

Submission to the Upper Hunter Strategic Assessment

This submission documents some (unacknowledged) adverse effects of coal mining in regard to threatened species in the Upper Hunter, and suggests there is a case for greater regulation in regard to biodiversity assessment. To illustrate this point, the submission will focus on two examples of flawed environmental assessment in regard to populations of a threatened species – *Diuris tricolor* – occurring at coal mines in the Upper Hunter Valley.

Diuris tricolor is (or was) listed as a threatened species under both the NSW TSC Act and the Commonwealth EPBC Act, and the Muswellbrook LGA population of *Diuris tricolor* is listed as an endangered population under the TSC Act.

The environmental assessment¹ for the Mt Arthur/Drayton coal mine rail loop documented *Diuris tricolor* as occurring at the site (found during surveys and recorded in the species list in the appendices) but then went on to claim no threatened species occur at the site. Excerpts from the environmental assessment are included in Appendix 1. Following subsequent development of the rail loop it is unlikely *Diuris tricolor* still exists at the site. The true position had obviously been misrepresented in the environmental assessment. Had the true position been acknowledged, then measures may have been put in place at the development approval stage to preserve at least part of the population at that site. It can also be questioned why the existence of a threatened species in the area was not subsequently flagged in the main environmental assessment for the Mt Arthur coal mine development, and whether other populations did occur in the area and have since been destroyed as a consequence.

The environmental assessment² for the Anvil Hill/Mangoola coal mine, dated 2006, documents *Diuris tricolor* as occurring at only a single location in the area. The location is outside the area of disturbance – this is shown in Appendix 2, which is Figure 4.5 Threatened and Significant Flora Locations, extracted from the original environmental assessment. However, just 4 years later (*after* Development Approval), the environmental assessment³ for the proposed expansion of the area of disturbance shows a significant population of *Diuris tricolor* actually occurs over a large area within the area of disturbance – this is shown in Appendix 3, which is Figure 3.2 Threatened Flora Locations, extracted from the ecological assessment for the proposed expansion of the area of disturbance, dated 2010. Much, if not all, of this population will by now have been destroyed (along with *Prasophyllum* sp. Wybong, which is listed as Critically Endangered under the EPBC Act). Again, the true position was misrepresented in the original environmental assessment. It is reasonable to question how this population of *Diuris tricolor* (a species which is highly visible when flowering), which according to Figure 3.2 covers an extent of many kilometres, and which occurs in abundance along one of the main access roads (Limvardy Rd) leading into the site, was apparently overlooked during years of ecological surveys in the area (including environmental assessments relating to Development Modifications 1, 2 & 3). If the true position had not been misrepresented in the original environmental assessment (and subsequent Development Modifications) then regulatory measures may have been put in place to preserve at least part of this significant population.

The above examples, both of which can be easily confirmed simply from the attached documentation, are just two of many examples that raise legitimate questions about the standard of biodiversity assessment and reporting in regard to coal mine development in the Upper Hunter, and suggest a requirement for increased regulation, with appropriate incentives against misrepresentation. Yet as long as environmental assessment is conducted by entities selected, contracted and paid for by the mining companies, a cynical public could be forgiven for thinking this situation is bound to be repeated.

Misrepresentation in environmental assessment is easily achieved. Techniques available in regard to biodiversity assessment include: surveying for threatened species in the wrong locations e.g. avoiding likely habitat; surveying for threatened species at the wrong times e.g. when species are dormant and not visible above ground; focusing survey effort on offset areas rather than area of disturbance; simply turning a blind eye to threatened species seen during surveys (or else not looking too closely); misidentifying threatened species; not surveying at all but relying on desktop studies and previous (dubious) reporting; incorrect reporting of results; wilful ignorance; deliberate incompetence; and swamping the public with thick reports that overwhelm the reader with content, yet misrepresent key items that are lost in the detail.

The 'Invitation to Comment' states "A Biodiversity Plan for Coal Mining in the Upper Hunter Valley (Biodiversity Plan), together with a Strategic Assessment Report, will be prepared by the NSW Government, *assisted by participating mining companies*". In this case, some of the participating mining companies (and contractors engaged by them to undertake environmental assessment) are the same organisations responsible for misrepresentation in the two examples given above.

