



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3140/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Barrick (PD) Australia Limited

1.3. Property details

Property: Mining Lease 24/462
Local Government Area: City of Kalgoorlie-Boulder
Colloquial name: Crossroads Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
115.1		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
<p>The vegetation of the application area is broadly mapped as Beard Vegetation Association 20: low woodland; mulga with <i>Allocasuarina cristata</i> & <i>Eucalyptus sp.</i> (GIS Database).</p> <p>Botanica Consulting (2008) describe the vegetation of the application area as:</p> <ol style="list-style-type: none"> <i>Eucalyptus lesouefii</i> open woodland; <i>Eucalyptus celastroides ssp. celastroides</i> woodland; and <i>Acacia acuminata</i> thicket. 	<p>Barrick (PD) Australia Limited (Barrick) have applied for an area permit to clear up to 115.1 hectares of native vegetation. The proposed clearing is for the purposes of constructing a new mine site consisting of two waste rock dumps, a mine pit, stockpiles, RoM pad and a turkeys nest (Barrick, 2009).</p>	<p>Very Good: vegetation structure altered; obvious signs of disturbance (Keighery, 1994).</p>	<p>The vegetation condition was derived from a description by Botanica Consulting (2008). Vegetation was altered due to obvious signs of disturbance such as historic tracks and grazing (Botanica Consulting, 2008).</p>

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 application area is located within the East Murchison subregion of the of the Murchison Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). Cowan (2001) describes the vegetation of the East Murchison subregion as mulga woodlands often rich in ephemerals; hummock grassland, saltbush shrublands and halosarcia shrublands.

Three vegetation associations were identified within the application area, containing a total of 40 flora species from 21 genera. Vegetation association 1; *Eucalyptus lesouefii* open woodland, contained a total of 29 flora species; vegetation association 2; *Eucalyptus celastroides ssp. celastroides* woodland, contained a total of 24 flora species; and vegetation association 3; *Acacia acuminata* thicket, contained a total of 12 flora species (Botanica Consulting, 2009). Given that only three vegetation associations occur within the application area containing a total of 40 flora species the assessing officer does not consider this to be a high level of floristic diversity.

Botanica Consulting (2008) state that the flora of the application area is not restricted and similar floristic compositions occur throughout the Murchison and Coolgardie bioregions. None of the vegetation associations have regional environmental significance as defined by the *Environment Protection and Biodiversity and Conservation Act 1999* (Botanica Consulting, 2008).

There were no Threatened Ecological Communities or Priority Ecological Communities identified within the application area (Botanica Consulting, 2008; GIS Database).

There was no Declared Rare Flora (DRF) species listed in the *Wildlife Conservation (Rare Flora) Notice 2008*, or Priority Flora species listed with the Department of Environment and Conservation (DEC) identified within the application area (Botanica Consulting, 2008).

The condition of the vegetation in the application area was recorded as “very good”, depicting that the vegetation was altered due to obvious signs of disturbance. The disturbance was in the form of historic exploration drilling and vehicle tracks (Botanica Consulting, 2008).

No flora species listed as Declared weeds under the *Agriculture and Related Resources Protection Act 1976* or any other general environmental weeds were recorded during the Botanica Consulting (2008) flora survey. Should a clearing permit be granted, it is recommended that appropriate conditions be imposed to minimise the risk of clearing operations spreading or introducing weeds to non-infested areas.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Botanica Consulting (2008)
Cowan (2001)
GIS Database:
- Interim Biogeographic Regionalisation of Australia
- Interim Biogeographic Regionalisation of Australia – subregions
- Threatened Ecological Communities

(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

Keith Lindbeck and Associates (2009) conducted a Level 1 fauna survey over the application area. A recommendation from this fauna survey was that a targeted Malleefowl survey be conducted over the application area (Keith Lindbeck and Associates, 2009).

Malleefowl (*Leipoa ocellata*) are listed as Schedule 1 - fauna that is rare or likely to become extinct, *Wildlife Conservation (Specially Protected Fauna) Notice, 2008*. Given their scarcity, vegetation which provides habitat for this species may be considered as significant.

A targeted Malleefowl search was conducted on 8 June 2009, over approximately 258 hectares within and surrounding the application area (Botanica Consulting, 2009). No Malleefowl sightings or nesting areas were identified within the application area (Botanica Consulting, 2009). Botanica Consulting (2009) have stated that 94% of the application area comprises of open eucalypt woodland which is not considered favourable habitat for Malleefowl.

