



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5411/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Kimberley Quarry Pty Ltd

1.3. Property details

Property: Mining Lease 04/69
Local Government Area: Shire of Broome
Colloquial name: Nillibubbica Quarry Operations

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 14 March 2013

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>Beard vegetation associations have been mapped for the whole of Western Australia. Two Beard vegetation associations have been mapped within the application area:</p> <p>750: Shrublands, pindan; <i>Acacia tumida</i> shrubland with grey box and cabbage gum medium woodland over ribbon grass and curly spinifex; and</p> <p>751: Shrublands, pindan; <i>Acacia eriopoda</i> and <i>Acacia tumida</i> shrubland with scattered low <i>Eucalyptus confertifolia</i> over curly spinifex (GIS Database).</p> <p>A Level 1 flora survey was conducted by a botanist from Astron Environmental Services (Astron) in July 2012 over the application area and an adjacent area. Three vegetation associations were recorded during the survey and two of these were mapped within the application area (Astron, 2012).</p> <p>Sandstone Outcrops - <i>Corymbia dendromerinx</i> low woodland over <i>Terminalia canescens</i> low open woodland over <i>Acacia monticola</i>, <i>Grevillea refracta</i> and <i>Grevillea pyramidalis</i> subsp. <i>pyramidalis</i> tall open shrubland over <i>Triodia schinzii</i> open hummock grassland.</p> <p>Pindan Plain Open - <i>Corymbia polycarpa</i> low woodland over <i>Acacia tumida</i> var. <i>tumida</i>, <i>Acacia platycarpa</i> and <i>Erythrophleum chlorostachys</i> low woodland over <i>Chrysopogon pallidus</i>, <i>Eriachne obtusa</i> and <i>Sorghum stipoideum</i> tussock grassland to closed tussock grassland.</p>	<p>Kimberley Quarry Pty Ltd has applied to clear up to 10 hectares for the purpose of mineral production. The clearing is to establish a quarry pit to expand the Nillibubbica Quarry operations. The application area is located approximately 75 kilometres south-west of Derby.</p> <p>Vegetation will be cleared by bulldozers.</p>	<p>Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994);</p> <p>To:</p> <p>Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).</p>	<p>The vegetation condition was assessed by a botanist from Astron (2012).</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 within the Pindarland subregion of the Dampierland Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Pindarland subregion comprises of sandplains of the Dampier Peninsular and western part of Dampier Land, including the hinterland of the Eighty Mile Beach (CALM, 2002). It is a fine textured sand sheet with subdued dunes and includes the paleodelta of the Fitzroy River (CALM, 2002). The vegetation is described as pindan. This is the coastal, semi-arid, north-western margin of the Canning Basin (CALM, 2002).

A botanist from Astron conducted a flora survey over the application area and an adjacent area in July 2012. A total of 72 native vascular flora species, representing 61 genera from 32 families, were recorded during the survey (Astron, 2012). The most speciose families were Fabaceae, Poaceae and Malvaceae which is consistent with other surveys in the Dampierland bioregion (Astron, 2012). Two vegetation associations were mapped within the application area, sandstone outcrops and Pindan Plain open, and both of these are typical of Dampierland vegetation (Astron, 2012).

No Threatened Flora, Priority Flora, Threatened Ecological Communities or Priority Ecological Communities were recorded during the flora survey or have previously been recorded within the application area (Astron, 2012; GIS Database).

No introduced flora species were identified during the Astron (2012) survey. Care must be taken to ensure that the proposed clearing activities do not introduce weed species to the non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

Two broad fauna habitats were recorded within the application area, plains with red-brown loamy sand and sandstone outcrops with shallow grey-brown loam (Astron, 2012). Each of these are common in the bioregion (CALM, 2002; Astron, 2012; GIS Database).

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

Methodology

Astron (2012)

CALM (2002)

GIS Database:

- Clarkson 80 cm Orthomosaic - Landgate 2007
- IBRA WA (Regions - Sub Regions)
- Threatened and Priority Flora
- Threatened Ecological Sites Buffered

(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

A Level 1 fauna survey was undertaken over the application area and an adjacent area by a zoologist from Astron in July 2012. The survey included a database search, descriptions of fauna habitats present in the survey area, targeted searches for fauna species of conservation significance and a compilation of fauna species recorded opportunistically as the survey area was traversed (Astron, 2012).

Two main fauna habitats were recorded within the application area:

- Plains with red-brown loamy sand - scattered *Corymbia* trees over *Acacia* woodland over hummock and tussock grassland; and
- Sandstone outcrops with shallow grey-brown - scattered *Corymbia* trees over sparse *Acacia* shrubland over hummock and tussock grasses (Astron, 2012).