Regardless of who regulates the assessment process, greater care needs to be taken to ensure biodiversity assessments state the true position. Better still, a body of scientists (including reputable ecologists) should be established – trusted by the community and independent of government and vested interests – to perform independent biodiversity assessment (including ground truthing surveys) of areas subject to coal mining development in the Upper Hunter.

Thank you for providing an opportunity to comment.

References:

1. "Antiene joint user rail facility environmental impact statement", prepared for Coal Operations Australia Limited & Drayton Coal Pty Ltd by Umwelt (Australia) Pty Limited, March 2000
2. "Anvil Hill Project – Environment Assessment", Volume 4, Appendix 9a, prepared for Centennial Hunter by Umwelt (Australia) Pty Ltd, August 2006
3. "Modifications to Mangoola Coal Mine Plans and Relocation of 500kV Electricity Transmission Line – Ecological Assessment", Volume 3, Appendix C1, prepared for Xstrata Mangoola Pty Limited by Umwelt (Australia) Pty Limited, December 2010

Appendix 1

Excerpts from "Antiene joint user rail facility environmental impact statement", prepared for Coal Operations Australia Limited & Drayton Coal Pty Ltd by Umwelt (Australia) Pty Limited, March 2000

**Drayton Coal Pty Ltd &
Coal Operations Australia Limited**

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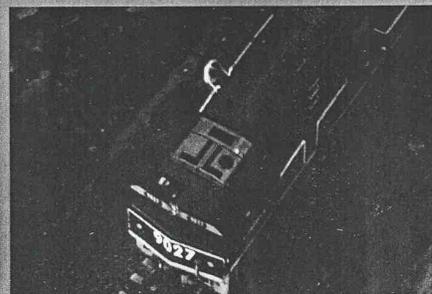
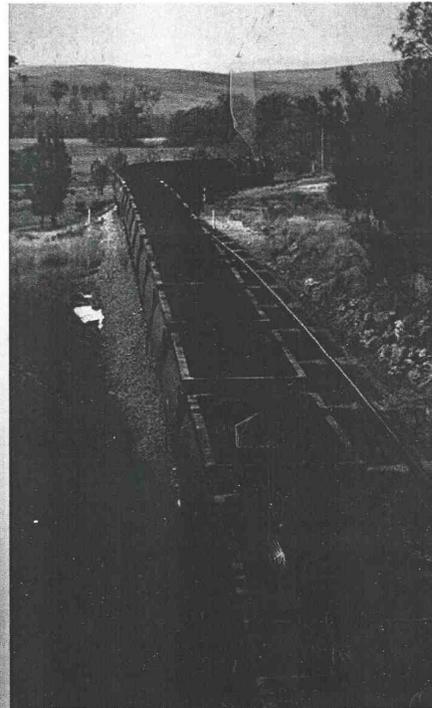
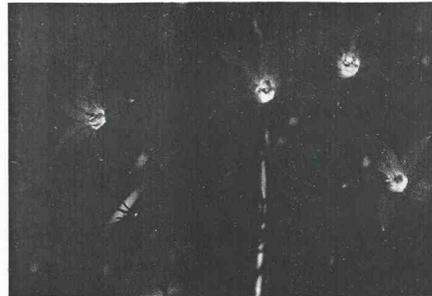
Antiene Joint User Rail Facility Environmental Impact Statement

**Volume 1
Main Text**

March 2000



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Report No. 1323/R01

Prepared for:

**COAL OPERATIONS AUSTRALIA LIMITED
& DRAYTON COAL PTY LTD**

**ANTIENE JOINT USER RAIL FACILITY
ENVIRONMENTAL IMPACT STATEMENT**

VOLUME 1



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species. Common species included *Wahlenbergia communis* (Tufted Bluebell), *Calotis lappulacea* (Yellow Burr Daisy), *Elymus scaber* (Common Wheatgrass), *Dianella revoluta*, *Themeda australis* (Kangaroo Grass) and Kikuyu (*Pennisetum clandestinum**). Other introduced species included Black Nightshade (*Solanum nigrum**) and Couch (*Cynodon dactylon**). There was a high level of leaf litter cover throughout the community, with cover generally being 80% to 100%. The community also showed signs of disturbance, particularly through grazing by Eastern Grey Kangaroos, with a large population being observed to use the habitats of the area.

