

Application form

Threatened Species

Section 15(a) – Nature Conservation (Administration) Regulation 2006

Clearing permit (protected plants)

OFFICIAL USE ONLY

DATE RECEIVED

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FILE REF

PROJECT REF

COMPLETE FORM

CORRECT AA

COMPLETE FEE

ADMINISTERING DISTRICT

ENTERED BY [SIGNATURE]

DATE

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Important information for applicants

This form is to be used to apply for a clearing permit. You need a clearing permit if your proposed activity involves the legitimate taking or destruction of protected plants in the wild, except where an exemption applies. Information requested will enable your application to be processed as prescribed by the *Nature Conservation Act 1992*. Your application must be assessed and a permit granted by the chief executive before you can proceed with the proposed activity. Your application may take up to 40 days to process.

Before completing your application please read the information materials included with your application kit. Before lodging this application you should be familiar with the requirements of the Nature Conservation Act available on the Office of the Queensland Parliamentary Counsel website <http://www.legislation.qld.gov.au>. If you have queries about how to complete this form correctly or need guidance contact Permit and Licence Management on **1300 130 372**.

Applicant information

A permit may only be granted to an individual or corporation. Please tick the appropriate box:

- AN INDIVIDUAL** → **Complete Section 1 applicant details — then complete sections 3 to 9**
- A CORPORATION** → **Complete Section 2 applicant details — then complete sections 3 to 9**

1. Applicant details for an individual

APPLICANT'S FAMILY NAME		TITLE
APPLICANT'S GIVEN NAME/S		DATE OF BIRTH
RESIDENTIAL ADDRESS (NOT A POST OFFICE BOX)		POST CODE
TELEPHONE (BUSINESS HOURS)	MOBILE	FACSIMILE

Application form – Part B (if applicable)
Clearing permit (protected plants)

TELEPHONE (AFTER HOURS)	EMAIL
POSTAL ADDRESS (WRITE 'AS ABOVE' IF SAME AS RESIDENTIAL ADDRESS)	POST CODE

2. Application details for corporations

REGISTERED LEGAL ENTITY NAME (NOT A BUSINESS TRADING NAME) Adani Mining Pty Ltd	
TRADING NAME/S (IF APPLICABLE)	
REGISTERED BUSINESS ADDRESS (NOT A POST OFFICE BOX) Level 25, 10 Eagle Street, Queensland	POST CODE 4000
TELEPHONE (BUSINESS HOURS) (07) 3223 4800	FACSIMILE (07) 3223 4850
EMAIL	WEBSITE www.adanimining.com
POSTAL ADDRESS (WRITE 'AS ABOVE' IF SAME AS BUSINESS ADDRESS) GPO Box 2569, Brisbane, Queensland	POST CODE 4001
ABN / ACN / AN, OR TITLE AND SECTION OF LEGISLATION UNDER WHICH CORPORATION HAS LEGAL STATUS ACN 145 455 205	
NAME OF PRINCIPAL OF CORPORATION Harsh Mishra	
SIGNATURE OF PRINCIPAL OF CORPORATION (or person authorised to sign on their behalf)	DATE

Details of nominated person in charge where the authorised activity is to be undertaken

NOMINATED CONTACT PERSON'S FAMILY NAME To be provided at a later date		TITLE
NOMINATED CONTACT PERSON'S GIVEN NAME/S		DATE OF BIRTH
RESIDENTIAL ADDRESS (NOT A POST OFFICE BOX)		POSTCODE
TELEPHONE (BUSINESS HOURS)	MOBILE	FACSIMILE
TELEPHONE (AFTER HOURS)	EMAIL	
POSTAL ADDRESS (WRITE "AS ABOVE" IF SAME AS RESIDENTIAL ADDRESS)		POSTCODE

3. Have you previously held this type of permit?

This may include permits in other States.

Yes No If yes, state the permit number (if known)

4. Protected plant details

What species of protected plant does the application refer to?

(If you require more space, please attach a separate sheet)

SCIENTIFIC NAME	COMMON NAME	SCHEDULE NUMBER (IF KNOWN)	QUANTITY
Please refer to attached Carmichael Coal Project - NCA Vegetation Clearing Permit Report - Adani Quarries			

5. What property or properties do you intend to take protected plants from?

PROPERTY NAME OR LOT ON PLAN DESCRIPTION LOT 2 ON SP119925 – NORTH CREEK QUARRY; LOT 3235 ON PH752 – BORROW 7 QUARRY; LOT 4 ON SP116046 – DISNEY QUARRY; LOT 656 ON SP138788 – BACK CREEK SOUTH QUARRY	
LOCAL GOVERNMENT NAME ISAAC REGIONAL COUNCIL	PARISH NAME TALKI
PROPERTY OWNER'S OR OCCUPIER'S FAMILY NAME	PROPERTY OWNER'S OR OCCUPIER'S GIVEN NAME/S
PROPERTY OWNER'S OR OCCUPIER'S SIGNATURE (OWNER'S SIGNATURE MAY NOT BE REQUIRED, CHECK WITH DEPARTMENT REPRESENTATIVES)	IF A SIGNATURE IS NOT OBTAINABLE, DO YOU HAVE THE PROPERTY OWNER'S OR OCCUPIER'S PERMISSION? <input type="checkbox"/> YES <input type="checkbox"/> NO

6. Where is the clearing to be conducted?

Provide the street address, real property description(s) of the land(s) in which the project is located and local government area. If you require more space, attach a separate sheet.

STREET ADDRESS PLEASE REFER TO ATTACHED CARMICHAEL COAL PROJECT - NCA VEGETATION CLEARING PERMIT REPORT - ADANI QUARRIES	
LOT	PLAN
LOCAL GOVERNMENT AREA	

If possible, provide a specific location within the property, a property name or attach a map with the project area clearly delineated. Also include the map name/details.

SPECIFIC LOCATION/PROPERTY NAME PLEASE REFER TO ATTACHED CARMICHAEL COAL PROJECT - NCA VEGETATION CLEARING PERMIT REPORT - ADANI QUARRIES
GEOGRAPHICAL COORDINATES PLEASE REFER TO ATTACHED CARMICHAEL COAL PROJECT - NCA VEGETATION CLEARING PERMIT REPORT - ADANI QUARRIES

7. Reason for clearing

Provide details of the clearing activity including the reason for the clearing and alternatives investigated, and any planned mitigation measures.

