



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 4331/1
Permit Holder:	BHP Billiton Worsley Alumina Pty Ltd
Duration of Permit:	25 July 2011 – 25 July 2016

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of infrastructure maintenance of the Overland Bauxite Conveyor.

2. Land on which clearing is to be done

Lot 5336 on Deposited Plan 51832
Lot 5417 on Deposited Plan 216087
Lot 2 on Diagram 62300
Lot 1 on Plan 13454, Upper Murray

3. Area of Clearing

The Permit Holder must not clear more than 2.71 hectares of native vegetation within the area hatched yellow on attached Plan 4331/1.

4. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

5. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for activities to the extent that the Permit Holder has the power to clear native vegetation for those activities under the *Land Administration Act 1997* or any other written law.

6. Compliance with Assessment Sequence and Management Procedures

Prior to clearing any native vegetation under conditions 1, 2 and 3 of this Permit, the Permit Holder must comply with the Assessment Sequence and the Management Procedures set out in Part II of this Permit.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

7. Avoid, minimise etc clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- avoid the clearing of native vegetation;
- minimise the amount of native vegetation to be cleared; and
- reduce the impact of clearing on any environmental value.

8. Fauna management

- (a) Prior to undertaking any clearing authorised under this Permit, the area(s) shall be inspected by a *fauna specialist* who shall:
- (i) identify *habitat trees* suitable to be utilised by Baudins black cockatoo (*Calyptorhynchus baudinii*) and Red-tailed black cockatoo (*Calyptorhynchus banksii naso*); and
 - (ii) inspect *habitat trees* identified under condition 8(a)(i) for the presence of Baudins black cockatoo (*Calyptorhynchus baudinii*) and Red-tailed black cockatoo (*Calyptorhynchus banksii naso*).
- (b) Where *habitat trees* identified under condition 8(a) contain hollows suitable for use by Baudins black cockatoo (*Calyptorhynchus baudinii*) and Red-tailed black cockatoo (*Calyptorhynchus banksii naso*); the Permit Holder shall retain these *habitat trees* in situ, or if this is not possible the Permit Holder shall construct and install 2 artificial nesting hollows, per each habitat tree removed, as follows:
- (i) each artificial nesting hollow shall be constructed using PVC pipe 0.3m in diameter, 25mm thickness and 1m in length;
 - (ii) each artificial nesting hollow shall include an external perch constructed of wood, and an internal ladder constructed of 50mm galvanised mesh affixed to the wall, to enable access;
 - (iii) each artificial nesting hollow shall have a free-draining floor constructed of galvanised woven wire mesh and lined with weathered woodchips to a depth of 20cm;
 - (iv) each artificial nesting hollow shall be attached to a tree located within 1km of the area to be cleared;
 - (v) each artificial nesting hollow shall be attached to a tree that must have a diameter, at 1.5 metres above the ground, of at least 300 millimetres;
 - (vi) each artificial nesting hollow shall be attached to a tree at a height of no less than 3 metres above the ground, and no closer than 20 metres from any other tree to which a constructed artificial nesting hollow is attached; and
 - (vii) each artificial nesting hollow shall be attached to a tree in an inconspicuous position with the entrance hole facing away from the prevailing winds and rain, and protected from direct sunlight.
- (c) Where *habitat trees* identified under condition 1(a) contain hollows suitable for use by Carnaby's black cockatoo (*Calyptorhynchus latirostris*) Baudin's black cockatoo (*Calyptorhynchus baudinii*) and Red-tailed black cockatoo (*Calyptorhynchus banksii naso*), the Permit Holder shall retain these *habitat trees* in situ, or if this is not possible the Permit Holder shall:
- (i) remove and retain intact hollows;
 - (ii) each removed and retained intact hollow shall be attached to a tree located within no more than 2km from any clearing authorised under this Permit;
 - (iii) each removed and retained intact hollow shall be attached to a tree within one month of removing it; and
- (d) Within one week prior to undertaking any clearing authorised under this Permit, the Permit Holder shall engage a *fauna clearing person* to remove and relocate fauna identified under condition 1(a)(ii).