3.2.5 Aquatic Vegetation

Aquatic vegetation occurs in the study area in both natural and constructed waterways. The vegetation ranges from grasses and rushes in intermittent waterways, to fully aquatic vegetation. Typically occurring species include *Typha orientalis* (Cumbungi), *Myriophyllum* sp. (Watermillfoil), *Phragmites australis* (Common Reed), *Paspalum distichum* (Water Couch), *Eleocharis acuta* (Spike-rush) and the introduced Spiny Rush (*Juncus acutis**), Umbrella Sedge (*Cyperus eragrostis**) and Water Buttons (*Cotula coronopifolia**). Other species also occur in intermittently wet areas including *Paspalum distichum**, Kikuyu (*Pennisetum clandestinum**), Couch (*Cynodon dactylon**) and *Agrostis avenaceus* (Beard Grass).

The main drainage line which occurs in the study area is Ramrod Creek which flows from the northwest corner of the Drayton Colliery Mining Lease through the A171 area, to the north of the study area. The Creek is joined by several small tributaries which drain surrounding areas. Several constructed waterways also occur in the study area, including farm dams and effluent treatment ponds, with the edges of these structures being affected by stock use. Stock impacts and severe erosion were also evident at a number of the natural waterways occurring in the study area, including Ramrod Creek. The ongoing erosion at some of these sites limits the potential for significant vegetation to occur in these areas.

3.3 THREATENED FLORA SPECIES

Several threatened flora species have been recorded in the Muswellbrook and Camberwell 1:100,000 map sheet areas (ATLAS Database), however, none have been recorded within a 15 km radius of the proposed development. None of these species were located in the study area, with none being expected to occur in the area (refer to Section 5.1). The proposed development will not significantly impact on any locally occurring threatened flora species.

Family / Genus	Species	Common Name	Status	Umwelt Study	D&M Study
MALVACEAE					
<i>Modiola</i>	<i>caroliniana</i>	Red Flowered Mallow	Introduced	X	X
<i>Sida</i>	<i>corrugata</i>	Prostrate Flannel Weed	Introduced		X
<i>Sida</i>	<i>rhombifolia</i>	Flannel Weed			
MIMOSACEAE					
<i>Acacia</i>	<i>binervia</i>	Coastal Myall			X
<i>Acacia</i>	<i>brownei</i>	A Wattle		X	
<i>Acacia</i>	<i>decora</i>	Western Golden Wattle		X	X
<i>Acacia</i>	<i>excelsa</i>	Ironwood		X	
<i>Acacia</i>	<i>longissima</i>	A Wattle		X	
<i>Acacia</i>	<i>melanoxyon</i>	Blackwood		X	
<i>Acacia</i>	<i>podalyrifolia</i>	Queensland Silver Wattle	X		
MYOPORACEAE					
<i>Eremophila</i>	<i>debilis</i>	Winter Apple; Amulla		X	X
MYRTACEAE					
<i>Angophora</i>	<i>floribunda</i>	Rough-barked Apple		X	
<i>Corymbia</i>	<i>maculata</i>	Spotted Gum		X	
<i>Eucalyptus</i>	<i>albans</i>	White Box		X	X
<i>Eucalyptus</i>	<i>blakelyi</i>	Blakely's Red Gum		X	X
<i>Eucalyptus</i>	<i>crebra</i>	Narrow-leaved Ironbark		X	X
<i>Eucalyptus</i>	<i>dawsonii</i>	Slaty Gum		X	X
<i>Eucalyptus</i>	<i>moluccana</i>	Grey Box		X	X
<i>Eucalyptus</i>	<i>tereticornis</i>	Forest Red Gum		X	X
<i>Eucalyptus</i>				X	
OLEACEAE					
<i>Notelaea</i>	<i>microcarpa</i>	Native Olive			X
ORCHIDACEAE					
<i>Diuris</i>	<i>tricolor</i>			X	
OXALIDACEAE					
<i>Oxalis</i>	<i>pes-caprae</i>	Soursob	Introduced		X
PITTOSPORACEAE					
<i>Bursaria</i>	<i>spinosa</i>	Blackthorn			X
PLANTAGINACEAE					
<i>Plantago</i>	<i>lanceolata</i>	Plantane	Introduced	X	X
POACEAE					
<i>Agrostis</i>	<i>avenacea</i>	Beard Grass	Introduced	X	X
<i>Aristida</i>	<i>personata</i>	A Wiregrass		X	X
<i>Aristida</i>	<i>ramosa</i>	Three-awn Speargrass		X	X
<i>Austrodanthonia</i>	<i>fulva</i> (prob)		Introduced	X	
<i>Avena</i>	<i>barbata</i>	Bearded Oats		X	
<i>Bothriochloa</i>	<i>macra</i>	Red Grass		X	X
<i>Bromus</i>	<i>molliformis</i>	A Soft Brome		X	
<i>Chloris</i>	<i>gayana</i>	Rhodes Grass		X	
<i>Chloris</i>	<i>truncata</i>	Windmill Grass		X	X
<i>Cymbopogon</i>	<i>refractus</i>	Barbed Wire Grass		X	
<i>Cynodon</i>	<i>dactylon</i>	Common Cooch		X	
<i>Danthonia</i>	<i>richardsoni</i>	A Wallaby Grass		X	X
<i>Danthonia</i>	<i>longifolia</i>	A Wallaby Grass		X	
<i>Danthonia</i>	<i>sp.</i>	A Wallaby Grass		X	X
<i>Danthonia</i>	<i>teniour</i>	A Wallaby Grass		X	X
<i>Dichelachne</i>	<i>micrantha</i>	Shorthair Plumegrass	Introduced	X	X
<i>Echinopogon</i>	<i>caespitosus</i> var.	A Hedgehog Grass		X	
<i>Elymus</i>	<i>scaber</i>	Common Wheatgrass	Introduced	X	X
<i>Eragrostis</i>	<i>brownii</i>	Browns Lovegrass		X	
<i>Eragrostis</i>	<i>leptostachya</i>	Paddock Lovegrass	Introduced	X	X
<i>Hordeum</i>	<i>leporinum</i>	Barley	Introduced		X
<i>Paspalum</i>	<i>dilatatum</i>	Paspalum		X	
<i>Paspalum</i>	<i>distichum</i>	Water Cooch		X	
<i>Pennisetum</i>	<i>clandestinum</i>	Kikuyu Grass		X	



