C.A.L.M., KELMSCOTT.

DATE : 2nd August, 1988.
OUR REF. : D.2.1.(A)
/OUR REF. :

SUBJECT : **CELL REPORT - CELL 87/69 AMPHION**

(THIS REPORT SUPERSEDES THE ONE DATED 2ND AUGUST 1988).

SUMMARY :

Cell 87/69 Amphion, which is located south-east of Dwellingup covers approximately 2610 ha. The cell was interpreted for the presence of *Phytophthora cinnamomi* as a follow-up to a hygienic logging trial conducted between 1981 and 1983. The purpose of the interpretation was to determine if any dieback had been spread or introduced during this operation.

The interpretation, using 230mm colour photographs, was carried out by two teams of interpreters and completed in February 1988.

One new infection of approximately 2 hectares was found in logging Coupe 1. This coupe was logged for poles in Autumn 1981 and for sawlogs in Summer 1981-82. Both were logged in dry soil conditions.

INTRODUCTION :

Cell 87/69 is located approximately 15km south-east of Dwellingup along the Pinjarra-Williams Road and covers an area of 2610 ha.

The cell was previously interpreted in 1980, using 70mm colour photography, as part of Cell 1. Following this initial interpretation a hygiene logging trial was undertaken. The present interpretation, making use of 230mm colour photography, is a follow-up to the trial to determine if any disease was introduced or spread from existing infections during logging operations.

During the period 1981-83, 814 ha of forest were cut in the logging operations. The majority of this area was within the Dwellingup-Hester Complex, the remainder, which tended to be adjacent to the creek systems was in the Yarragil complex.

.../2/-

Large areas to the south and south-west of the cell were clean cut for dieback in the late 1960's and replanted with Eucalyptus saligna, E.microcorys and E.megacarpa in 1970. These areas are within the swamps and creek systems of the Yarragil complex (Appendix 1).

The cell had not been burnt for approximately 12 years.

PHOTOGRAPHY INTERPRETATION :

The cell was photographed on 17th May 1987, using the 230mm format colour photographs. These were initially interpreted for indicator species deaths, uninterpretable areas and suspect areas and check sites as per the Dieback Interpreters Manual (1986).

FIELD INTERPRETATION :

The field checking of the initial interpretation was carried out following the procedures set out in the Dieback Interpreters Manual using motorcycles and 4x4 vehicles. Field interpretation was conducted between 21st January and 25th February 1988 by two teams of interpreters from Kelmscott Inventory.

INTERPRETABILITY :

The majority of Cell 87/69 was interpretable, with the main indicator species being :- Banksia grandis, B.littoralis, Xanthorrhoea preissii, X.gracilis and Persoonia longifolia. However, there were some large areas which, due to species composition and previous activities, could not be interpreted.

The categories of uninterpretable forest are as follows :-

(i) Areas clearfelled for dieback in the late 1960's and replanted in 1970 with E.saligna, E.microcorys and E.megacarpa (area approx. 80ha).
(ii) 150 ha of 1983 logging - this area contains a number of pockets of interpretable forest, 2-3 ha in size.
(iii) Areas cleared for settlements (area approx. 55ha).
(iv) Areas which do not support sufficient indicators to conclusively indicate the absence or presence of P.cinnamomi (area approx. 45ha).

DISEASE EXPRESSION :

In all areas of interpretable forest, disease expression was very good, where disease is present, most susceptible plant species exhibited disease symptoms.

.../3/-

DISEASE PRESENCE - DISCUSSION :

All but one of the dieback infections found and mapped within Cell 69 were associated with the areas clearfelled for dieback in the 1960's and replanted. Most of the infections were found extending out of the regeneration plots and into the surrounding bush. Three infections were found within the actual plots where sufficient indicator species had recolonized the area to indicate disease presence.

A large area (approximately 2ha) of P.cinnamomi was found on the northern cell boundary (Logging Coupe 1). This infection is associated with an old snig-track and follows the snig-track up the hill from the north eastern road junction, which forms the boundary of coupe 1. Deaths within this infection range from a few months to approximately 5 years.

This area was checked on the 1978 70mm film for Cell 1 and no evidence of Pc was found. Therefore, the source of, this infection is unknown. However, it is assumed that th disease infection was spread during the logging operation. A breach of hygiene occurred 9/4/81, during pole operations by Ridolfos, however, this infection does not appear to be associated with the breach (see Appendix 6).

Since the Cell 1 interpretation in 1981, a better understanding of disease expression and activity has been gained and uninterpretable category, for those areas supporting no dieback indicators, has been introduced. These changes in standards are responsible for the apparent discrepancies between the distribution of Pc in 1981 and 1988 interpretation and the deletion of some Pc from the 1981 interpretation.

A number of positive samples were recovered from internal roads in Amphion before 1983 as part of the monitoring programme of the Hygienic Logging Trial (detailed in Hygienic Logging Trials Preliminary Results, 1984) - See Appendix 5. All internal tracks were checked during the course of the present interpretation. No plant deaths were noted adjacent to or downslope from the earlier sample sites.