(If you require more space, attach a separate sheet)

DETAILS OF THE CLEARING ACTIVITY PLEASE REFER TO ATTACHED CARMICHAEL COAL PROJECT - NCA VEGETATION CLEARING PERMIT REPORT - ADANI QUARRIES

8. What are the approximate start and completion dates for the project?

START DATE APRIL 2014 (TO BE CONFIRMED)	END DATE OCTOBER 2014 (TO BE CONFIRMED)
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9. Provide the name(s) of the person(s) operating under this permit

FAMILY NAME TO BE ADVISED	GIVEN NAME
FAMILY NAME	GIVEN NAME

Application form – Part B (if applicable)
Clearing permit (protected plants)

FAMILY NAME	GIVEN NAME

10 Attachments

List all attached documents, including maps containing information supporting this application in the space below. If there are no attachments mark 'N/A'.

<p>ATTACHMENTS (LABEL ALL ATTACHMENTS ALPHABETICALLY E.G. "ATTACHMENT A")</p> <p>Please refer to attached Carmichael Coal Project - NCA Vegetation Clearing Permit Report - Adani Quarries</p>
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11. Applicant suitability

The permit may be granted if the applicant is an appropriate person to hold the permit, that is, if the applicant has the ability to carry out the activity under the authority in a competent and ethical way.

QUESTIONS		DETAILS
1. During the past 10 years have you ever (in Queensland or elsewhere) been found guilty of any criminal offence or entered a plea of guilty in a Court? (Note: does not include simple traffic offences such as parking, speeding.) If yes, provide details of the offence/s.	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
2. Have you ever had an equivalent permit from another State or country that was suspended and/or cancelled? If yes, provide details about the permit, the date it was suspended and/or cancelled and reasons for suspension/cancellation.	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

12. Declaration

Note: If you have not told the truth in this application you may be liable for prosecution under the relevant Acts or Regulations.

- I do solemnly and sincerely declare that the information provided is true and correct to the best of my knowledge and I make this solemn declaration conscientiously believing the same to be true.

**Application form – Part B (if applicable)
Clearing permit (protected plants)**

- I understand that all information supplied on or with this application form may be disclosed publicly in accordance with the *Right to Information Act 2009* and the *Evidence Act 1977*.

APPLICANT'S NAME	
APPLICANT'S SIGNATURE	DATE
IF APPLICANT IS A CORPORATION, WHAT IS YOUR POSITION IN THE CORPORATION?	

13. Applicant checklist

- Application form completed and signed
- Supporting information attached
- Landholder statement completed and signed

Please return your completed application to:

**Permit and Licence Management
Department of Environment and Heritage Protection**

GPO Box 2454
Brisbane Qld 4001

Enquiries: **1300 130 372**
Facsimile: (07) 3896 3342
E-mail: palm@ehp.qld.gov.au

Code of Practice or guidelines may be obtained from the EHP website <http://www.ehp.qld.gov.au> or by contacting the EHP Referral Centre on 1300 130 372.

environmental management



Carmichael Coal Project
NCA Vegetation Clearing Permit Report
Adani Quarries

6867
16 July 2013
Adani Mining Pty Ltd





Document Control

Title	Carmichael Coal Project - NCA Vegetation Clearing Permit Report – Adani Quarries
Job Number	6867
Client	Adani Mining Pty Ltd

Document Issue

Issue	Date	Prepared By	Checked By
Draft	29.04.2013	Dr Andrew Davies	Murray Saunders
Client Issue	02.05.2013	Angela Little	Dr Andrew Davies
Final	08.07.2013	David Havill	Dr Andrew Davies
Final V2	11.07.2013	Tom Connor	Ross Marshall
Final V3	16.07.2013	Dr Andrew Davies	Ross Marshall

Disclaimer

This report has been prepared for **Adani Mining Pty Ltd. Saunders Havill Group** cannot accept responsibility for any use of or reliance upon the contents of this report by any third party.

Reports and/or Plans by Others

Reports and/or plans by others may be included within this Environmental Management report to support the document.



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Plans

Plan 1: Location 1 – North Creek Quarry (Lot 2 on SP119925)

Plan 2: Location 2 – Borrow 7 Quarry (Lot 3235 on PH752)

Plan 3: Location 3 – Disney Quarry (Lot 4 on SP116046)

Plan 4: Location 4 – Back Creek South Quarry (Lot 656 on SP138788)



I. Introduction

The *Environmental Management Division* of the **Saunders Havill Group** was engaged by **Adani Mining Pty Ltd** to prepare this vegetation clearing permit application to enable quarry excavations for structural materials required for the Carmichael Coal Project. This report supports the *Nature Conservation Act, 1992* (NCA) clearing permit application.

The application covers proposed North Creek, Borrow 7, Disney and Back Creek South Quarries and represents sites where excavation cannot occur without clearing of vegetation protected under the NCA. These locations require clearing as they are necessary to provide structural materials for the Project. No alternative locations exist for these necessary quarries.

Borrow 7 and Disney quarries are currently overlaid with remnant vegetation polygons by *Regional Ecosystem and Remnant Mapping Version 6.1*. Complex Property Map of Assessable Vegetation applications which reflect species identified on-ground at each location in this report have been submitted to the *Department of Natural Resources and Mines*. On-ground proofing supports a proposed change from Endangered to Least Concern Regional Ecosystems for vegetation contained within the Disney Quarry disturbance area. No remnant vegetation was observed within the Borrow 7 Quarry footprint.

It is noted that this NCA permit application applies only for the clearing of Least Concern native species. No EVNT species have been identified within the quarry extents based on surveys and species audits compiled to date. Preclearance procedures are in place to avoid the clearing of EVNT species.



2. Clearing Extent & Methodology

2.1. Clearing extent

A permit for clearing of quarry footprints is required at four locations, as follows:

1. Lot 2 on SP119925 – North Creek Quarry
2. Lot 3235 on PH752 – Borrow 7 Quarry
3. Lot 4 on SP116046 – Disney Quarry
4. Lot 656 on SP138788 – Back Creek South Quarry

2.2. Clearing methodology

Generally, the landscape surrounding the application areas is cleared or consists of open woodlands where vegetation cover is sporadic with densities increasing toward watercourses and drainage lines. As shown on **Plans 1-4**, no clearing works are proposed near watercourses or drainage lines.

Clearing at each quarry site will be restricted to the approved area in the Plan of Operations for each site and:

- Existing tracks and cleared fence lines to obtain site access;
- Within the designated quarry footprint as per the NCA permit conditions.

