

1. Application details						
1.1. Permit application	n details					
Permit application No.:	7820/1					
Permit type:	Purpose Permit					
1.2. Proponent details						
Proponent's name:	Ambrose Mining Pty Ltd					
1.3. Property details						
Property:	Mining Lease 26/835					
Colloquial name:	Kalgoorlie-Bolder					
1.4 Application						
Clearing Area (ba)	No. Trees Method of Clearing For the purpose of					
100	Mechanical Removal Mineral Production					
1.5. Decision on appli	cation					
Decision on Permit Applicat	ion: Grant					
Decision Date:	21 December 2017					
2 Site Information						
2.1. Existing environm	nent and information					
2.1.1. Description of the I	native vegetation under application					
Vegetation Description	Beard vegetation associations have been mapped for the whole of Western Australia. One Beard associations is located within the application area (GIS Database):					
	20: Low woodland; mulga mixed with <i>Allocasuarina cristata</i> and Eucalyptus sp. A flora and vegetation survey was conducted over the application area by Botanica Consulting in September 2017 (Botanica, 2017). The application area comprised the following vegetation types:					
	Clay-Loam Plain: Mid woodland of <i>Eucalyptus salmonophloia</i> over low shrubland of <i>Eremophila scoparia/ Maireana sedifolia</i> and open chenopod shrubland of <i>Atriplex vesicaria</i> on clay-loam plain;					
Hillslope: Mid woodland of <i>Eucalyptus lesouefii</i> over low shrubland of <i>Maireana sedifolia</i> ar open chenopod shrubland of <i>Atriplex vesicaria</i> on hillslope;						
	Open Depression: Mid open woodland of <i>Eucalyptus salmonophloia</i> over low shrubland of mixed Chenopods in open depression; and					
	Cleared Vegetation.					
Clearing Description	Ambrose Mining Pty Ltd has applied to clear up to 100 hectares of native vegetation, within an application area of approximately 182.45 hectares, for the purpose of mineral production. The project is located approximately 10 kilometres north-east of Kalgoorlie, within the City of Kalgoorlie-Boulder.					
Vegetation Condition	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).					
Comment	The vegetation condition was assessed by botanists from Botanica (2017).					

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 with the Eastern Murchison subregion of the Murchison Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Eastern Murchison subregion comprises broad plains of red-brown soils and breakaway complexes and red sandplains (CALM, 2002). Vegetation is dominated by Mulga Woodlands often rich in ephemerals, hummock grasslands, saltbush shrublands and Tecticornia shrublands. The East Murchison subregion is rich and diverse in both its flora and fauna, however, most species are wide ranging and usually occur in at least one and often several adjoining subregions (CALM, 2002).

Three vegetation associations were identified within the application area, containing a total of 69 flora from 18 families (Botanica, 2017). Of these, 68 taxa were native plant species (Botanica, 2017). The vegetation within the application area is considered moderately diverse and is not restricted to the application area (Botanica, 2017).

No Threatened flora, Priority flora, Threatened Ecological Communities or Priority Ecological Communities have been recorded within the application area (GIS Database), and none were found during the flora and vegetation survey (Botanica, 2017).

Desktop surveys of available databases identified six Priority flora species and one Threatened flora species with the potential to occur within the survey area, based on known distributions (Botanica, 2017). Of these, three Priority flora species were considered the most likely to occur within the application area, based on habitat preferences, *Eremophila praecox* (P1), *Ptilotus chortophytus* (P1), *and Rhagodia* sp. Yeelirrie Station (P1) (Botanica, 2017). However none of these species were found during the field survey (Botanica, 2017).

One weed species was found during the flora survey (Botanica, 2017). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This can in turn lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. None of these species are listed as "Declared Plant" species under the *Agriculture and Related Resources Protection Act 1976* by the Department of Primary Industries and Regional Development. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A fauna assessment of the application area was undertaken by Botanica (2017). This consisted of a fauna reconnaissance survey completed on 6 September 2017 and a search of the Western Australia Museum and DPaW Naturemap online databases. The application area does not contain any significant fauna habitat features, and the fauna habitats present were identified as common and widespread (Botanica, 2017). Therefore the application area is not expected to support a high level of faunal diversity.