SAMPLING :

Sixteen soil and tissue samples were taken to support the field interpretation. Six samples were taken from Armillaria infections to confirm the absence of P.cinnamomi. The laboratory results for these samples support the field interpretation. Other samples were taken to confirm the absence of dieback in isolated deaths or as standards to confirm the presence of dieback in obvious infections (see Appendix 2).

...4/-

The presence of Armillaria cannot be proven by culturing of samples. Field interpretation (only) was used to diagnose Armillaria infections. Samples were taken to confirm the absence of Pc.

ARMILLARIA LUTEOBUBALINA :

A number of Armillaria infections were found in Cell 87/69, the majority of which were located near Amphion plot 2 (E.saligna and E.megacarpa). These infections were quite small,usually less than 50m in radius. The largest infection, approximately 6 ha in size, was found in a swamp leading into the private property Location 1009 on the southern cell boundary (Appendix 3).

There appears to be no pattern to these infections and there is little evidence to suggest that this disease was introduced during the hygienic logging trial.

Where it was possible all Armillaria infections have been mapped. However, the location of Armillaria was not the prime objective of this interpretation, therefore all infections found were discovered by chance whilst checking indicator deaths, or were diagnosed as dieback on the initial film interpretation. As a consequence, the extent of the disease indicated on the map may not be complete.

HYGIENE MAP :

All areas clear felled for dieback in the 1960's and replanted with E.saligna, E.microcorys and E.megacarpa have been classified as HPR. This is due to their classification as dieback in all earlier interpretations and their location downslope from existing dieback infections.

The roads used as cell boundaries have all been called N.E.Q. These tracks are open and appear to have been used frequently as access to several blocks of private property within or close to the northern boundary of the cell. Chadoora Road, which is the main internal track, is used as the main access track to these blocks. Since it is necessarily used in all weather conditions, it has been classified as N.E.Q. as is the large landing at it's northern end and the three other internal tracks also used as access to the private property. Two of these have quarantine gates. However, one is being bypassed and the other has been forced open.

...5/-

1. COMMENTS AND RECOMMENDATIONS :

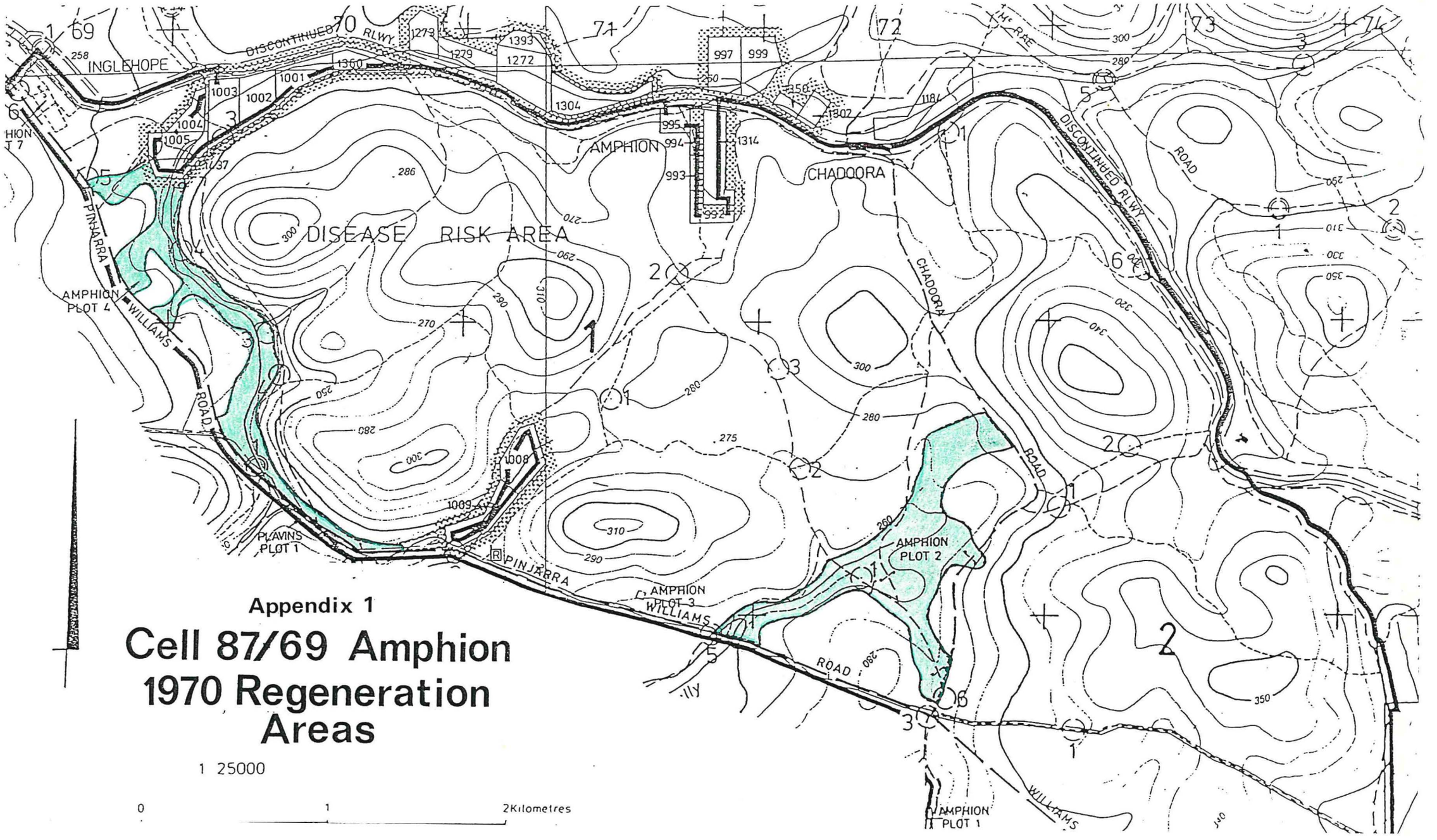
During the interpretation of Amphion, it became apparent that various internal tracks were being used as access to the private property to the north of the cell. Two of these tracks have quarantine gates, however, one is being by passed and the other has been forced open. It is recommended that these gates be fixed and the tracks around them blocked, as Chadoora Road provides adequate all weather access. It is also recommended that a gate be placed on the track north of location 1009 beyond the entrance to this block. This track passes through a dieback infection near the Pinjarra-Williams Road and increases the likelihood of the disease being introduced into the interior of the cell if it is used for access to the north of the cell.