No EVNT plants were identified within the study areas, however, if EVNT flora species are identified as part of pre-clearance surveys, additional permits will be sought. Pre-clearance surveys are required to minimise the time lag between approval and the commencement of works. This NCA permit application applies to the proposed clearing of Least Concern native species on lease hold land.

2.3. Fauna Spotter

All clearing works for proposed quarries require the appointment of a DEHP (Formerly DERM) registered Fauna Spotter / Catcher in accordance with a Fauna Management Plan (FMP). The Fauna spotter will undertake detailed pre-clearance surveys ahead of the commencement of clearing searching for habitat (fallen logs, nests, outcrops, etc.) and animal breeding places. The purpose of the pre-clearance surveys will be to avoid / minimise disturbance of native animals and to finalise clearing sequences and fauna flushing directions. The following points highlight the role of the Fauna Spotter / Catcher in the quarry clearing process:

- a. Appointment of a registered / certified Fauna Spotter
- b. Pre-clearance surveys to be completed by the Fauna Spotter
- c. Fauna Spotter to review and amend the Fauna Management Plan based on findings of the pre-clearance surveys
- d. Fauna Spotter to be present on-site during clearing works
- e. Post Clearing Fauna Spotter Reporting as required by legislation



3. Audit of proposed clearing

Section 3 provides an audit of native species within the proposed clearing footprints. The number of species listed for each area has been extrapolated from transects and quadrant surveys completed within each quarry location. The number of specimens requiring removal as part of each clearing exercise is likely to be considerably less than that identified on each schedule. This is due to the relatively disturbed state of site vegetation in general, a survey regime which gave precedence to vegetated areas and the adopted clearing methodology as specified in **Section 2.2**.

The density and number of plants at each site have been determined using standard assessment methods which detail the numbers of individual plants per hectare. Variation in vegetation structure and density across each site was incorporated via stratified sampling within designated vegetation types. This information has been utilised to determine the number of each species that will require removal at each location.



3.1. Location 1 – North Creek Quarry (Lot 2 on SPII9925)

Photos: Profile of Potential Clearing Area



Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)

Str.	Rel. Dom.	Scientific Name	Common Name	Conservation Status (NCA)	EPBCA Status	Number
T2	A	<i>Acacia excelsa</i>	Ironwood	Least Concern	Not Listed	58
Shrub	D	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	1865
	A	<i>Eucalyptus coolabah</i>	Coolabah	Least Concern	Not Listed	466
	A	<i>Acacia excelsa</i>	Ironwood	Least Concern	Not Listed	466
	A	<i>Owenia acidula</i>	Emu Bush	Least Concern	Not Listed	58
	A	<i>Erythroxylum australe</i>	Dogwood	Least Concern	Not Listed	58

NB: No native grasses recorded

Vegetation Type Descriptions

Vegetation Type 1

Very sparse T2 layer of *Acacia excelsa* over a sparse shrub layer of mixed natives dominated by *Carissa ovata* with *Acacia excelsa*, juvenile *Eucalyptus coolabah*, *Owenia acidula* and *Erythroxylum australe* and a ground layer of exotic *Pennisetum ciliare*

Vegetation Type 2

Ground cover of exotic species (*Pennisetum ciliare* and *Chloris gayana*) only



Legend

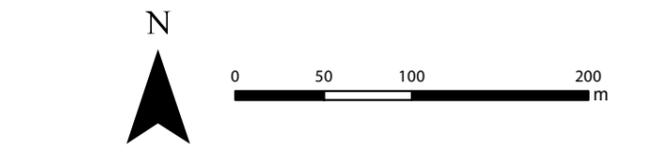
- DCDB
- Quarry Disturbance Extent

Disturbance Area (9 ha)

- Vegetation Type 1 (5.8 ha)
- Vegetation Type 2 (3.2 ha)

Regional Ecosystem v6.1

- Remnant vegetation containing Endangered REs
- Remnant vegetation containing Of Concern REs
- Remnant vegetation that is a Least Concern RE



SH saunders havill group

THESE PLANS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF THE CLIENT SAUNDERS HAVILL GROUP. SAUNDERS HAVILL GROUP CANNOT ACCEPT RESPONSIBILITY FOR ANY USE OF OR RELIANCE UPON THE CONTENTS OF THESE DRAWINGS BY ANY THIRD PARTY.

CONFIRM ALL DIMENSIONS ON SITE PRIOR TO CONSTRUCTION AND DO NOT SCALE FROM THE DRAWINGS. ALL DIMENSIONS ARE IN METERS. ANY DISCREPANCIES SHOULD BE CLARIFIED IN WRITING WITH SAUNDERS HAVILL GROUP PRIOR TO THE COMMENCEMENT OF WORK.

PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR FURTHER UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.

adani

ISSUES:

Issue	Date	Description	Drawn	Checked
A	29.04.2013	Prelim Draft	TC	RM

APPROVED COMPANY

ISO 9001 Quality Management Systems

QMS

APPROVED COMPANY

ISO 14001 Environmental Management Systems

QMS

Carmichael Coal Rail Project

North Creek Quarry - NCA 1992 Clearing Permit Plan

Date | 29.04.2013
 Scale | 1:4,000 @ A3
 Data Information: Universal Transverse Mercator GDA 1994 MGA Zone 55
 Client | Adani Mining Pty Ltd
 Project | Carmichael Coal Rail Project
 Address/RPD | Isaac Regional Council
 Source | DCBD (DNRM, 2012), Aerial (Google, 2012) RE & HVR (EHP, 2013)

Plan 1

Of 5

SHG File
 6550 E 01 North Creek Quarry NCA A



3.2. Location 2 – Borrow 7 Quarry (Lot 3235 on PH752)

Photos: Profile of Potential Clearing Area



Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)

