



## 1. Application details

### 1.1. Permit application details

Permit application No.: 2602/1  
 Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: BHP Billiton Nickel West Pty Ltd

### 1.3. Property details

Property: LOT 100 ON PLAN 212288 ( FEYSVILLE 6431)  
 LOT 100 ON PLAN 212288 ( FEYSVILLE 6431)  
 Local Government Area: City Of Kalgoorlie-Boulder  
 Colloquial name:

### 1.4. Application

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

## 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 Unit:	Proposal is to clear 15 hectares of native vegetation within a 590ha area in the City of Kalgoorlie-Boulder for the purpose of expanding the Kalgoorlie Nickel Smelter.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Vegetation condition determined by aerial mapping (Kalgoorlie 1.4m Orthomosaic DLI 02)
9 - Medium woodland; coral gum (Eucalyptus torquata) & goldfields blackbutt (E. le soufii)			
936 - Medium woodland; salmon gum	Condition of the vegetation ranges from areas that are very good to degraded with condition decreasing with closer proximity to areas previously cleared.		
1294 - Medium woodland; coral gum			

(Shepherd, 2006; Hopkins et al., 2001)

## 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 proposal is for the clearing of 15ha of native vegetation, in degraded to very good (Keighery, 1994) condition, within a 590ha area near the Kalgoorlie Nickel Smelter for the purpose of smelter expansion activities.

The vegetation under application is well represented statewide and the local area (10k m radius) remains approximately 75% vegetated.

There are no rare floras or Threatened Ecological Communities (TECs) recorded within the local area (10km radius) however a desktop assessment identified four priority flora species recorded within the local area, two of which may occur within the application area.

Given that the local area is well vegetated and in similar or better condition as the area under application, the clearing as proposed is not likely to be at variance to this principle.

Methodology References:  
 Keighery (1994)

GIS Database:  
Kalgoorlie 1.4m Orthomosaic Landgate 2002  
Pre European Vegetation - DA 01/01  
SAC Biodatasets - accessed 19 August 08

**(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 is not likely to be at variance to this Principle**

The area under application is not likely to be significant habitat for fauna indigenous to Western Australia as the local area is well vegetated with much of the vegetation being in similar or better (Keighery, 1994) condition as the applied area.

There are two species of conservation significance within the local area (10km radius), namely *Ogyris subterrestris petrina* and *Jalmenus aridus* (both caterpillars), neither of which are likely to occur within the applied area (Braby, 2000; DEC, 2008)

As the area under application is not likely to be significant as habitat for fauna indigenous to Western Australia, the clearing as proposed is not likely to be at variance to this principle.

**Methodology** References:  
Braby (2000)  
DEC (2008)

GIS Database:  
Kalgoorlie 1.4m Orthomosaic Landgate 2002  
Pre European Vegetation - DA 01/01  
SAC Biodatasets - accessed 19 August 08

**(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 no rare floras recorded within the local area (10km radius) of the application area.

Therefore the clearing as proposed is not likely to be at variance to this principle.

**Methodology** GIS Database:  
SAC Biodatasets - accessed 19 August 08

**(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 no Threatened Ecological Communities (TECs) recorded within the local area (10km radius).

Therefore the clearing as proposed is not likely to be at variance to this principle.

**Methodology** GIS Database:  
SAC Biodatasets - accessed 19 August 08

**(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 mapped as Beard vegetation units:  
9; Medium woodland; coral gum (*Eucalyptus torquata*) & goldfields blackbutt (*E. le soufii*)  
936; Medium woodland; salmon gum, and  
1294; Medium woodland; coral gum (Shepherd, 2006).

Of these vegetation units the applied area is approximately 85% unit 9, 10% unit 1294 and 5% unit 936.

All of these mapped vegetation units are well represented throughout the state with 99.7 % (unit 9), 110% (unit 1294) and 96.7% (unit 936) of the pre-European extent remaining (Shepherd, 2006; Hopkins et al., 2001)

The local area (10 km radius) is approximately 75% vegetated (aerial mapping).

Therefore the clearing as proposed is not likely to be at variance to this principle as the vegetation proposed to be



cleared is not a remnant in an extensively cleared landscape.