At the time of field interpretation, the 150 ha of 1983 logging was classified as uninterpretable. Within this area, numerous small pockets of interpretable bush, usually 2-3 ha in size, were found surrounded by thick regrowth. As the total area of these pockets did not constitute 50% of the logging area and because it was not practicable to map the individual pockets, the whole area was mapped as uninterpretable. It is recommended that this area be reassessed with 1-2 years of the 1988 interpretation to determine whether it is suitable for ground stripping or re-photographing.

Peta Cameron.
Peta Cameron.
Interpreter,
KELMSCOTT.

R. Thomas
Rob Thomas.
Interpreter,
KELMSCOTT.

PC,RMT:ekh.



Appendix 1

Cell 87/69 Amphion 1970 Regeneration Areas

1 25000

0 1 2Kilometres

SAMPLING RECORDS SHEET

SAMPLE SUMMARY.

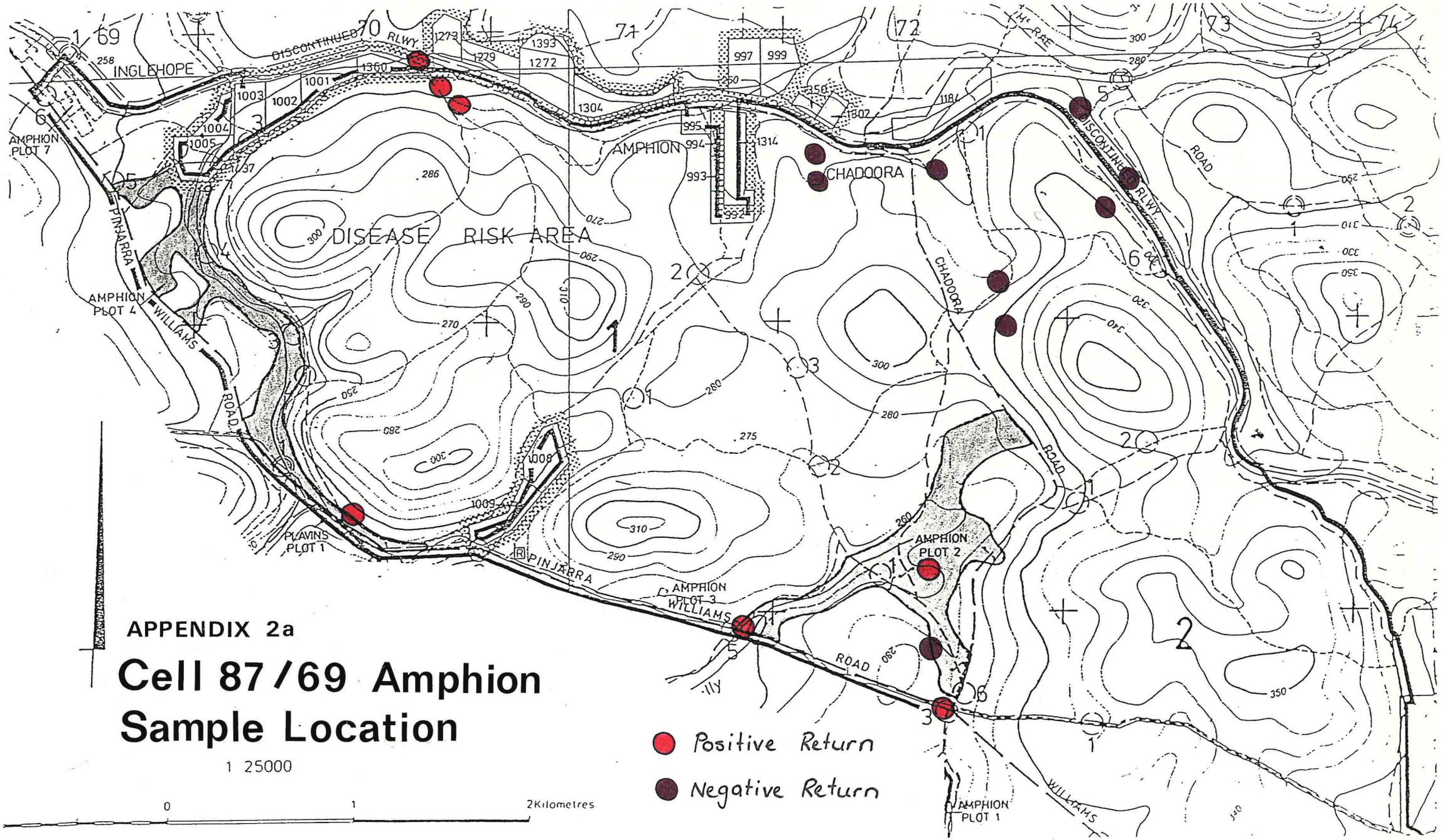
CELL NUMBER:-

RUN NUMBER:-

PAGE NUMBER:-

FRAME & SAMPLE No.	DATE	LN	SY	FIELD INT.	DATE REC.	DATE OF PROCESSING			RESULT	
						1ST	2ND	SUBS	PLATE	CUP
RUN 1										