Str.	Rel. Dom.	Scientific Name	Common Name	Conservation Status (NCA)	EPBCA Status	Number/Area
T1	A	<i>Corymbia dallachiana</i>	Ghost Gum	Least Concern	Not Listed	87
T2	D/A	<i>Acacia excelsa</i>	Ironwood	Least Concern	Not Listed	5703
	D	<i>Flindersia dissosperma</i>	Leopard Wood	Least Concern	Not Listed	1826
	A	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	825
	A	<i>Lysiphyllum carronii</i>	Native Bauhinia	Least Concern	Not Listed	105
	A	<i>Grevillea striata</i>	Beefwood	Least Concern	Not Listed	92
	A	<i>Petalostigma pubescens</i>	Quinine Bush	Least Concern	Not Listed	87
Shrub	CD/A	<i>Atalaya hemiglauca</i>	Whitewood	Least Concern	Not Listed	9516
	CD/A	<i>Acacia excelsa</i>	Ironwood	Least Concern	Not Listed	5457
	CD/A	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	4278
	A	<i>Capparis lasiantha</i>	Wait-a-While	Least Concern	Not Listed	2344
	A	<i>Archidendropsis basaltica</i>	Dead Finish	Least Concern	Not Listed	1054
	A	<i>Lysiphyllum carronii</i>	Native Bauhinia	Least Concern	Not Listed	843
	D	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	815
	A	<i>Eremophila deserti</i>	Turkey Bush	Least Concern	Not Listed	812
	A	<i>Grewia latifolia</i>	Dogs Balls	Least Concern	Not Listed	604
	D	<i>Flindersia dissosperma</i>	Leopard Wood	Least Concern	Not Listed	603



Str.	Rel. Dom.	Scientific Name	Common Name	Conservation Status (NCA)	EPBCA Status	Number/Area
	A	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	424
	A	<i>Petalostigma pubescens</i>	Quinine Bush	Least Concern	Not Listed	261
	A	<i>Owenia acidula</i>	Emu Bush	Least Concern	Not Listed	233
	A	<i>Eremophila bigoniiflora</i>	Dogwood	Least Concern	Not Listed	163
	A	<i>Terminalia oblongata</i>	Yellowwood	Least Concern	Not Listed	163
	A	<i>Erythroxylum australe</i>	Dogwood	Least Concern	Not Listed	92
	A	<i>Grevillea striata</i>	Beefwood	Least Concern	Not Listed	92
	A	<i>Lysiphyllum hookeri</i>	Bauhinia	Least Concern	Not Listed	92
	A	<i>Citrus glauca</i>	Desert Lime	Least Concern	Not Listed	81
	A	<i>Enchylaena tomentosa</i>	Ruby Saltbush	Least Concern	Not Listed	81
Ground	A	<i>Eragrostis sororia</i>	Love Grass	Least Concern	Not Listed	41521 m ²
	A	<i>Heteropogon contortus</i>	Black Spear Grass	Least Concern	Not Listed	29818 m ²
	A	<i>Themeda triandra</i>	Kangaroo Grass	Least Concern	Not Listed	17110 m ²
	A	<i>Capparis lasiantha</i>	Wait-a-While	Least Concern	Not Listed	8095 m ²
	A	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	5059 m ²
	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	2561 m ²
	A	<i>Lysiphyllum carronii</i>	Red Bauhinia	Least Concern	Not Listed	127 m ²
	A	<i>Panicum decompositum</i>	Native Millet	Least Concern	Not Listed	65 m ²
	A	<i>Sida cordifolia</i>	Flannel Weed	Least Concern	Not Listed	26 m ²

NB: Relative dominance is as per vegetation type (see plan)

Vegetation Type Descriptions

Vegetation Type 1

Very sparse T2 layer of *Acacia harpophylla* and *Grevillea striata* with a sparse shrub layer mix of native species (e.g. *Atalaya hemiglauca*, *Capparis lasiantha*, *Lysiphyllum hookeri*) over an exotic *Pennisetum ciliare* dominated ground layer

Vegetation Type 2

Very sparse T2 layer of *Acacia excelsa* with a sparse shrub layer mix of native species (e.g. *Atalaya hemiglauca*, *Capparis lasiantha*, *Owenia acidula*) over an exotic *Pennisetum ciliare* dominated ground layer



Vegetation Type 3

Very sparse T2 layer dominated by *Acacia excelsa* with *Lysiphyllum carronii* and a sparse shrub layer mix of native species (e.g. *Carissa ovata* and *Atalaya hemiglauca* co-dominant with *Capparis lasiantha*, *Archidendropsis basaltica*, *Eremophila deserti*) over an exotic *Pennisetum ciliare* ground layer

Vegetation Type 4

Very sparse T2 layer dominated by *Acacia excelsa* and a sparse shrub layer mix of native species (e.g. *Acacia excelsa* and *Atalaya hemiglauca* co-dominant with *Capparis lasiantha*, *Carissa ovata*, *Eremophila deserti*) over an exotic *Pennisetum ciliare* and native *Heteropogon contortus* and *Eragrostis sororia* ground layer

Vegetation Type 5

T1 layer consisting of one *Corymbia dallachiana* specimen over a very sparse T2 layer dominated by *Flindersia dissosperma* with *Petalostigma pubescens* and *Acacia excelsa* plus a sparse shrub layer mix of native species (juvenile T2 species plus *Eremophila mitchellii*, *Carissa ovata* and *Grewia latifolia*) over an exotic *Pennisetum ciliare* dominated ground layer

Vegetation Type 6

Cleared and heavily grazed non-remnant area with a very sparse shrub layer of *Acacia harpophylla* and *Carissa ovata* and ground layer dominated by exotic *Pennisetum ciliare*. Other introduced species include *Parthenium hysterophorus*, *Chloris inflata* and *Melinis repens*



Legend

- DCDB
- Quarry Disturbance Extent
- Disturbance Area (54.6 ha)**
- Vegetation Type 1 (9.2 ha)
- Vegetation Type 2 (7.8 ha)
- Vegetation Type 3 (10.5 ha)
- Vegetation Type 4 (16.3 ha)
- Vegetation Type 5 (9.2 ha)
- Vegetation Type 6 (1.6 ha)
- Regional Ecosystem v6.1**
- Remnant vegetation containing Endangered REs
- Remnant vegetation containing Of Concern REs
- Remnant vegetation that is a Least Concern RE



Carmichael Coal Rail Project

Borrow 7 Quarry - NCA 1992 Clearing Permit Plan

THESE PLANS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF THE CLIENT SAUNDERS HAVILL GROUP. SAUNDERS HAVILL GROUP CANNOT ACCEPT RESPONSIBILITY FOR ANY USE OF OR RELIANCE UPON THE CONTENTS OF THESE DRAWINGS BY ANY THIRD PARTY.