**Methodology** References:  
Hokpins et al. (2001)  
Shepherd (2006)

GIS Database:  
Kalgoorlie 1.4m Orthomosaic Landgate 2002  
Pre European Vegetation - DA 01/01  
SAC Biodatasets - accessed 19 August 08

**(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**

There are three minor non perennial watercourses within the application area (eastern boundary) as well as an area subject to inundation in the north west corner of the applied area.

The application area also includes four earth dams, two of which surround perennial lakes.

As some of the vegetation under application includes vegetation associated with a watercourse or area of inundation the clearing as proposed is at variance to this principle.

Watercourse buffer conditions will be placed on the permit to prevent clearing of vegetation growing in, or in association with a watercourse or area subject to inundation.

**Methodology** GIS Database:  
Hydrography linear - DOW 13/7/06  
Kalgoorlie 1.4m Orthomosaic Landgate 2002  
Pre European Vegetation - DA 01/01

**(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 of the application area are mapped as shallow calcareous loamy soils and alkaline red earths with limestone at shallow depths (Northcote et al., 2001)

As the clearing as proposed is within a low rainfall area (300mm average annually) and relatively high evapotranspiration area (300mm average annually) and given the soils types under application are not prone to erosion the clearing as proposed is not likely to be at variance with this clearing principle.

**Methodology** References:  
Northcote et al. (2001)

GIS Database:  
Evapotranspiration Isopleths WRC 29/09/98  
Groundwater Salinity Statewide DoW 13/07/06  
Hydrography linear DOW 13/7/06  
Mean Annual Rainfall Isohytes (1975 to 2003) DEC 02/08/05  
Kalgoorlie 1.4m Orthomosaic Landgate 2002  
Pre European Vegetation DA 01/01  
Soils, Statewide DA 11/99

**(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 is one Department of Environment and Conservation (DEC) managed land within the local area (10km radius), namely Lakeside Timber Reserve (approximately 7km north east).

Given the distance between the applied area and this conservation area, the clearing as proposed is not likely to be at variance to this principle.

**Methodology** GIS Database:  
CALM Managed Lands and Waters CALM 01/06/05

**(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 may be at variance to this Principle**

The area under application includes parts of 3 minor perennial watercourses (eastern side of applied area) and one area subject to inundation (north west of applied area).

Clearing of vegetation within or in close proximity to these surface water expressions may result in deterioration in the quality of surface water within the applied area.

Therefore the clearing as proposed may be at variance to this principle.

Watercourse buffer conditions will be placed on the permit to mitigate possible impacts on surface water quality.

**Methodology** GIS Database:  
Hydrography linear DOW 13/7/06  
Kalgoorlie 1.4m Orthomosaic Landgate 2002

**(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**

The clearing as proposed is within a low average annual rainfall area (300mm) and the local area is highly vegetated (approximately 75% vegetation cover).

Therefore the clearing as proposed is not likely to cause or exacerbate the incidence or intensity of flooding and is not likely to be at variance to this principle.

**Methodology** GIS Database:  
Mean Annual Rainfall Isohytes (1975 to 2003) DEC 02/08/05  
Kalgoorlie 1.4m Orthomosaic Landgate 2002

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

**Comments**

Kalgoorlie Nickel Smelter is managed under EP Act licence 6598/1973/13. (DOC62907)

Expansion of the molten slag dump does not require works approval as previously advised by DEC Goldfields Region (for CPS 1035/1). (DOC62907)

**Methodology** GIS Database:

#### 4. Assessor's comments

**Comment**

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s510 of the Environmental Protection Act 1986, and the proposed clearing is at variance with principle (f), may be at variance with principles (i), is not likely to be at variance to principles (a), (b), (c), (d) (e), (g), (h) and (j).

#### 5. References

- Braby, M. F., (2000) Butterflies of Australia, CSIRO Publishing, Melbourne 2000, vol. 2, pp. 716-717.
- Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALMScience after J. S. Beard, late 1960's to early 1980's Vegetation Survey of Western Australia, UWA Press.
- 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 (2008) Flora and Vegetation Survey of the Furnace Rebuild Project Area, prepared for BHP Billiton, May 2008 by Mattiske Consulting Pty Ltd KNS0801/048/08
- 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. (2006). 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. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.

## 6. 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)