5195 Sample 1	27-1-88	L	C	NPC×2	ARMILLARIA.				NEGATIVE	NEGATIVE.
5195 Sample 2	28-1-88	M	S	NPC×2					NEGATIVE	NEGATIVE
5191 Sample 1	29-1-88	TOP SLOPE	C	NPC×2	ARMILLARIA				NEGATIVE	NEGATIVE.
5191 Sample 2	29-1-88	TOP SLOPE	C	NPC×2	ARMILLARIA				NEGATIVE	NEGATIVE.
5187 Sample 1	3-2-88	L	C	SUS×2					POSITIVE	POSITIVE.
5187 Sample 2	3-2-88	M	S	PC×1 SUS PC×1					POSITIVE	POSITIVE.
5187 Sample 3	3-2-88	M	M	PC×2					POSITIVE	POSITIVE.
5193 Sample 1	1-2-88	F	I	NPC×2	ARMILLARIA.				NEGATIVE	NEGATIVE.
RUN 2										
5201 Sample 1	16-2-88	M	C	NPC×2					NEGATIVE	NEGATIVE
5201 Sample 2	17-2-88	M	C	SUS PC×2					NEGATIVE	NEGATIVE
RUN 3										
5224 Sample 1	25-2-88	M	S	NPC×2	ARMILLARIA				NEGATIVE	NEGATIVE
RUN 4										
5244 Sample 1	17-2-88	M	S	NPC×1 SUS×1					POSITIVE	
RUN 6										
5251 Sample 2	10-2-88	CREEK	M	PC×3					NEGATIVE	POSITIVE
5251 Sample 3	10-2-88	M	C	NPC×3	ARMILLARIA				NEGATIVE	NEGATIVE.
5252 Sample 1	10-2-88	M	C	PC×3					NEGATIVE	POSITIVE
5254 Sample 1	10-2-88	M-L	M	PC×3					POSITIVE	POSITIVE.