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ISSUES:				
Issue	Date	Description	Drawn	Checked
A	9.01.2013	Prelim Draft	TC	RM

Date: 16/07/2013
 Scale: 1:10,000 @ A3
 Data Information:
 Universal Transverse Mercator
 GDA 1994 MGA Zone 55
 Client: Adani Mining Pty Ltd
 Project: Carmichael Coal Rail Project
 Address/RPD: Isaac Regional Council
 Source: DCBD (DNRM, 2012), Aerial (Google, 2012)
 RE & HVR (EHP, 2013)

Plan 2

SHG File
 6550 E 02 Borrow 7 Quarry NCA B



3.3. Location 3 – Disney Quarry (Lot 4 on SPII6046)

Photos: Profile of Potential Clearing Area



Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)

Str.	Rel. Dom.	Scientific Name	Common Name	Conservation Status (NCA)	EPBCA Status	Number/Area
T1	D/CD/A	<i>Corymbia clarksoniana</i>	Clarkson's Bloodwood	Least Concern	Not Listed	3374
	CD/A	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	Least Concern	Not Listed	2331
	D/A	<i>Eucalyptus brownii</i>	Reid's River Box	Least Concern	Not Listed	2278
	A	<i>Corymbia erythrophloia</i>	Variable-barked Bloodwood	Least Concern	Not Listed	1133
	A	<i>Corymbia dallachiana</i>	Ghost Gum	Least Concern	Not Listed	155
T2	D	<i>Melaleuca nervosa</i>	Paperbark	Least Concern	Not Listed	7970
	CD/A	<i>Corymbia clarksoniana</i>	Clarkson's Bloodwood	Least Concern	Not Listed	2496
	A	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	Least Concern	Not Listed	2486
	A	<i>Corymbia dallachiana</i>	Ghost Gum	Least Concern	Not Listed	1512
	A	<i>Alphitonia excelsa</i>	Red Ash	Least Concern	Not Listed	1133
	A	<i>Pogonolobus reticulatus</i>		Least Concern	Not Listed	1133
	CD	<i>Terminalia oblongata</i>	Yellowwood	Least Concern	Not Listed	502
	A	<i>Cassia brewsteri</i>	Leichhardt Bean	Least Concern	Not Listed	386
	A	<i>Acacia salicina</i>	Sally Wattle	Least Concern	Not Listed	126
	A	<i>Atalaya hemiglauca</i>	Whitewood	Least Concern	Not Listed	126
	A	<i>Eucalyptus brownii</i>	Reid's River Box	Least Concern	Not Listed	126



Str.	Rel. Dom.	Scientific Name	Common Name	Conservation Status (NCA)	EPBCA Status	Number/Area
	A	<i>Archidendropsis basaltica</i>	Dead Finish	Least Concern	Not Listed	21
Shrub	D	<i>Dodonaea filifolia</i>	Hop Bush	Least Concern	Not Listed	19923
	A	<i>Acacia decora</i>	Showy Wattle	Least Concern	Not Listed	12665
	CD	<i>Melaleuca nervosa</i>	Paperbark	Least Concern	Not Listed	11215
	A	<i>Hovea longipes</i>	Hovea	Least Concern	Not Listed	6505
	A	<i>Pogonolobus reticulatus</i>		Least Concern	Not Listed	4066
	CD	<i>Corymbia clarksoniana</i>	Clarkson's Bloodwood	Least Concern	Not Listed	4057
	D	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	2425
	A	<i>Citrus glauca</i>	Desert Lime	Least Concern	Not Listed	1376
	A	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	970
	A	<i>Atalaya hemiglauca</i>	Whitewood	Least Concern	Not Listed	970
	A	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	970
	A	<i>Terminalia oblongata</i>	Yellowwood	Least Concern	Not Listed	880
	A	<i>Erythroxylum australe</i>	Dogwood	Least Concern	Not Listed	811
	A	<i>Alphitonia excelsa</i>	Red Ash	Least Concern	Not Listed	567
	A	<i>Breynia oblongifolia</i>	Coffee Bush	Least Concern	Not Listed	567
	A	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	485
	A	<i>Corymbia dallachiana</i>	Ghost Gum	Least Concern	Not Listed	402
	A	<i>Enchylaena tomentosa</i>	Ruby Saltbush	Least Concern	Not Listed	243
	A	<i>Cassia brewsteri</i>	Leichardt Bean	Least Concern	Not Listed	167
	A	<i>Grewia retusifolia</i>	Dogs Balls	Least Concern	Not Listed	134
	A	<i>Acacia salicina</i>	Sally Wattle	Least Concern	Not Listed	126
	A	<i>Lysiphyllum carronii</i>	Red Bauhinia	Least Concern	Not Listed	126
	A	<i>Grevillea decora</i>	Grevillea	Least Concern	Not Listed	58
	A	<i>Planchonia careya</i>	Cocky Apple	Least Concern	Not Listed	7
Ground	D	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	144765 m ²
	A	<i>Heteropogon contortus</i>	Black Spear-grass	Least Concern	Not Listed	60322 m ²
	A	<i>Triodia mitchellii</i>	Buck Spinifex	Least Concern	Not Listed	25621 m ²
	A	<i>Panicum decompositum</i>	Native Millet	Least Concern	Not Listed	13613 m ²
	A	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	5250 m ²



Str.	Rel. Dom.	Scientific Name	Common Name	Conservation Status (NCA)	EPBCA Status	Number/Area
	A	<i>Themeda triandra</i>	Kangaroo Grass	Least Concern	Not Listed	5205 m ²
	A	<i>Sporobolus caroli</i>	Fairy Grass	Least Concern	Not Listed	2081 m ²
	A	<i>Chrysocephalum apiculatum</i>	Yellow Buttons	Least Concern	Not Listed	1334 m ²
	A	<i>Sida cordifolia</i>	Flannel Weed	Least Concern	Not Listed	1332 m ²
	A	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	750 m ²
	A	<i>Arundinella nepalensis</i>	Reed Grass	Least Concern	Not Listed	582 m ²
	A	<i>Calotis cuneata</i>	Blue-burr Daisy	Least Concern	Not Listed	232 m ²

NB: Relative dominance is as per vegetation type (see plan)



Vegetation Type Descriptions

Vegetation Type 1

Current quarry site devoid of native vegetation

Vegetation Type 2

Sparse T1 layer of *Corymbia clarksoniana* and *Eucalyptus crebra* with a T2 layer dominated by *Melaleuca nervosa* with *Corymbia dallachiana*, *Corymbia clarksoniana* and *Eucalyptus crebra* over a shrub layer of co-dominant *Corymbia clarksoniana* and *Melaleuca nervosa* with *Erythroxylum australe* and a ground layer of native *Aristida latifolia*, *Panicum decompositum* and exotic *Pennisetum ciliare*

Vegetation Type 3

T1 layer dominated by *Eucalyptus crebra* with associated *Acacia cambagei* and *Corymbia clarksoniana* with a T2 layer of juvenile T1's plus *Alphitonia excelsa* over a shrub layer of mixed natives (e.g. *Grevillea decora*, *Dodonaea filifolia*, *Erythroxylum australe*) and a ground layer of exotic *Pennisetum ciliare* with natives such as *Aristida latifolia*, *Triodia mitchellii* and *Heteropogon contortus*.