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Title: *Antiene* joint user rail facility environmental impact statement / prepared for Coal Operations Australia Limited & Drayton Coal Pty Ltd [by] Umwelt (Australia) Pty Limited.

Publisher: Toronto, N. S. W. : Umwelt (Australia) Pty. Ltd., 2000.

Description: 2 v. : ill., maps : 30 cm.

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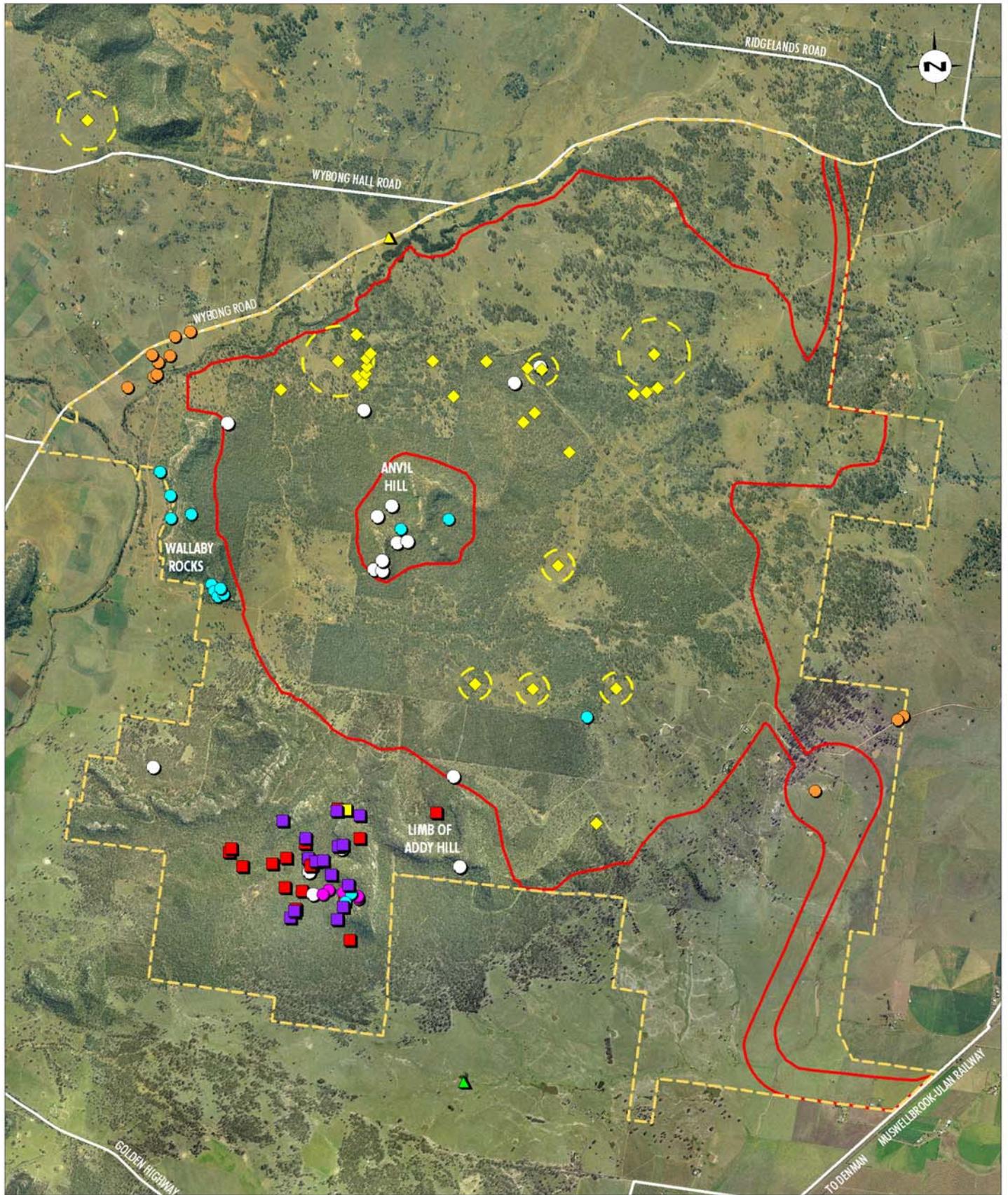
Appendix 2