Keith Lindbeck and Associates (2009) determined that the fauna habitats within the application area are well represented in the local and regional landscape. Clearing associated with this proposal will result in some habitat loss for fauna, including fauna of conservation significance, but no fauna species are likely to be specifically reliant on the vegetation of the application area (Keith Lindbeck and Associates, 2009).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Botanica Consulting (2009)
Keith Lindbeck and Associates (2009)

(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

A search of the Department of Environmental and Conservation's (DEC's) Rare and Priority Flora Database revealed no records of Declared Rare Flora in proximity to the application area (Botanica Consulting, 2008). The search revealed one Priority 1 Flora taxa (*Eremophila praecox*) that was recorded within 20 kilometres of the application area.

Botanica Consulting (2008) conducted a flora and vegetation survey over the application area. No Declared Rare Flora (DRF) pursuant to the *Wildlife Conservation (Rare Flora) Notice 2008*, or Priority Flora listed with the DEC was identified in the application area.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Botanica Consulting (2008)

(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

According to available databases there are no Threatened Ecological Communities (TEC's) within the application area (GIS Database). The nearest known TEC's are located approximately 160 kilometres to the south-east of the application area (GIS Database).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology GIS Database:
- Threatened Ecological Communities

(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 at variance to this Principle

The application area is located within the Murchison Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). Shepherd (2007) report that approximately 100% of the pre-European vegetation still exists in the Murchison Bioregion. The vegetation in the application area is broadly mapped as Beard Vegetation Association 20: low woodland; mulga with *Allocasuarina cristata* & *Eucalyptus sp.* (GIS Database). According to Shepherd (2007) there is approximately 100% of this vegetation type remaining.

Although several large scale mining operations are located within a 50 kilometre radius of the application area (GIS Database), on a broader scale the Murchison bioregion has not been extensively cleared. Hence the application area is not considered to represent a significant remnant of native vegetation in an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA bioregion – Murchison	28,120,558	28,120,558	~100	Least Concern	1.1
Beard Veg Assoc. – State					
20	1,295,105	1,295,105	~100	Least Concern	13.3
Beard Veg Assoc. – bioregion					
20	1,174,262	1,174,262	~100	Least Concern	8.9

* Shepherd (2007)

** Department of Natural Resources and Environment (2002)

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology Department of Natural Resources and Environment (2002)
Shepherd (2007)
GIS Database:
- Interim Biogeographic Regionalisation of Australia
- 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 not at variance to this Principle

There are no watercourses, wetlands or ephemeral drainage lines within the application area (GIS Database). None of the vegetation associations identified within the application area are associated with watercourses or wetlands (Botanica Consulting, 2008).

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology Botanica Consulting (2008)
GIS Database

- Hydrology, linear

(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

There are no watercourses or wetlands within the application area (GIS Database), therefore, it is unlikely the area will be subject to water erosion.

The proposed clearing is for mining purposes and includes an open pit, waste rock stockpile and RoM pad (Barrick, 2009). Therefore, most of the clearing will not be susceptible to wind erosion. Should a clearing permit be granted it is recommended that conditions be placed on the permit for the purpose of retention of topsoil and vegetative material. It is also recommended that a staged clearing condition be placed on the permit to ensure that no areas are left open for long periods.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Barrick (2009)
GIS Database
- Hydrology, linear

(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 no conservation areas within or in the vicinity of the application area. The nearest Department of Environmental and Conservation managed land is the Kurrawang Nature Reserve approximately 27 kilometres south-west of the application area (GIS Database). Given the distance between the proposed clearing and the nature reserve, it is unlikely the proposed clearing will impact on the environmental values of this nature reserve.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology GIS Database:
- CALM Managed Lands and Waters

(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

The application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database).