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

Methodology Botanica (2017) CALM (2002)

> GIS Database: - IBRA WA (Regions - Sub Regions)

(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 reconnaissance survey was conducted over the application area during September 2017 (Botanica, 2017). The fauna survey included opportunistic observations of fauna, and recording of secondary evidence such as tracks, scats, foraging evidence or calls (Botanica, 2017).

The fauna habitats within the survey area comprised a mosaic of clay-loam plains and open depressions (Botanica, 2017). The application area did not contain any locally restricted habitat types (Botanica, 2017).

Several fauna species (mostly birds) of conservation significance have the potential to occur within the application area based on previous records (Botanica, 2017). However, most fauna species occurring in the region tend to be wide ranging, and are unlikely to be specifically dependent on the habitats within the application area (Botanica, 2017; CALM, 2002). No species of conservation significance were recorded during the on-site survey (Botanica, 2017).

Malleefowl (*Leipoa ocellata*) (Vulnerable) previously inhabited much of the Murchison region, however their range and abundance is now greatly reduced. Database searches found previous records of Malleefowl within

10 kilometres of the application area (Botanica, 2017). However, no evidence of Malleefowl was found during the on-site survey, and Botanica (2017) considered that the application area was only marginally suitable for Malleefowl, due to the sparseness of the vegetation and lack of suitable leaf litter required for mound construction. Botanica (2017) concluded that, although Malleefowl may be an occasional transient visitor, the application area did not represent significant habitat for Malleefowl.

The landforms and habitat types found within the application area are relatively common and widespread in the region (Botanica, 2017; CALM, 2002; GIS Database). The vegetation proposed to be cleared is unlikely to represent significant habitat for fauna in either a local or regional context.

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

Methodology Botanica (2017) CALM (2002)

(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 known records of Threatened flora within the application area (GIS Database). Desktop surveys of available databases identified one Threatened flora species, *Gastrolobium graniticum*, with the potential to occur within the survey area, based on known distributions (Botanica, 2017). However Botanica (2017) reported that the application area was generally lacking in suitable habitat for this species and therefore considered that it was unlikely to occur. The on-site flora survey of the application area did not record any species of Threatened flora (Botanica, 2017).

The vegetation associations within the application area are common and widespread within the region (Botanica, 2017; GIS Database), and the vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened (rare) flora.

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

Methodology Botanica, 2017

GIS Database: - Threatened 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

According to available databases, there are no known Threatened Ecological Communities (TEC's) within the application area (GIS Database). No vegetation communities described as a TEC were recorded during the botanical survey of the application area (Botanica, 2017). The nearest known TEC (Mount Belches) is located approximately 55 kilometres 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 Botanica, 2017

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 Biogeographical Regionalisation of Australia (IBRA) bioregion (GIS Database). Approximately 99% of the pre-European vegetation remains within the Murchison Bioregion (Government of Western Australia, 2015).

The vegetation in the application area has been broadly mapped as Beard vegetation association:

20: Low woodland; mulga mixed with Allocasuarina cristata and Eucalyptus sp. (GIS Database)

Approximately 99% of the pre-European extent of this vegetation association remains uncleared at both the state and bioregional level (see table below) (Government of Western Australia, 2015).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV
IBRA Bioregion	28 120 586	28 044 823	~ 99 73	Least	Reserves
– Murchsion	20,120,000	20,011,020	00.70	Concern	1.10
Beard veg assoc. – State					
20	1,295,103.34	1,292,474.54	~99.8	Least Concern	19.38
Beard veg assoc. – Bioregion					
20	1,174,259	1,171,630	~99.78	Least Concern	15.49

* Government of Western Australia (2016)

** Department of Natural Resources and Environment (2002)

A review of aerial photography indicates that the application area is not significant as a remnant of native vegetation at a local scale.

The vegetation within the application area is not considered to be a remnant of vegetation in an area that has been extensively cleared.

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 (2016)
 - GIS Database:

- IBRA 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 may be at variance to this Principle

There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). Two minor drainage lines pass through the application area (GIS Database). Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall (CALM, 2002).

Based on the above, the proposed clearing may be at variance to this Principle. Potential impacts to vegetation growing in association with the watercourse may be minimised by the implementation of a watercourse management condition.

Methodology CALM (2002)

GIS Database: - Hydrography, Lakes - Hydrography, linear

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

Comments Proposal may be at variance to this Principle

The proposed clearing area is mapped as occurring within the Gumland land system (GIS Database). The Gumland land system is described as level to gently inclined pedeplains with halophytic shrubs under eucalypt woodland (DAFWA, 2015). This land system may be susceptible to soil erosion where vegetation is cleared or protective stony mantles are disturbed, particularly within drainage areas (DAFWA, 2015).