PART III - RECORD KEEPING AND REPORTING

9. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
- (i) the species composition, structure and density of the cleared area;
 - (ii) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (iii) the date that the area was cleared; and
 - (iv) the size of the area cleared (in hectares).
- (b) In relation to fauna management pursuant to condition 8 of this Permit:

- (i) the location of each tree that contains hollows, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
- (ii) the species name of fauna reasonably likely to utilise, or that have been observed utilising, the trees that contain hollows;
- (iii) the location of surrogate trees for relocation with vacant hollows, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees; and
- (iv) the location and date where relocated fauna was released, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees.

10. Reporting

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
 - (i) of records required under condition 9 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 July and 30 June of the preceding year.

- (b) Prior to 25 April 2016, the Permit Holder must provide to the CEO a written report of records required under condition 9 of this Permit where these records have not already been provided under condition 10(a) of this Permit.

Definitions

The following meanings are given to terms used in this Permit:

fauna clearing person means a person who has obtained a licence from the Department, issued pursuant to the *Wildlife Conservation Regulations 1970* authorising them to take fauna;

fauna specialist means a person with training and specific work experience in fauna identification or faunal assemblage surveys of Western Australian fauna; and

habitat tree(s) means trees that have a diameter, at average adult human chest height, of greater than 70cm, healthy but with dead limbs and broken crowns that are likely to contain hollows and roosts suitable for native fauna, or where these are not present then healthy but with the potential to contain hollows and roosts.



Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

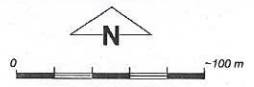
29 June 2011

Plan 4331/1



LEGEND

- Clearing Instruments**
- Areas Approved to Clear
 - Road Centrelines
 - Recently added (cont)
- Coverage**
- Dwellingup 50cm Orthomosaic - Landgate 2006
- Image Index**
- >



Scale 1:3869
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

[Signature] Date 29/6/11
K Faulkner

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



Department of Environment and Conservation

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1. Application details

1.1. Permit application details

Permit application No.: 4331/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: BHP Billiton Worsley Alumina Pty Ltd

1.3. Property details

Property: LOT 3609 ON PLAN 143447 (UPPER MURRAY 6390)
LOT 2 ON DIAGRAM 62300 (UPPER MURRAY 6390)
LOT 1 ON PLAN 13454 (UPPER MURRAY 6390)
LOT 5417 ON PLAN 216087 (UPPER MURRAY 6390)
STATE FOREST 15 (HARRIS RIVER 6225)

Local Government Area: Shire of Boddington

Colloquial name: Alumina Refinery (Worsley) Agreement Act 1973, Lease 3116/8513, CL19/1986, Lot 5336 on Deposited Plan 51832

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2.71		Mechanical Removal	Mineral Production

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 29 June 2011

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Beard Vegetation Association: 3 Medium forest; jarrah-marri	The proposal is to clear 2.71 ha for the purpose of infrastructure maintenance of the overland bauxite conveyor.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	Vegetation description was obtained through aerial imagery (Dwellingup 50cm Orthomosaic - Landgate 2006) and consultant's report (Mattiske Consulting, 2010).
Mattiske Vegetation Complex: (Murray 2) Open forest of Eucalyptus marginata subsp. thalassica-Corymbia calophylla-Eucalyptus patens and woodland of Eucalyptus wandoo with some Eucalyptus accedens on valley slopes to woodland of Eucalyptus rudis-Melaleuca raphiophylla on the valley floors in semiarid and arid zones.	The area under application exist within Littleton's Cut, where 61 vascular plant taxa have been identified, 4 being non native (Mattiske Consulting, 2010).	To	
	The vegetation under application comprises Open Woodland (Eucalyptus wandoo, Eucalyptus marginata) to Open Forest (Eucalyptus marginata, Corymbia calophylla, Allocasuarina fraseriana) and is considered to be in a very good to completely degraded (Keighery, 1994) condition (Mattiske Consulting, 2010).	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	
	A survey of the area under application identified the condition of the vegetation within the clearing footprint as 0.78 ha in a very good condition, 0.38 ha good condition and 1.55 ha as completely degraded (Mattiske Consulting, 2010)		

3. Assessment of application against clearing principles

Comments

The proposed clearing area is 2.71 hectares for the purpose of infrastructure maintenance of the overland bauxite conveyor located within the Dwellingup State Forest, 3.6km east of Lane Pool Reserve. The area under application is known as the Littleton's Cut area, five recorded vegetation types are known to exist in this area, only three are within the clearing footprint (Mattiske Consulting, 2010). The vegetation within the footprint is described as Open Woodlands of Eucalyptus wandoo; Open Forest of Eucalyptus marginata, Corymbia calophylla; and Open Forest of Eucalyptus marginata, Corymbia calophylla with admixtures of Allocasuarina fraseriana (Mattiske Consulting, 2010). The vegetation within the local area and footprint is also described as Beard vegetation association 3 and Mattiske vegetation complex Murray 2. Both Beard and Mattiske vegetation complexes identified within application area are well represented in the region.

