



## CLEARING PERMIT

*Granted under section 51E of the Environmental Protection Act 1986*

<b>Purpose Permit number:</b>	CPS 4364/1
<b>Permit Holder:</b>	Alcoa of Australia
<b>Duration of Permit:</b>	1 August 2011 – 1 August 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 constructing a residue storage area and run-off catchment pond.

**2. Land on which clearing is to be done**

Lot 205 on Deposited Plan 34250

**3. Area of Clearing**

The Permit Holder must not clear more than 32.2 hectares of native vegetation within the area hatched yellow on attached Plan 4364/1.

**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:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) 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 Carnaby's black cockatoo (*Calyptorhynchus latirostris*) 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 Carnaby's black cockatoo (*Calyptorhynchus latirostris*) 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 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 10 km 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
  
- (c) 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 8(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 1 May 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 50cm, 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.



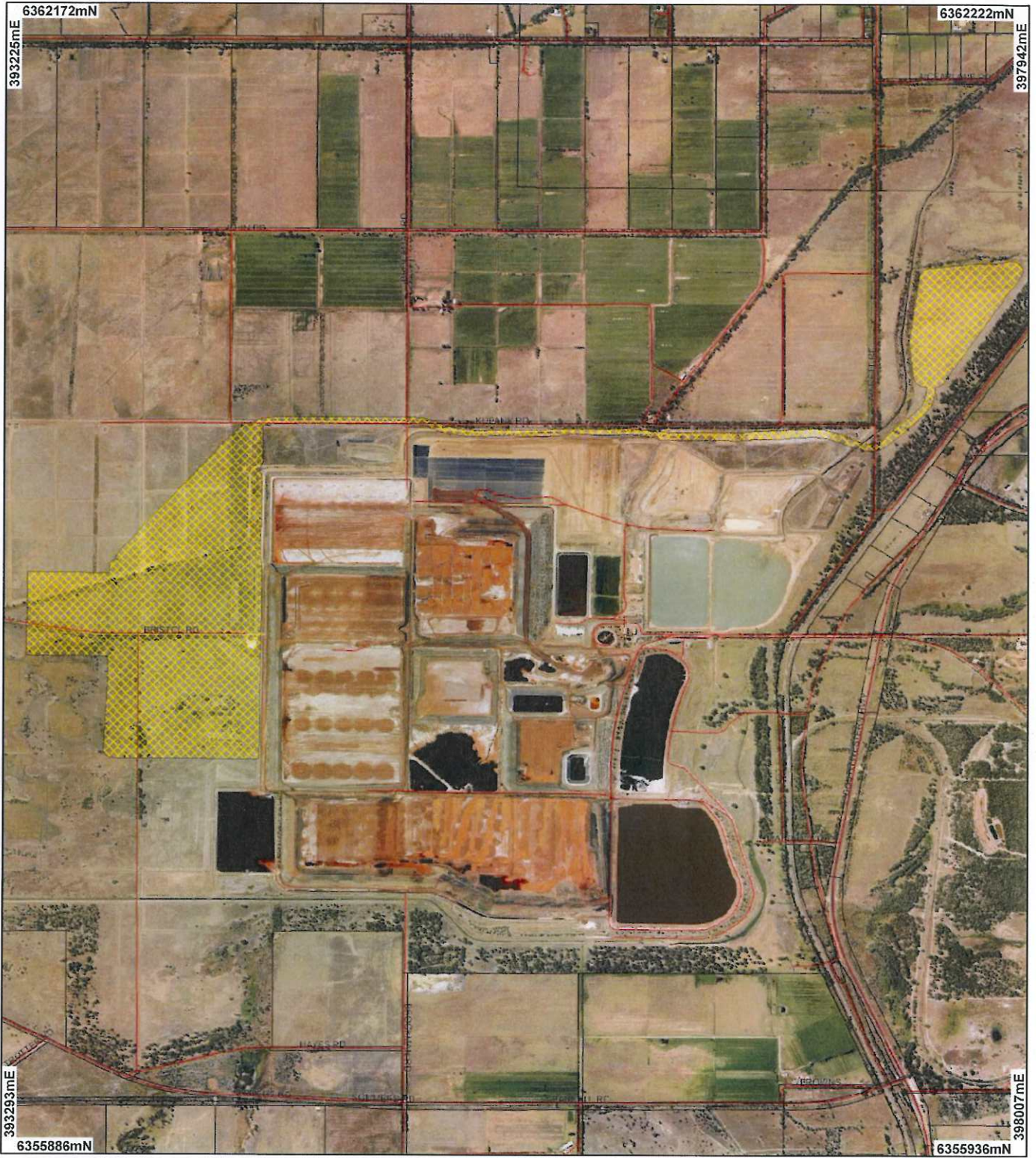
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Kelly Faulkner  
MANAGER  
NATIVE VEGETATION CONSERVATION BRANCH