The area receives an average rainfall of approximately 300 millimetres per year (GIS Database) and experiences a pan evaporation rate of approximately 3600 millimetres per year (GIS database). Therefore, there is likely to be little surface water flow during normal seasonal rains. Sedimentation or turbidity of waterbodies is not likely as there are no permanent water bodies within the application area or its vicinity (GIS Database).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology GIS Database
- Hydrography, linear
- Mean Annual Rainfall Isohyets
- Public Drinking Water Source Area

(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 proposed clearing is unlikely to cause, or exacerbate, the incidence or intensity of flooding for the following reasons:

- low annual rainfall of approximately 300 millimetres rainfall per year (GIS Database);
- high evaporation rates of approximately 3600 millimetres rainfall per year (GIS Database);
- gently undulating topography; and
- lack of standing waterbodies or watercourses (GIS database)

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology GIS database
- Hydrography, linear
- Topographic Contours, Statewide

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments

The clearing permit application was advertised on 1 June 2009 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim over the application area. This claim (WC98-027) has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenement has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (ie. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

According to available databases there are no Aboriginal Sites of Significance within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment and Conservation and the Department of Water, to determine whether a Works Approval, Water Licence, Bed and Banks permit, or any other licences or approvals are required for the proposed works.

Methodology GIS Databases:
- Aboriginal Sites of Significance
- Native Title Claims

4. Assessor's comments

Comment

The proposal has been assessed against the Clearing Principles, and is not likely to be at variance to Principles (a), (b), (c), (d), (g), (h), (i) and (j), and is not at variance to Principles (e) and (f).

Should the permit be granted, it is recommended that conditions be imposed on the permit for the purposes of staged clearing, weed management, retention of topsoil and vegetative material, record keeping and permit reporting.

5. References

- Barrick (2009) Supporting documentation for clearing permit application CPS 3140/1.
- Botanica Consulting (2008) Flora and Vegetation Survey of the Cross Roads Area, Unpublished report for Barrick Kanowna, Boulder, Western Australia.
- Cowan M. (2001) Murchison 1 (MUR1 – East Murchison subregion) in "A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions".
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Keith Lindbeck and Associates (2009) Barrick Konowna Crossroads Project Level 1 Fauna Survey, Bullcreek, Western Australia.
- 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. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.

6. Glossary

Acronyms:

BoM Bureau of Meteorology, Australian Government.
CALM Department of Conservation and Land Management, Western Australia.
DAFWA Department of Agriculture and Food, Western Australia.
DA Department of Agriculture, Western Australia.

DEC	Department of Environment and Conservation
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DoE), Western Australia.
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia.
DMP	Department of Mines and Petroleum, Western Australia.
DoE	Department of Environment, Western Australia.
DoIR	Department of Industry and Resources, Western Australia.
DOLA	Department of Land Administration, Western Australia.
DoW	Department of Water
EP Act	Environment Protection Act 1986, Western Australia.
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System.
IBRA	Interim Biogeographic Regionalisation for Australia.
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
RIWI	Rights in Water and Irrigation Act 1914, Western Australia.
s.17	Section 17 of the Environment Protection Act 1986, Western Australia.
TECs	Threatened Ecological Communities.

Definitions:

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005. Department of Conservation and Land Management, Como, Western Australia* } :-

- P1** **Priority One - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P2** **Priority Two - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P3** **Priority Three - Poorly Known taxa:** taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
- P4** **Priority Four – Rare taxa:** taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
- R** **Declared Rare Flora – Extant taxa (= Threatened Flora = Endangered + Vulnerable):** taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
- X** **Declared Rare Flora - Presumed Extinct taxa:** taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

- Schedule 1** **Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
- Schedule 2** **Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3** **Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
- Schedule 4** **Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). *Priority Codes for Fauna. Department of Conservation and Land Management, Como, Western Australia* } :-

- P1** **Priority One: Taxa with few, poorly known populations on threatened lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2** **Priority Two: Taxa with few, poorly known populations on conservation lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest,

vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

- P3** **Priority Three: Taxa with several, poorly known populations, some on conservation lands:** Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P4** **Priority Four: Taxa in need of monitoring:** Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
- P5** **Priority Five: Taxa in need of monitoring:** Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of threatened species (*Environment Protection and Biodiversity Conservation Act 1999*)

- EX** **Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.
- EX(W)** **Extinct in the wild:** A native species which:
(a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
(b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- CR** **Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
- EN** **Endangered:** A native species which:
(a) is not critically endangered; and
(b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- VU** **Vulnerable:** A native species which:
(a) is not critically endangered or endangered; and
(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
- CD** **Conservation Dependent:** A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.