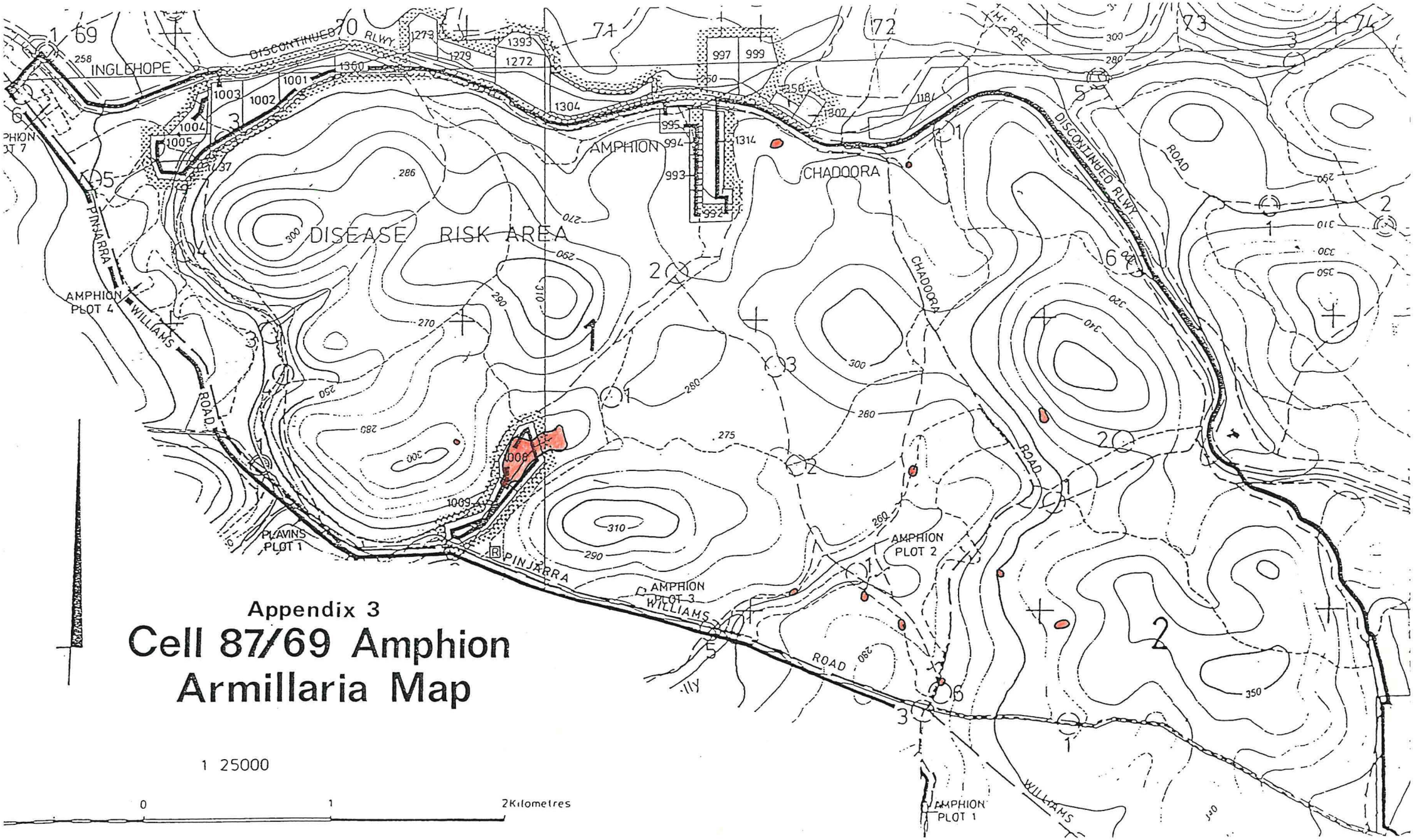
1. LN – LOCATION CLASS
2. SY – SYMPTOM CLASS
3. FIELD INT – FIELD INTERPRETATION BY INTERPRETER
4. DATE REC – THE DATE THE SAMPLE IS RECEIVED AT DWELLINGUP RESEARCH.