The rocky outcrops present in the survey area appear to be common in the coastal region of the Dampier Peninsula, but less so inland. Areas of rocky outcrops likely to be similar to those in the survey area can be seen on aerial photography extending for approximately 13 kilometres south-west from the survey area and to the north of Great Northern Highway (Astron, 2012).

A total of 22 fauna species were recorded during the fauna survey (Astron, 2012). No fauna of conservation significance were observed during the survey (Astron, 2012). Several diggings were observed in the sandy plains portion of the survey area, the characteristics of which are typical of those made by foraging Greater Bilbies (*Macrotis lagotis*), listed as Vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (Astron, 2012). Foraging areas of Greater Bilbies are characterised by numerous scattered conical-shaped diggings, and are often temporary and dictated by the availability of food (Johnson, 2008 as quoted in Astron, 2012). Despite targeted searches in the survey area for a potential burrow entrance, none were observed. The lack of tracks and the crusting of the soil around some of the holes suggested that they were not dug very recently (Astron, 2012). Therefore, it is possible that the survey area may be used by Greater

Bilby for occasional foraging, and possibly for burrowing (Astron, 2012). Moseby and O'Donnell (2003, as quoted in Astron, 2012) found that Greater Bilbies have an average home range of between 316 hectares for males and 18 hectares for females. Greater Bilbies may also move up to 5 kilometres between burrows (Southgate et al., 2007 quoted in Astron, 2012). Therefore, if the Greater Bilby is present, the proposed clearing of 10 hectares is not likely to comprise the entire home range of an individual and the impact of the quarry development may be considered low (Astron, 2012).

Ninox (2009) identified the Northern Short-tailed Mouse (*Leggadina lakedownensis*, DEC Priority 4) as having a moderate possibility of occurrence within the survey area, however, it was not possible to determine the presence of this species during the Astron (2012) survey. The Northern Short-tailed Mouse stays in burrows during the day and therefore if present in the application area it may be impacted during the vegetation clearing (Astron, 2012).

While the application area may provide foraging habitat for the Greater Bilby and suitable habitat for other native fauna species, the fauna habitat types provided by the application area are common in the local area and the bioregion.

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

Methodology Astron (2012)
Ninox (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

Two Threatened Flora species are known from the Dampierland IBRA region, *Keraudrenia exastia* and *Pandanus spiralis* var. *flammeus* (Astron, 2012). According to available databases there are no known records of Threatened Flora within the application area (GIS Database).

A botanist from Astron conducted a flora survey over the application area and an adjacent area in July 2012. No Threatened Flora was recorded during the survey (Astron, 2012).

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

Methodology Astron (2012)
GIS Database:
- Threatened and Priority Flora

(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

A search of available databases revealed there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest recorded TEC is located approximately 70 kilometres west of the application area (GIS Database).

No floristic TECs were identified during the flora survey conducted by an Astron botanist (Astron, 2012).

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

Methodology Astron (2012)
GIS Database:
- Threatened Ecological Sites Buffered

(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 clearing application area falls within the Dampierland Interim Biogeographic Regionalisation for Australia (IBRA) bioregion in which 99.7% of the pre-European vegetation remains (see table) (Government of Western Australia, 2011; GIS Database). This gives the bioregion a conservation status of 'Least Concern' according to the Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment, 2002).

The vegetation of the clearing application area has been mapped as Beard vegetation associations:

750: Shrublands, pindan; *Acacia tumida* shrubland with grey box and cabbage gum medium woodland over ribbon grass and curly spinifex; and

751: Shrublands, pindan; *Acacia eriopoda* and *Acacia tumida* shrubland with scattered low *Eucalyptus confertifolia* over curly spinifex (GIS Database).

Over 99% of both of these vegetation associations remains at a state level and bioregional level (Government of Western Australia, 2011). These vegetation associations would be given a conservation status of 'Least Concern' at both a state and bioregional level (Department of Natural Resources and Environment, 2002).

The vegetation under application is not a remnant of 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 – Dampierland	8,345,173	8,321,243	~99.7	Least Concern	1.0
Beard Veg Assoc. – State					
750	1,231,155	1,225,688	~99.6	Least Concern	2.3
751	16,045	15,995	~99.7	Least Concern	-
Beard Veg Assoc. – Bioregion					
750	1,229,176	1,225,279	~99.7	Least Concern	2.3
751	16,045	15,995	~99.7	Least Concern	-

* Government of Western Australia (2011)

** 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)
Government of Western Australia (2011)
GIS Database:
- IBRA WA (Regions - Subregions)
- 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

According to available databases, there are no watercourses or wetlands within the application area (GIS Database). Two vegetation associations were mapped within the application area by an Astron botanist and neither of these were described as riparian vegetation (Astron, 2012).