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

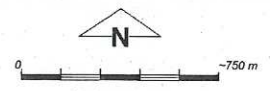
7 July 2011

# Plan 4364/1



## LEGEND

- |  |  |
|--|--|
| <p><b>Clearing Instruments</b></p> <ul style="list-style-type: none"> <li> Areas Approved to Clear</li> <li> Road Centrelines</li> <li> Cadastre</li> <li> -&gt; Image Index (cont)</li> </ul> | <ul style="list-style-type: none"> <li> Recently added</li> <li> Coverage</li> <li><b>Pinjarra 50cm Orthomosaic - Landgate 2006</b></li> </ul> |
|--|--|



Scale 1:27783  
(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.

Date 2/12/11  
K Faulkner

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



\*Project Data. This data has not been quality assured. Please contact map author for details.



## 1. Application details

### 1.1. Permit application details

Permit application No.: 4364/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Alcoa of Australia Limited

### 1.3. Property details

Property: LOT 205 ON PLAN 34250 (House No. 205 SOMERS WAGERUP 6215)  
Local Government Area: Shire of Waroona

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
32.2		Mechanical Removal	Miscellaneous

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 7 July 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 Type 968: Medium woodland; jarrah, marri & wandoo	The proposal is to clear native vegetation within a 32.2 hectare area, for the purpose to construct a residue storage area and run-off catchment pond.	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	The condition and the description of the vegetation under application has been established through a site visit conducted by DEC officers on the 10 June 2011 (DEC, 2011).
Heddle Vegetation Complex: SERPENTINE RIVER COMPLEX : Closed scrub of Melaleuca species and fringing woodland of Eucalyptus rudis (Flooded Gum) - Melaleuca raphiophylla (Swamp Paperbark) along streams.	The vegetation under application is sparse across the proposed clearing, majority of this is Juncus pallidus and is considered to be in a completely degraded condition (Keighery, 1994)		
GUILDFORD COMPLEX : A mixture of open forest to tall open forest of Corymbia calophylla (Marri) - Eucalyptus wandoo (Wandoo) - Eucalyptus marginata (Jarrah) and woodland of Eucalyptus wandoo (Wandoo) (with rare occurrences of Eucalyptus lane-poolei (Salmon White Gum)). Minor components include Eucalyptus rudis (Flooded Gum) - Melaleuca raphiophylla (Swamp Paperbark).			
As above	The western point of the area of the proposed clearing consists of small clumps of Melaleuca trees,	Degraded: Structure severely disturbed; regeneration to good condition requires	As above

there is no understory or ground cover (DEC, 2011), it is considered to be in a completely degraded condition (Keighery, 1994).

intensive management (Keighery 1994)

As above

A small area (0.01ha) at the eastern point of the proposed clearing contains *Kingia australis* and *Xanthorrhoea preissii*, it is considered to be in a good condition (Keighery, 1994).

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)

As above

### 3. Assessment of application against clearing principles

#### (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

##### Comments **Proposal is not likely to be at variance to this Principle**

The applicant proposes to clear native vegetation on lot 205 within an area of 32.2ha, enabling them to construct a new residue storage area and run-off catchment pond at the Wagerup Alumina Refinery.

The area under application consists of scattered rushes of *Juncus pallidus* with small pockets of mature *Melaleuca* trees over pasture weeds in a degraded to completely degraded condition (Keighery, 1994). A small area to the east of the proposed clearing consists of *Kingia australis* and *Xanthorrhoea preissii*, this area would be less than 0.01ha of the application area (DEC, 2011), the area is considered to be in a good (Keighery, 1994) condition (DEC 2011).

Given the large proportion of the application area to be in a degraded to completely degraded condition, it is not considered for the proposed clearing to be at variance to this clearing principle.

**Methodology** -DEC (2011)  
-Keighery (1994)

GIS Databases  
-SAC Bio datasets accesst 1/6/11

#### (b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

##### Comments **Proposal may be at variance to this Principle**

Within the local area (10km radius) eight fauna species listed as rare or likely to become extinct have been recorded; These included the *Calyptorhynchus banksii* (Forest red-tailed black cockatoo), *Calyptorhynchus baudinii* (Baudin's black cockatoo) and *Calyptorhynchus latirostris* (Carnaby's black cockatoo). A recent site inspection of the area under application found three potential habitat trees (*Corymbia calophylla*) for black cockatoo species, these trees were located at the eastern point of the proposed clearing (DEC 2011).