APPENDIX 2a

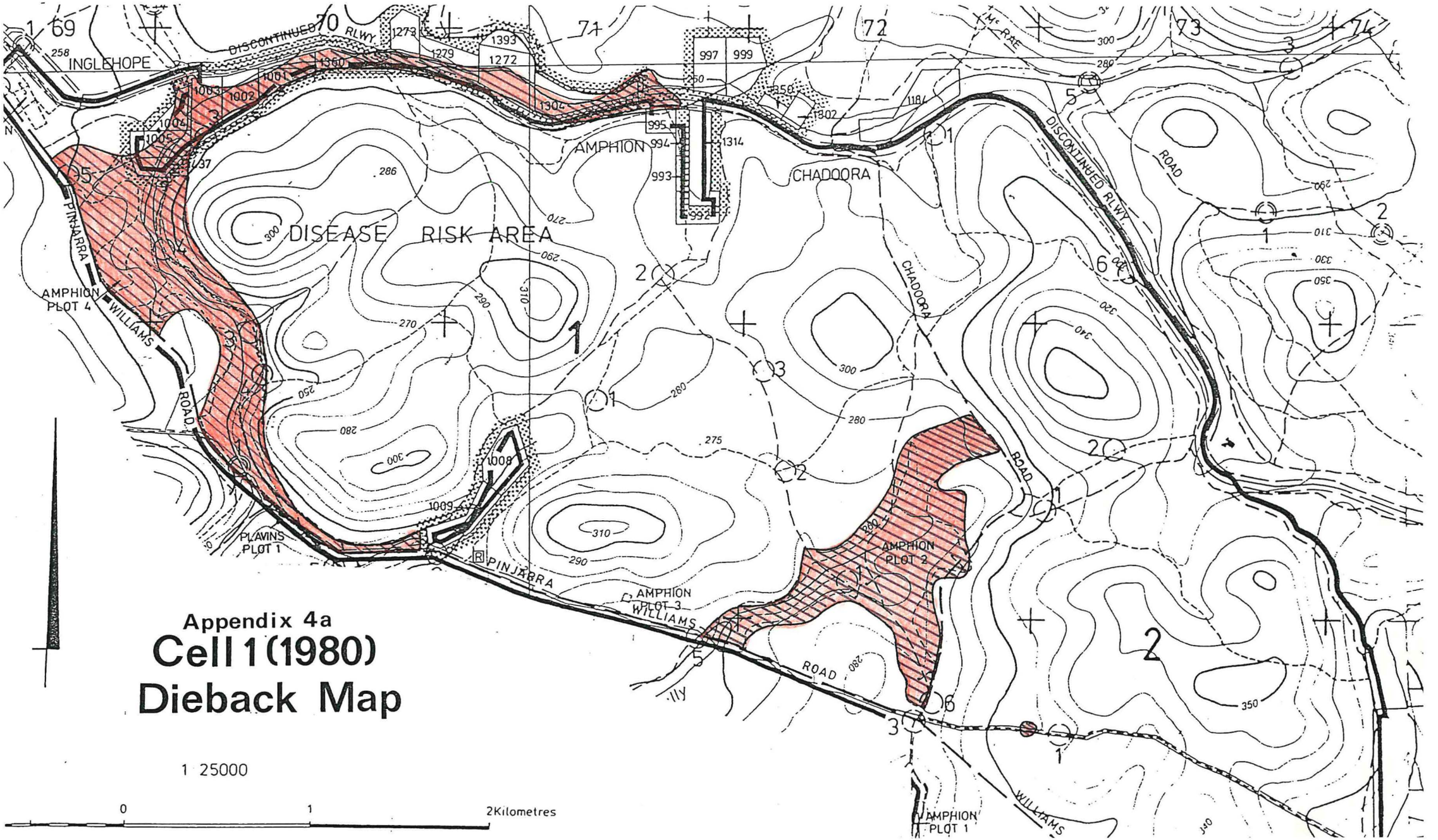
Cell 87/69 Amphion Sample Location

1 25000

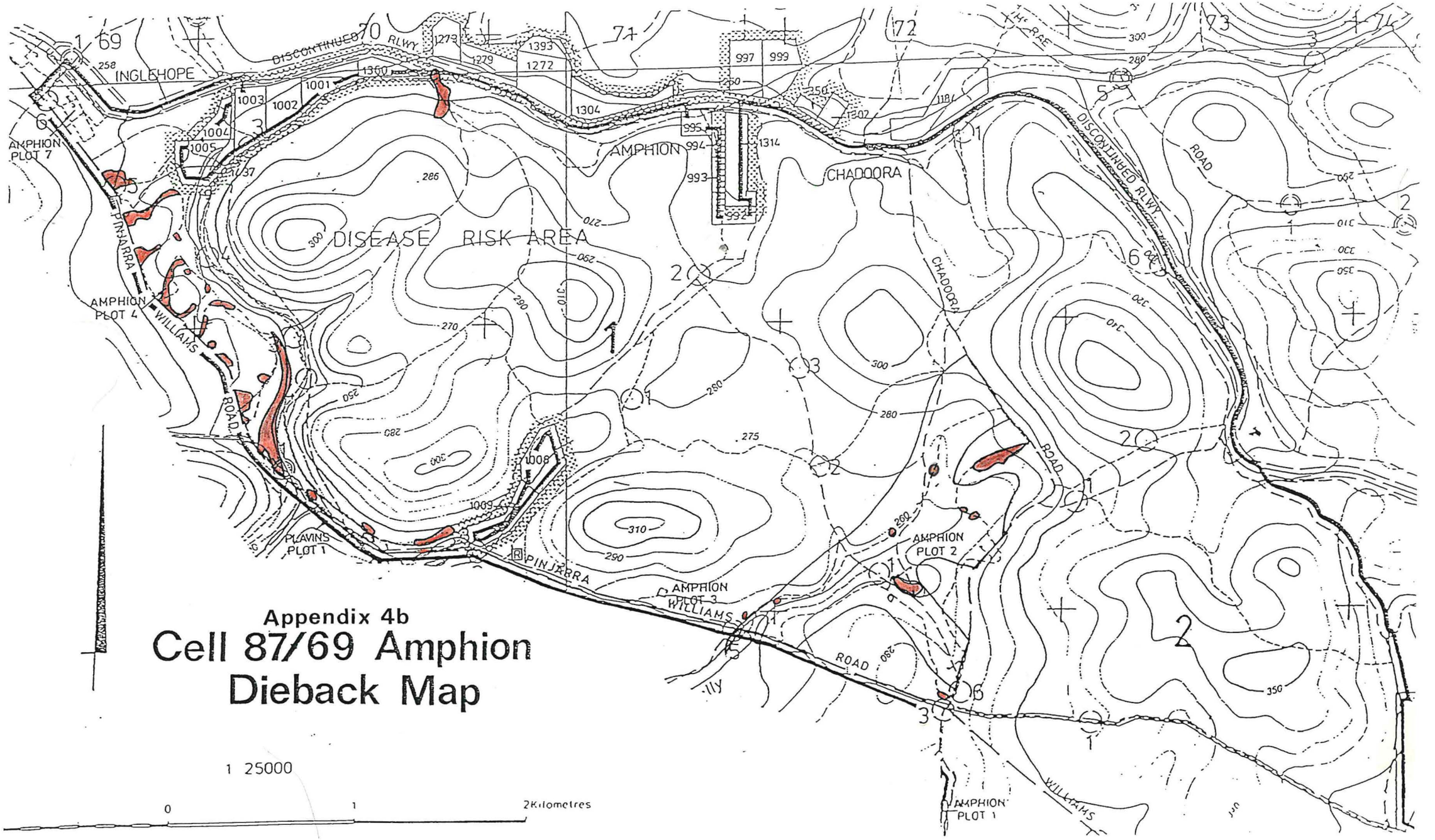


Appendix 3

Cell 87/69 Amphion Armillaria Map

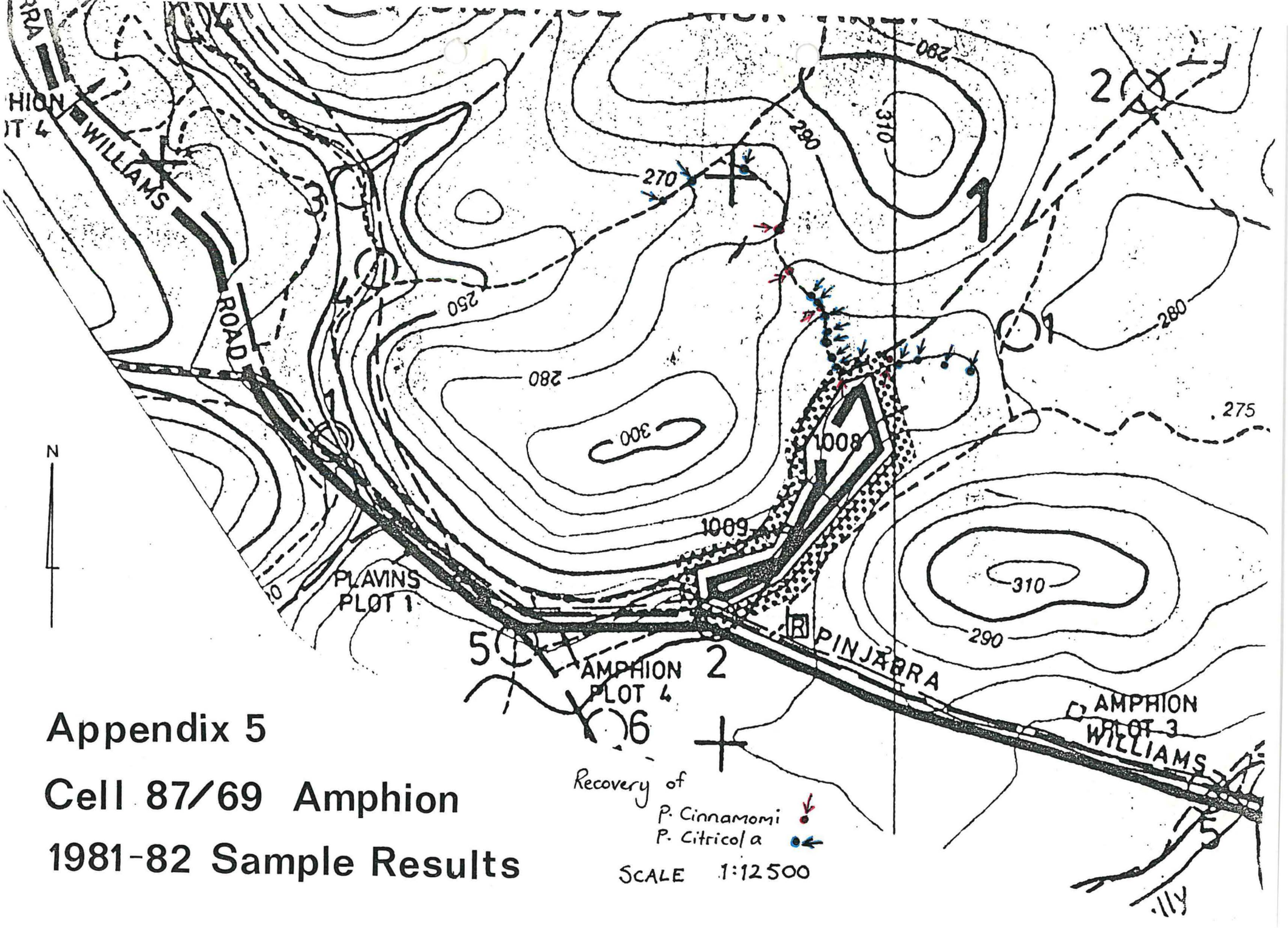


Appendix 4a
Cell 1 (1980) Dieback Map



Appendix 4b