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

Methodology Astron (2012)
GIS Database:
- Hydrography, 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

The application area is mapped as the Reeves Land System (GIS Database). The Reeves Land System is characterised by sandplain with scattered hills and minor plateaux, reddish sandy soils and pindan (Payne and Schoknecht, 2011). Pindan vegetation is subject to fairly frequent fires which induce short term changes in botanical composition, density and structure. Sandplains have minor susceptibility to wind erosion immediately after fire but stabilise rapidly after rain (Payne and Schoknecht, 2011).

Soils in the application area comprise red-brown loamy sand on plains and shallow grey-brown loam (skeletal soils) on rocky outcrops (Astron, 2012). The removal of vegetation from these soils across the application area is likely to result in some wind and water erosion, however, it is unlikely to be significant (Astron, 2012).

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

Methodology Astron (2012)
Payne and Schoknecht (2011)
GIS Database:

(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

The application area is not within conservation estate (GIS Database). The closest conservation area is the ex-Roebuck Plains Station, a DEC proposed 2015 pastoral lease exclusion, which is located approximately 70 kilometres south-west of the application area (GIS Database). Given the large distance between these two areas it is unlikely that the environmental values of the proposed conservation estate will be compromised by the proposed clearing.

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

Methodology GIS Database:
- DEC Proposed 2015 Pastoral Lease Exclusions
- 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

There are no watercourses or wetlands within the application area (GIS Database). While the removal of vegetation may result in some localised deterioration of surface water quality through water erosion, the surrounding vegetation is intact and water is unlikely to be impacted in any nearby watercourses (Astron, 2012).

According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is the Broome Water Reserve which is located approximately 60 kilometres west of the application area (GIS Database). The small amount of clearing is unlikely to cause deterioration in groundwater.

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

Methodology Astron (2012)
GIS Database:
- Hydrography, Linear
- Public Drinking Water Source Areas (PDWSAs)

(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 application area is within the Coastal catchment area of the Fitzroy River basin (GIS Database). Given the size of the area to be cleared (10 hectares) in relation to the size of the catchment areas (344,252 hectares) (GIS Database), the proposed clearing is not likely to increase the potential of flooding on a catchment scale.

The application area alternates between low plains and rocky outcrops and has well draining, sandy pindan soils present (Astron, 2012). The proposed clearing is unlikely to cause or exacerbate flooding at a local scale.

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

Methodology Astron (2012)
GIS Database:
- Hydrographic Catchments - Catchments

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

Comments

There is one Native Title Claim (WC99/25) over the area under application (GIS Database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. 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*.

There are no registered 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 Aboriginal Sites of 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.

The clearing permit application was advertised on 7 January 2013 by the Department of Mines and Petroleum inviting submissions from the public. Two submissions were received regarding Aboriginal heritage issues, Native Title, environmental concerns, information provided and consultation. Responses were sent to the submission parties and the environmental concerns are addressed throughout the assessment.

Methodology GIS Database:
 - Aboriginal Sites of Significance
 - Native Title Claims - Registered with the NNTT

4. References

- Astron (2012) Nillibubbica Quarry - Level 1 Flora and Fauna Survey, July 2012. Report Prepared by Astron Environmental Services, August 2012.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management, Western Australia.
- 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.
- Government of Western Australia (2011) 2011 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). WA Department of Environment and Conservation, Perth.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Ninox (2009) A Level 1 Vertebrate Fauna Assessment of Tenements M04/17, M04/69, M04/75 Between Derby and Broome, in the Kimberley Region of Western Australia. Report by Ninox Wildlife Consulting for John Consulting Services on behalf of Kimberley Quarries Pty Ltd, March 2009.
- Payne, A. and Schoknecht, N. (2011) Technical Bulletin - Land Systems of the Kimberley Region, Western Australia, No. 98. Department of Agriculture and Food, Western Australia.

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), 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 (now DEC), Western Australia
DoIR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
EP Act	Environmental Protection Act 1986, Western Australia
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
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 Act	Rights in Water and Irrigation Act 1914, Western Australia
s.17	Section 17 of the Environment Protection Act 1986, Western Australia
TEC	Threatened Ecological Community

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.