The development of nesting hollows is a dynamic process and so the existing nesting hollows are 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).

All three species of black cockatoo species recorded in the area require large hollows for nesting purposes. A recent site visit conducted by DEC identified three Marri trees that are suitable for black cockatoo species to nest, with one marri containing a large hollow. The application and surrounding area is considered to have less than 30% of native vegetation remaining in 10km radius. Therefore, it is considered that any nesting habitat trees for black cockatoo species in the area may provide significant habitat for these species. To mitigate the potential loss of habitat trees for black cockatoo species, artificial nesting boxes should be constructed and relocated in a similar vegetation habitat area.

Given the above, this principle may be at variance.

**Methodology** -Burbridge (2004)  
-DEC (2007)  
-DEC (2011)

GIS Databases  
-NatureMap

**(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.**

**Comments Proposal is not likely to be at variance to this Principle**

There are 2 recorded species of rare flora known within a 10km radius of the proposed clearing, *Synaphea stenoloba* and *Tetraria australiensis*. These two species are known to exist south to south east at approximately 3.5km away from the clearing.

Given that majority of the area under application is considered to be in a completely degraded (Keighery, 1994) condition (DEC 2011) and the distance of the known rare flora from the proposed clearing, it is not likely to be at variance to this principle.

**Methodology** -DEC (2011)  
- Keighery (1994)

GIS Databases  
-SAC Bio datasets accesst 1/6/11

**(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.**

**Comments Proposal is not likely to be at variance to this Principle**

There are a number of threatened ecological communities (TEC's) that existed within a 10km radius of the area under application, with the closest located approximately 3.4km south of the proposed clearing. None of the area under application existed within any of the TEC's buffer zones, however there are two TEC's considered to share the same vegetation complex and soil type with that of the clearing footprint. The TEC's are known as Swan Coastal Plain 3a (*Eucalypt calophylla* - *Kingia australis* woodlands on heavy soils) approximately 7.7km north away from the clearing footprint and Swan Coastal Plain 3c (*Eucalypt calophylla* - *Xanthorrhoea preissii* woodlands and shrublands) approximately 4.4km south of the proposed clearing footprint. From a recent site inspection and supporting documentation supplied by applicant identified a small section of vegetation in good condition containing *Kingia australis* and *Xanthorrhoea preissii* proposed to be cleared.

Given the distance of TEC's Swan Coastal Plain 3a and 3c along with the small size of similar vegetation identified within the clearing footprint it is not considered that removal of this vegetation to have any significant impacts on biodiversity within the region.

**Methodology** -DEC (2011)  
-Keighery (1994)

GIS Databases  
-SAC Bio datasets - accesst 1/6/11

**(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.**

**Comments Proposal is not likely to be at variance to this Principle**

The vegetation under application is described as Beard vegetation association 968 (Shepherd, 2009), Heddle Serpentine River Complex and Heddle Guilford Complex (Shepherd, 2007). The three vegetation complexes recorded all fall below the national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia 2001).

The area under application contained *Melaleuca* species and Marri (*Corymbia calophylla*) similar to that known to exist within the Heddle Serpentine river and Guilford vegetation complexes, with 9% and 5% of pre-European extent remaining, respectively (Shepherd, 2007).

Given the small amount of *Melaleuca* and Marri species recorded within the proposed clearing along with the condition considered to be in a degraded to completely degraded (Keighery, 1994), it is unlikely that the loss of this vegetation within the clearing footprint will further accelerate the demise of the vegetation complexes and their functionality known to exist within the area.

Pre-European	Current Extent (ha)	Remaining Extent in DEC Managed Lands (ha)	(%)	(%)
IBRA Bioregion*				
Swan Coastal Plain	1 501 209	587 889	39	33
Shire*				
Shire of Waroona	83 231	45 822	55	78

Beard Vegetation Association in Bioregion*					
968	136 188	9 849	7	15	
Hedde Vegetation Complex					
Serpentine River Complex	19 855	1 727	9	1.5	
Guilford Complex	92 462	4 863	5	0.29	

**Methodology** -Commonwealth of Western Australia (2001)  
 -Keighery (1994)  
 -Shepherd (2009)  
 -Shepherd (2007)

GIS Databases  
 -Pre-European Vegetation

**(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.**

**Comments Proposal is at variance to this Principle**

The area under application is within an EPP wetland (also classified as multiple use) and contains a watercourse known as the Samson drain, both contain wetland dependant vegetation (*Melaleuca raphiophylla*). A recent site visit showed the presence of *Melaleuca raphiophylla* with a ground cover of pasture weeds (DEC, 2011).