Vegetation Type 4

Very sparse T1 layer dominated by *Corymbia clarksoniana* with *Eucalyptus crebra* and a T2 layer of co-dominant *Corymbia clarksoniana* and *Terminalia oblongata* over sparse juvenile *Terminalia oblongata* shrubs and a ground layer of native *Aristida latifolia*, *Triodia mitchellii* and *Heteropogon contortus* with exotic *Pennisetum ciliare*

Vegetation Type 5

T1 layer dominated by *Eucalyptus brownii* with *Corymbia clarksoniana* and *Eucalyptus crebra* and a T2 layer of *Cassia brewsteri*, *Corymbia dallachiana* and *Eucalyptus crebra* over a shrub layer of juvenile *Corymbia dallachiana* and *Grewia retusifolia* with a ground layer of *Aristida latifolia*, *Heteropogon contortus* and *Chrysocephalum apiculatum* and exotic *Pennisetum ciliare*

Vegetation Type 6

T1 layer of co-dominant *Corymbia clarksoniana* and *Eucalyptus crebra* with *Corymbia erythrophloia* and a T2 layer of *Corymbia clarksoniana*, *Eucalyptus crebra*, *Alphitonia excelsa* and *Pogonolobus reticulans* over a shrub layer of *Dodonaea filifolia*, *Hovea longipes*, *Alphitonia excelsa*, *Acacia decora*, *Citrus glauca* and *Breynia oblongifolia* with an exotic ground layer



Vegetation Type 7

Relatively sparse T1 layer of co-dominant *Corymbia clarksoniana* and *Eucalyptus crebra* with *Corymbia erythrophloia* and a sparse T2 layer of *Corymbia clarksoniana*, *Eucalyptus crebra*, *Alphitonia excelsa* and *Pogonolobus reticulans* over a sparse shrub layer of *Alphitonia excelsa*, *Acacia decora*, *Citrus glauca* and *Breynia oblongifolia* with an exotic ground layer

Vegetation Type 8

Sparse T1 layer dominated by *Eucalyptus brownii* with *Corymbia clarksoniana* and *Corymbia dallachiana*, and *Archidendropsis basaltica* in the T2 layer over a sparse shrub layer of *Cassia brewsteri* and *Planchonia careya* with a ground layer dominated by exotics (e.g. *Pennisetum ciliare*) and a mix of native species

Vegetation Type 9

Cleared and heavily grazed non-remnant area with a very sparse shrub layer dominated by *Carissa ovata* and ground layer dominated by exotic *Pennisetum ciliare*. Other introduced species include *Parthenium hysterophorus*, *Chloris inflata* and *Melinis repens*

RE 11.5.3 – Least Concern

Description

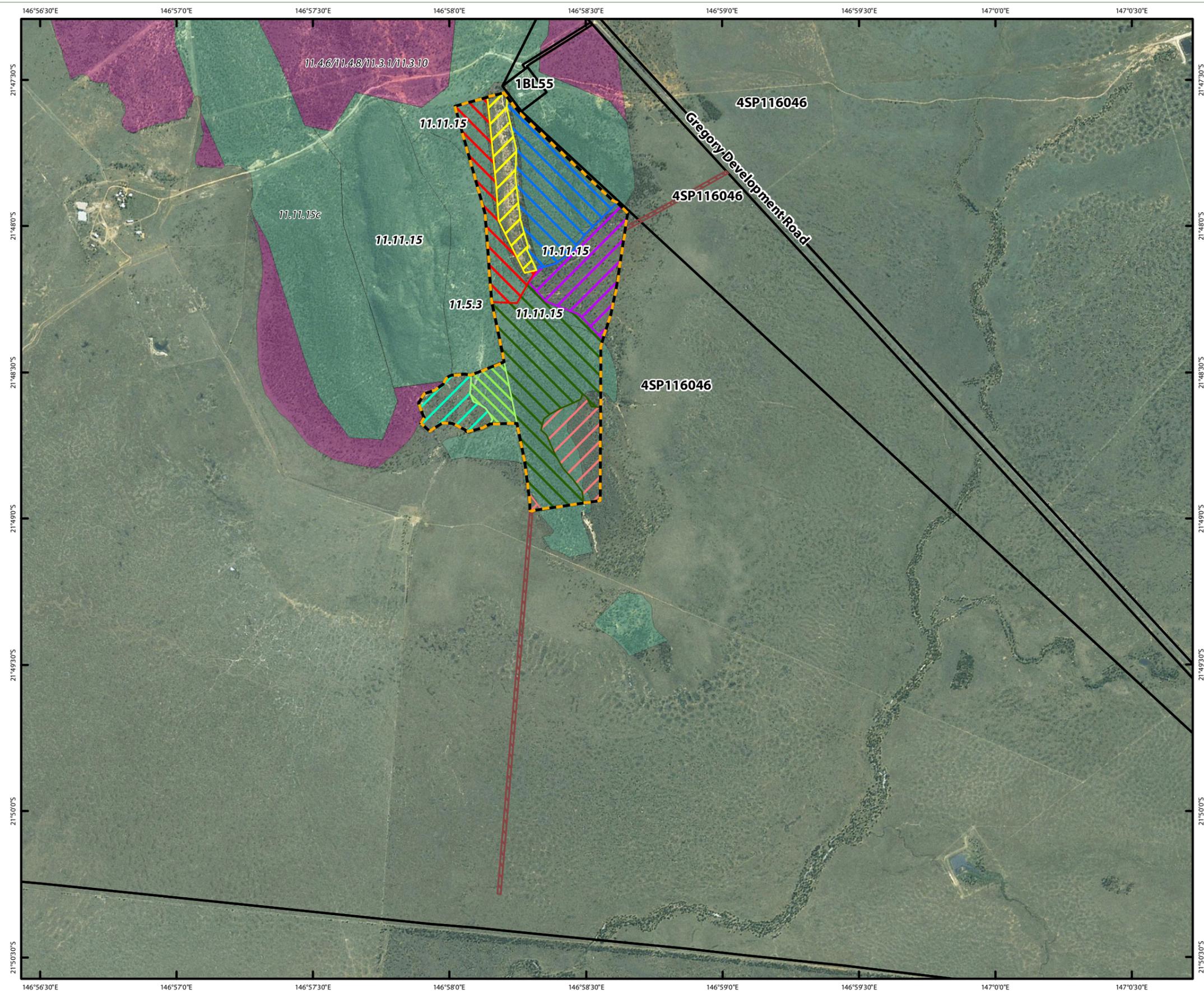
Eucalyptus populnea +/- *E. melanophloia* +/- *Corymbia clarksoniana* +/- *C. dallachiana* and occasionally *E. cambageana* or *E. brownii* dominate the tree layer (14 m median height and 11-15 m range) woodland. Localised areas may be dominated by *E. melanophloia*, occasionally *E. crebra* and other canopy species. There is generally a distinctive low tree layer (8, 6-11 m high) dominated by species such as *Eremophila mitchellii*, *Geijera parviflora*, *Archidendropsis basaltica*, *Erythroxylum australe*, *Cassia brewsteri*, *Ventilago viminalis* and occasionally *Allocasuarina luehmannii* or *Callitris glaucophylla*. A low shrub layer (2-6 m high) dominated by species such as *Carissa ovata*, *Erythroxylum australe*, *Capparis lasiantha* is also often present. Occurs on flat to gently undulating plains formed from Cainozoic sediments. Associated soils are generally deep texture contrast with thick sandy surface horizons with some deep red earths. (BVG1M: 17a). Major vegetation communities include: 11.5.3a: *E. melanophloia* +/- *Corymbia clarksoniana* +/- *C. dallachiana* dominate the tree layer (14 m median height and 11-15m range) woodland. There is generally a low tree layer (8, 6-11 m high) present. (BVG1M: 17b). 11.5.3b: Palustrine wetland (e.g. vegetated swamp). *Eucalyptus populnea* on closed depressions Occurs on closed depressions in sandplains. (BVG1M: 17a).