Figure 4.5 Threatened and Significant Flora Locations

extracted from page 4.22, “Anvil Hill Project – Environment Assessment”, Volume 4, Appendix 9a, prepared for Centennial Hunter by Umwelt (Australia) Pty Ltd, August 2006

available online at

<https://majorprojects.affinitylive.com/public/e4c668242b8481dcc787e145ccbcd65e/Environmental%20Assessment-Appendix09-Ecology-PartA.pdf>



Source: DEC Atlas of HSW Wildlife (2006), National Herbarium of HSW (2006), HLA Envirosciences (2003)
 Base Map : Dept. of Lands (2003), ortho-rectified by Plateau Images

Legend

- Proposed Disturbance Area
- Study Area

- *Acacia pendula*
- ◆ *Goodenia macbarronii* sites
- ▲ *Bathriochloa biloba*
- *Grevillea montana*
- *Commersonia rosea*
- *Pomaderris queenslandica*
- *Cymbidium canaliculatum*
- *Lasiopetalum longistamineum*
- ▲ *Diuris tricolor*
- *Pomaderris reperta*
- ◆ *Goodenia macbarronii* (areas)

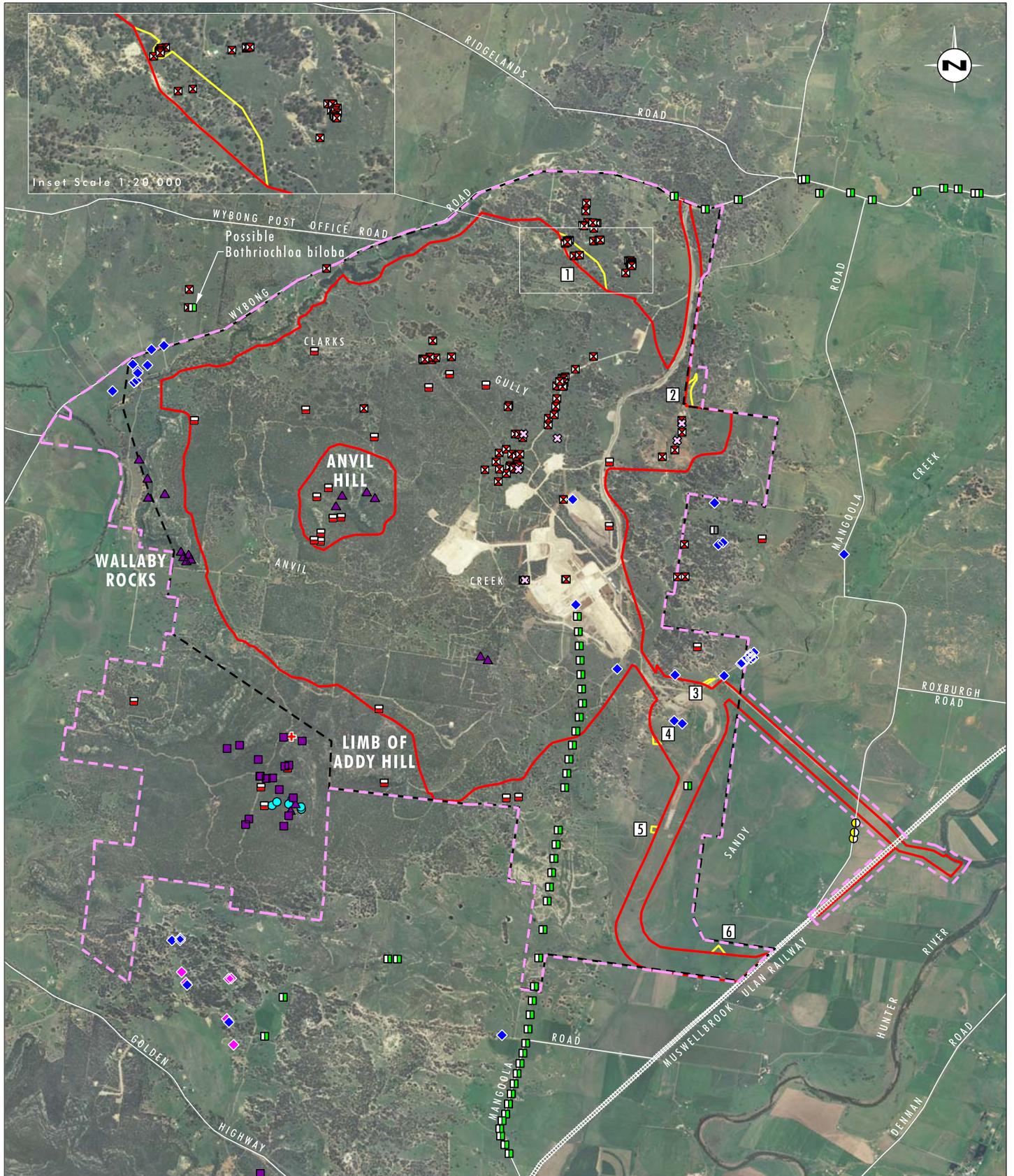
FIGURE 4.5
 Threatened and Significant Flora Locations

Appendix 3

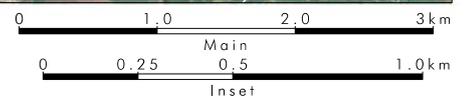
Figure 3.2 Threatened Flora Locations