Given the above, this principle is at variance.

It is noted that the *Melaleuca raphiophylla* recorded within the mapped EPP wetland and Samson drain is considered to be in degraded (Keighery, 1994) condition (DEC 2011).

**Methodology** -DEC (2011)  
 -Keighery (1994)

GIS Databases  
 -Hydrography, linear  
 -EPP Wetlands

**(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.**

**Comments Proposal is not likely to be at variance to this Principle**

The soils within the area under application are considered as; Low-lying drained flats with some gilgais, chief soils are black and grey cracking clays and plain chief soils are sandy acidic yellow mottled soils, some of which may contain ironstone gravel (Northcote, 1960-68). There is medium to low risk of increased salinity within the application area.

Due to the vegetation being sparse throughout the proposed clearing and majority of its condition to be completely degraded (Keighery, 1994), it is unlikely that the removal of this vegetation will increase water logging or wind and water erosion to the local area.

Given the above, this principle is not likely to be at variance.

**Methodology** -DEC (2011)  
 -Northcote, (1960-68)  
 GIS Databases  
 -Soils, statewide

**(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.**

**Comments Proposal is not likely to be at variance to this Principle**

There are two known conservation areas within a 10km radius of the area under application. These comprise of the Buller Nature Reserve approximately 2.2km west of the application area and the Hamel State Forest approximately 1.7km north away for the application area. Given the distance of the conservation areas from the application area and that there are no ecological linkages to the clearing footprint, it is unlikely that the two known conservation areas will be impacted upon by the proposed clearing.

**Methodology** GIS Databases  
 -DEC Tenure



**(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.**

**Comments Proposal is not likely to be at variance to this Principle**

An EPP wetland and drain (Samson) was mapped in the western point of the proposed clearing. This area contains Melaleuca and Juncus pallidus vegetation amongst a dense groundcover of pasture weeds (DEC, 2011). The vegetation within these areas is considered to be in a degraded to completely degraded (Keighery, 1994) condition (DEC 2011).

Given the condition of the vegetation, it is unlikely the removal of this vegetation to significantly alter the groundwater and surface water within and around the proposed clearing.

Given the above, this principle is not likely to be at variance

**Methodology** GIS Databases  
-EPP Wetlands  
-Hydrography, linear

**(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.**

**Comments Proposal is not likely to be at variance to this Principle**

There is an EPP wetland situated at the western point of the proposed clearing, the wetland is classified as multi use. The vegetation within the wetland is considered to be in a degraded condition (Keighery, 1994). Given the condition of the vegetation within this area, increase flooding is unlikely to occur.

The Samson drain will be interfered with by the proposed clearing thus increasing the chance of flooding to the area, however impacts are likely to be short term as the drain will only be impacted upon during the construction phase of the residue storage area (Alcoa of Australia, 2011)

The proposed clearing is not likely to be at variance to this principle

**Methodology** Alcoa of Australia (2011)  
  
GIS Databases  
-EPP Wetlands  
-Hydrography, linear

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

**Comments**

The applicant will require a Bed and Banks Permit for the drain occurring within the application area.

The area under application is zoned Special Industry under the Shire of Waroona Town Planning Scheme and is zoned Industrial under the Peel Regional Scheme.

A works approval is currently being sought from Department of Environment and Conservation.

**Methodology** GIS Database  
-Cadastre Boundaries  
-Town planning  
-Riwi Act

**4. References**

- Alcoa of Australia (2011). Clearing Permit Application. Construction of a new residue area and catchment run-off pond. (DEC Ref Doc A395643)
- Burbidge, A. (2004) Threatened Animals of Western Australia, Department of Conservation and Land Management, Perth, Western Australia.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- DEC (2007 - ) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: <http://naturemap.dec.wa.gov.au/>. Accessed 1/6/2011
- DEC (2011) Site Inspection Report for Clearing Permit Application CPS 4364/1, Lot 205, Wagerup. Site inspection undertaken 10/06/2011. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC A407848).
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-

68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.

Shepherd, D.P. (2007) 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.

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)