RE 11.11.15 – Least Concern

Description

Eucalyptus crebra +/- *Corymbia erythrophloia* +/- *E. populnea* +/- *E. melanophloia* +/- *C. tessellaris* +/- *C. clarksoniana* woodland often with a shrubby layer. *Eucalyptus exserta* and *E. platyphylla* present in central coastal part of bioregion. Occurs on undulating rises and low hills, often with distinct strike pattern formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics and Permian sediments. (BVG1M: 13c). Major vegetation communities include: 11.11.15a: *Eucalyptus crebra*, *E. exserta* woodland. (BVG1M: 13c). 11.11.15b: *Eucalyptus drepanophylla* and/or *E. platyphylla* woodland +/- vine thicket species. (BVG1M: 13c). 11.11.15c: Woodland with *Corymbia setosa* present to dominant, usually with *Corymbia clarksoniana*, *Eucalyptus melanophloia*, *Corymbia dallachiana* and *Eucalyptus crebra*, with occasional shrubs of *Petalostigma pubescens* and *Alphitonia excelsa*. (BVG1M: 13c). 11.11.15d: Woodland with *Corymbia setosa* present to dominant, usually with *Corymbia clarksoniana*, *Eucalyptus melanophloia*, *Corymbia dallachiana* and *Eucalyptus crebra*, with occasional shrubs of *Petalostigma pubescens* and *Alphitonia excelsa*. Occurs on low rises and short hills derived from Devonian-Carboniferous sediments (mainly conglomerates in Beresford Stn). Associated soils are hard gravelly to stony, (BVG1M: 13c).



- Legend**
- DCDB
 - Quarry disturbance extent
 - Disturbance Area (188 ha)**
 - Vegetation Type 1 (14 ha)
 - Vegetation Type 2 (22.3 ha)
 - Vegetation Type 3 (34.6 ha)
 - Vegetation Type 4 (25.1 ha)
 - Vegetation Type 5 (10.5 ha)
 - Vegetation Type 6 (53.3 ha)
 - Vegetation Type 7 (14.4 ha)
 - Vegetation Type 8 (7.5 ha)
 - Vegetation Type 9 (6.3 ha)
 - Proposed PMAV REs**
 - Remnant vegetation containing Endangered REs
 - Remnant vegetation containing Of Concern REs
 - Remnant vegetation that is a Least Concern RE (91.8 ha to clear)



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adani

ISSUES:

Issue	Date	Description	Drawn	Checked
A	9.04.2013	Prelim Draft	TC	RM

APPROVED COMPANY

ISO 9001
Quality Management Systems

QMS

APPROVED COMPANY

ISO 14001
Environmental Management Systems

QMS

Carmichael Coal Rail Project

Disney Quarry - NCA1992 Clearing Permit Plan

Date | 16/07/2013
 Scale | 1:25,000 @ A3
 Data Information:
 Universal Transverse Mercator
 GDA 1994 MGA Zone 55
 Client | Adani Mining Pty Ltd
 Project | Carmichael Coal Rail Project
 Address/RPD | Isaac Regional Council
 Source | DCBD (DNRM, 2012), Aerial (Google, 2012)
 RE & HVR (EHP, 2013)

Plan 3

SHG File
6550 E 03 Disney Quarry NCA B



3.4. Location 4 – Back Creek South Quarry (Lot 656 on SPI38788)

Photos: Profile of Potential Clearing Area



Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)

Str.	Rel. Dom.	Scientific Name	Common Name	Conservation Status (NCA)	EPBCA Status	Number/Area
T1	D/A	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	Least Concern	Not Listed	915
	A	<i>Corymbia dallachiana</i>	Ghost Gum	Least Concern	Not Listed	384
T2	A	<i>Flindersia dissosperma</i>	Scrub Leopardwood	Least Concern	Not Listed	147
Shrub	A	<i>Carissa ovata</i>	Currant bush	Least Concern	Not Listed	3167
	D	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	2043
	A	<i>Acacia excelsa</i>	Ironwood	Least Concern	Not Listed	1987
	CD	<i>Acacia cambagei</i>	Stinking Wattle	Least Concern	Not Listed	1752
	A	<i>Terminalia oblongata</i>	Yellowwood	Least Concern	Not Listed	1752
	A	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	1460
	A	<i>Grewia retusifolia</i>	Dog's Balls	Least Concern	Not Listed	1438
	A	<i>Corymbia dallachiana</i>	Ghost Gum	Least Concern	Not Listed	1324
	A	<i>Acacia excelsa</i>	Ironwood	Least Concern	Not Listed	1177
	A	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	764
	A	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	Least Concern	Not Listed	292
	A	<i>Ventilago viminalis</i>	Vine Tree	Least Concern	Not Listed	180