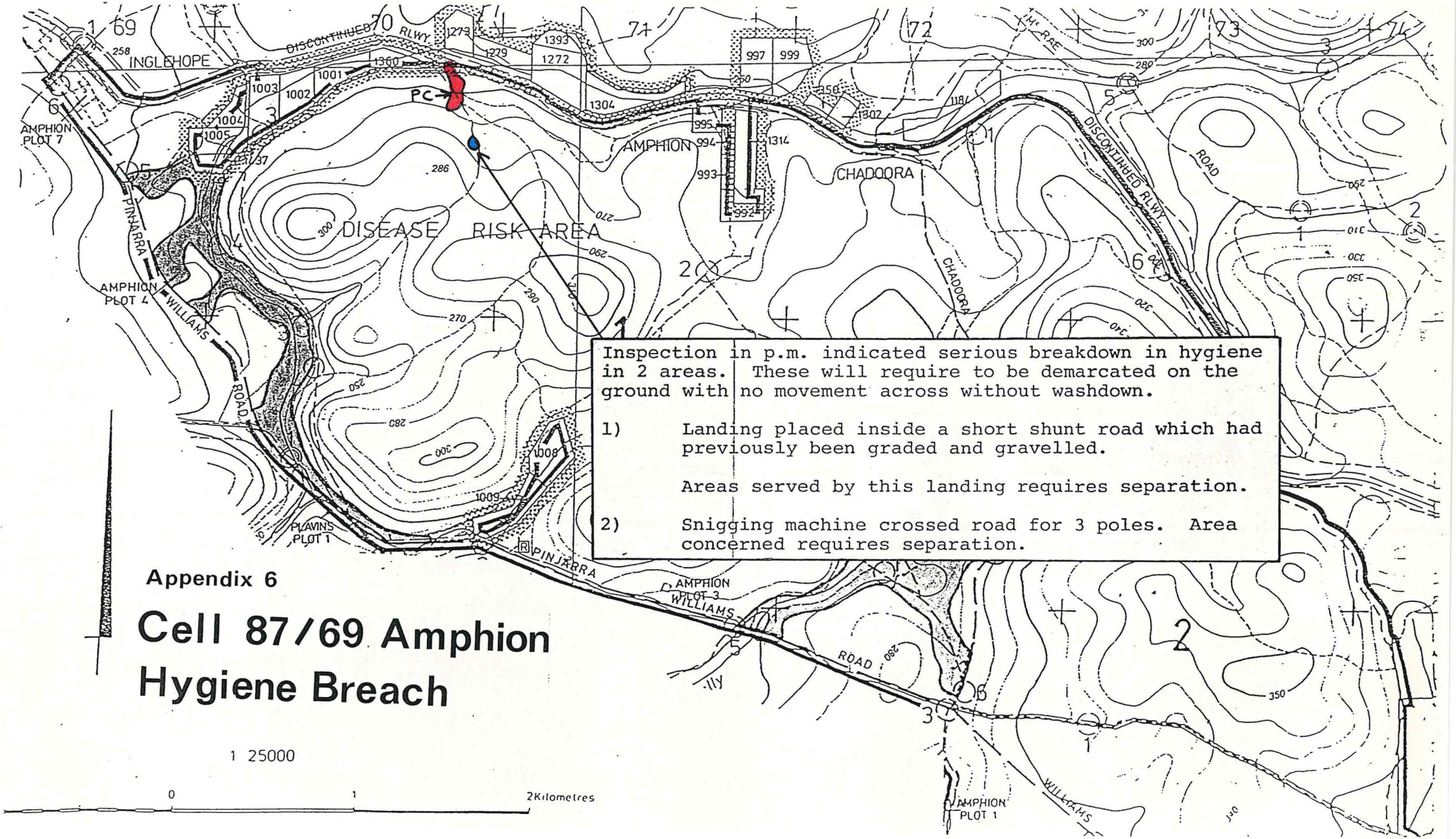
Cell 87/69 Amphion Dieback Map



Appendix 5

Cell 87/69 Amphion

1981-82 Sample Results



Inspection in p.m. indicated serious breakdown in hygiene in 2 areas. These will require to be demarcated on the ground with no movement across without washdown.

1) Landing placed inside a short shunt road which had previously been graded and gravelled.

Areas served by this landing requires separation.

2) Snigging machine crossed road for 3 poles. Area concerned requires separation.

Appendix 6

Cell 87/69 Amphion Hygiene Breach