A survey in September 2010 of the Littleton's Cut area identified 61 recorded vascular plant taxa, 4 of which were non native (Mattiske Consulting 2010). Out of the plant taxa recorded 55 of them are within the clearing footprint including the 4 non native species. No plant taxa listed as priority flora species or declared rare flora species have been recorded within the Littleton's Cut area (Mattiske Consulting, 2010), with the nearest known flora species *Byblis gigantea* (conservation code 3P) known to exist 1.5km north west of the clearing footprint. No known threatened ecological communities (TEC's) have been recorded within a 10km radius of the application area.

Within the local area (10km radius) four fauna species have been recorded as rare or likely to become extinct, including *Calyptorhynchus banksii* (Forest Red-tailed black cockatoo) and *Calyptorhynchus Baudins* (Baudin's black cockatoo). DEC considers the vegetation within the clearing footprint is suitable for Baudin's and Forest Red-tailed black cockatoo. Such vegetation as *Eucalyptus wandoo* *Eucalyptus marginata* and *Corymbia calophylla* are important for nesting purposes.

The development of nesting hollows is a dynamic process therefore existing nesting hollows are seen as important as well as the maintenance of healthy trees to allow for the development of future hollows. Clearing and subsequent land degradation has eliminated most of the breeding habitat for black cockatoos. These birds require old trees with large hollows in which to nest, which may take many decades for trees planted now to become suitable. Competition for nesting hollows by increasing numbers of galahs, western corellas and non native honey bees is significant (Burbridge 2004).

The area under application is in a public drinking water source area classified as the Murray River Water Reserve, this area is not allocated. Due to the linear shape and approximately 1.5 ha of the clearing footprint considered to be in a completely degraded condition (Mattiske Consulting, 2010) the proposed clearing is not likely to affect the Murray River Water Reserve catchment.

Given the above the proposed clearing may be at variance to clearing principle (b) and is not likely to be at variance to the remaining clearing principles.

Methodology

Burbridge (2004)
DEC (2007)
Keighery (1994)
Mattiske Consulting (2010)
Mattiske and Havel (1998)
Shepherd (2009)

GIS database:

- Dwellingup 50cm Orthomosaic - Landgate 2006
- Public Drinking Water Source Area - Accessed 12/5/2011
- Pre European Vegetation
- SAC Bio Datasets - Accessed 12/5/11

Planning instrument, Native Title, Previous EPA decision or other matter.

Comments

The land is zoned Rural under the Shire of Boddington Local Planning Scheme No 2

The proposed clearing falls within the Gnaala Karla Booja people native title claimants' area, who are represented by the South West Aboriginal Land and Sea Council. The native title claimants and the representatives were notified and comments were sought regarding the proposed clearing but no response has been received by DEC to date.

Lot 5336 on Plan 51832 is within the Dwellingup state Forest, BHP Billiton Worsley Alumina hold a lease over this property.

Methodology

GIS database:
- DEC Tenure - Accessed 12/5/2011
- Native Title Claims - Accessed 12/5/2011
- Town Planning Scheme Zone - Accessed 12/5/2011

4. References

- Burbidge, A. (2004) Threatened Animals of Western Australia, Department of Conservation and Land Management, Perth, Western Australia.
- DEC (2007 -) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: <http://naturemap.dec.wa.gov.au/>. Accessed 12/05/2011
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mattiske Consulting Pty Ltd (2010) Flora and Vegetation Survey of the Littleton's Cut Area. Prepared for BHP Billiton Worsley Alumina Pty Ltd. DEC Ref A398776
- Mattiske, E.M. and Havel, J.J. (1998) Vegetation Complexes of the South-west Forest Region of Western Australia. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment Australia.
- Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.

5. Glossary

Term	Meaning
BCS	Biodiversity Coordination Section of DEC
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment
DoIR	Department of Industry and Resources
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DEC)