Str.	Rel. Dom.	Scientific Name	Common Name	Conservation Status (NCA)	EPBCA Status	Number/Area
Ground	A	<i>Heteropogon contortus</i>	Black Spear Grass	Least Concern	Not Listed	122630 m ²
	A	<i>Arundinella nepalensis</i>	Reed Grass	Least Concern	Not Listed	62370 m ²
	A	<i>Enneapogon nigricans</i>	Bottle Washers	Least Concern	Not Listed	21600 m ²

NB: Relative dominance is as per vegetation type (see plan)

Vegetation Type Descriptions

Vegetation Type 1

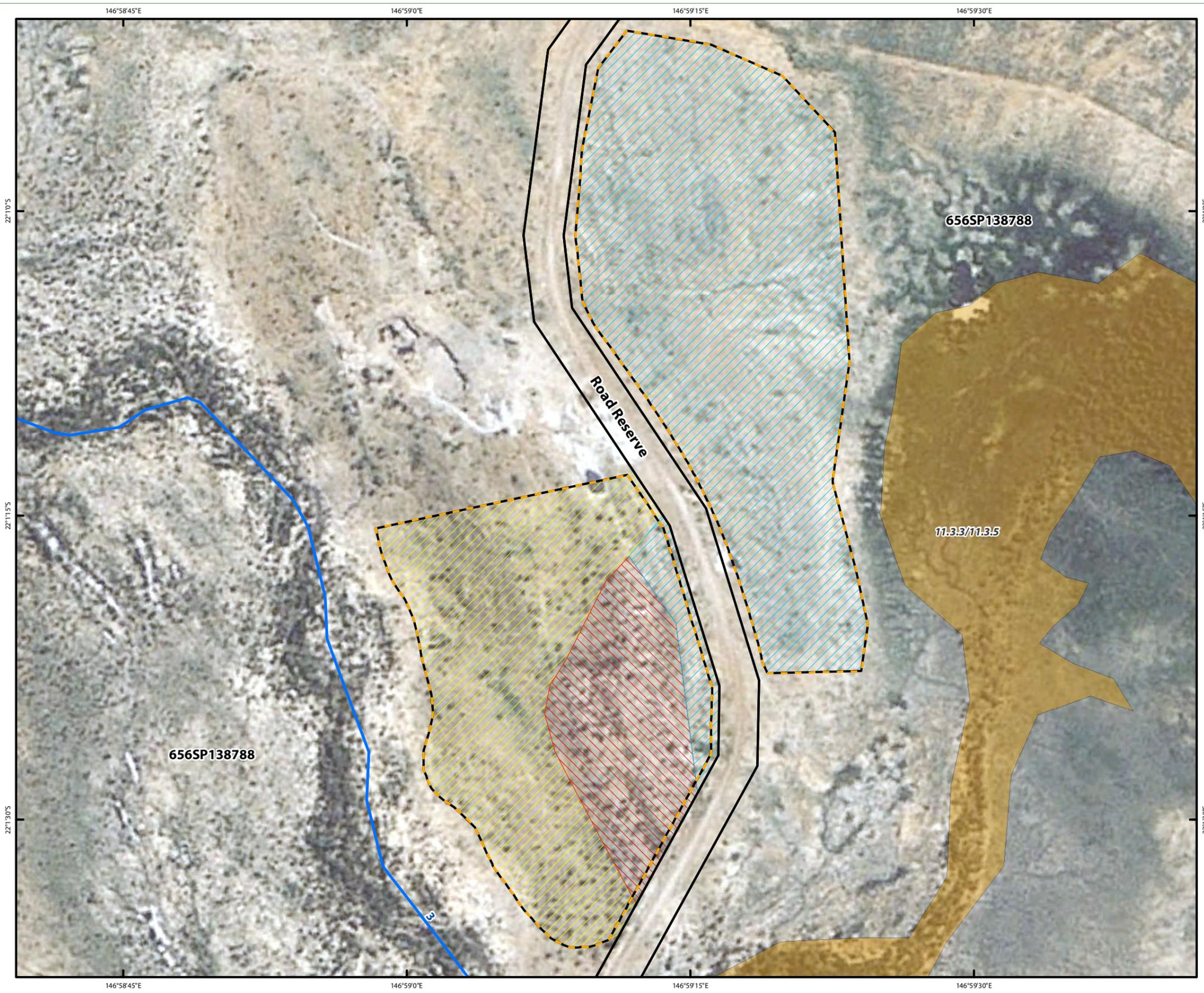
Very sparse T1 layer dominated by *Eucalyptus crebra* with *Corymbia dallachiana* and a few specimens of *Flindersia dissosperma* in the T2 layer over a very sparse shrub layer of *Acacia excelsa* and juvenile *Corymbia dallachiana* with a ground layer of exotic *Pennisetum ciliare* and native *Heteropogon contortus* and *Arundinella nepalensis*

Vegetation Type 2

The T1 layer is of a greater canopy density than Type 1 vegetation structure and dominated by *Eucalyptus crebra* with scattered *Corymbia dallachiana*. The shrub layer is spare and includes species dominated by *Acacia excelsa* and *Ventilago viminalis* with an exotic ground layer

Vegetation Type 3

The T1 and T2 layers have been mostly cleared with the shrub layer dominated by regrowth *Acacia* species and the ground layer mostly exotics. Native species are consistent with pre-clear vegetation layers



Legend

- Watercourse
- DCDB
- Disturbance Area
 - Vegetation Type 1 (14.7 ha)
 - Vegetation Type 2 (9.0 ha)
 - Vegetation Type 3 (29.2 ha)
 - Quarry disturbance extent
- Regional Ecosystem v6.1
 - Remnant vegetation containing Endangered REs
 - Remnant vegetation containing Of Concern REs
 - Remnant vegetation that is a Least Concern RE



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Carmichael Coal Rail Project

Back Creek South Quarry - NCA 1992 Clearing Permit Plan

Date | 16/07/2013
 Scale | 1:6,000 @ A3
 Data Information:
 Universal Transverse Mercator
 GDA 1994 MGA Zone 56
 Client | Adani Mining Pty Ltd
 Project | Carmichael Coal Rail Project
 Address/RPD | Isaac Regional Council
 Source | DCBD (DNRM, 2012), Aerial (Google, 2012)
 RE & HVR (EHP, 2013)

Plan 4

SHG File
 6550 E 04 Back Creek South Quarry NCA B