extracted from page 3.5, “Modifications to Mangoola Coal Mine Plans and Relocation of 500kV Electricity Transmission Line – Ecological Assessment”, Volume 3, Appendix C1, prepared for Xstrata Mangoola Pty Limited by Umwelt (Australia) Pty Limited, December 2010

available online at <http://www.umwelt.com.au/Mangoola/docs/AppendixC1.pdf>



Source: DECC Atlas of NSW Wildlife (2006), National Herbarium of NSW (2006), HLA Envirosciences (2003)
Base Source: Dept. of Lands (2003), Xstrata Mangoola (2010)



Legend

- | | | |
|---------------------------------------|------------------------------------|------------------------------------|
| Approved Project Disturbance Area | <i>Cymbidium canaliculatum</i> | <i>Acacia homalophylla-pendula</i> |
| Mining Lease 1626 Boundary | <i>Diuris tricolor</i> | <i>Prasophyllum sp. Wybong</i> |
| Modified Project Disturbance Boundary | <i>Eucalyptus camaldulensis</i> | <i>Lasiopetalum longistamineum</i> |
| Project Area | <i>Lasiopetalum longistamineum</i> | <i>Pomaderris queenslandica</i> |
| <i>Acacia pendula</i> | <i>Pomaderris queenslandica</i> | <i>Pomaderris reperta</i> |
| <i>Bothriochloa biloba</i> | <i>Pomaderris reperta</i> | <i>Thesium australe</i> |
| <i>Commersonia rosea</i> | <i>Thesium australe</i> | |

FIGURE 3.2
Threatened Flora Locations