Based on the above, the proposed clearing may be at variance to this Principle. Potential land degradation may be minimised by the implementation of a staged clearing condition.

Methodology DAFWA (2015)

GIS Database:

- Landsystem Rangelands
- Hydrography, linear
- Topographical Contours, 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 The application area is not located within a conservation reserve (GIS Database). The nearest conservation reserve is the Kalgoorlie Arboretum located approximately 8 kilometres 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: - DPaW 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

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

There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). Two seasonal drainage lines pass through the application area (GIS Database). Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall. The proposed clearing is unlikely to result in significant changes to surface water quality.

The local area receives an average rainfall of approximately 266.8 millimetres per year (BoM, 2017). Given the area experiences a pan evaporation rate of approximately 2800 millimetres per year, approximately ten times the average annual rainfall (Botanica, 2017) there is likely to be little surface water flow during normal seasonal rains.

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

Methodology BoM (2017) Botanica (2017)

> GIS Database: - 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

The application area is located in the Murchison bioregion and is characterised by hot summers and mild wet winters (BoM, 2017; GIS Database).

Rainfall patterns are typically associated with cold fronts in winter and thunderstorms and rain bearing depressions occurring in summer (Botanica, 2017). Average annual rainfall for the application area is relatively low at 266.8 millimetres (BoM, 2017). The average annual evaporation rate of 2800 millimetres (Botanica, 2017) is approximately 10 times the average annual rainfall and any surface water resulting from normal rainfall events is likely to be relatively short lived.

There are no permanent watercourses within the application area (Botanica, 2017). While drainage lines are present within the application area these are poorly defined and only likely to flow following major rainfall events (Botanica, 2017). Temporary localised flooding may occur briefly following heavy rainfall events. However, the proposed clearing is unlikely to increase the incidence or intensity of natural flooding events.

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

Methodology BoM (2017) Botanica (2017)

> GIS Database: - Landsystem Rangelands

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

Comments

There is one Native Title Claim (WC10/14) over the area under application Department of Planning, Lands and Heritage, 2017). This claim has been filed at the Federal Court of Australia. 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*.

According to available databases there are no Aboriginal Sites of Significance within the application area (Department of Planning, Lands and Heritage, 2017). 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 Water and Environmental Regulation and the Department of Biodiversity Conservation and Attractions, 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 6 November 2017 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received.

Methodology Department of Planning, Lands and Heritage (2017)

4. References

BoM (2017) Climate Statistics for Australian Locations. A Search for Climate Statistics for Kalgoorlie, Australian Government Bureau of Meteorology, Viewed 30 October 2017 <

http://www.bom.gov.au/climate/averages/tables/cw_012038.shtml>.

- Botanica (2017) Flora and Fauna Reconnaissance Survey M26/835. Report prepared for Ambrose Mining Pty Ltd, by Botanica Consulting, October 2017.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management.

DAFWA (2015) Advice received in relation to Clearing Permit Application CPS 6603/1. Commissioner of Soil and Land Conservation, Department of Agriculture and Food, Western Australia, 29 July 2015.

- 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.
- Department of Planning, Lands and Heritage (2017) Aboriginal Heritage Inquiry System, Department of Aboriginal Affairs, Perth, viewed 18 December 2017 <u>https://maps.daa.wa.gov.au/ahis/</u>.

Government of Western Australia (2016) 2016 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of June 2016. WA Department of Parks and Wildlife, 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.

5. Glossary

Acronyms:

ВоМ	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DBCA	Department of Biodiversity Conservation and Attractions, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DBCA and DWER)
DEE	Department of the Environment and Energy, Australian Government
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia
DMP	Department of Mines and Petroleum, Western Australia (now DMIRS)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora
DoE	Department of the Environment, Australian Government (now DEE)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DEE)
DWER	Department of Water and Environmental Regulation, Western Australia
EPA	Environmental Protection Authority, Western Australia
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
DEC	Priority Ecological Community Western Australia
FEG	Phonty Ecological Community, Western Australia
RIWI Act	Rights in Water and Irrigation Act 1914, Western Australia
TEC	Threatened Ecological Community

Definitions:

{DPaW (2017) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

T Threatened species:

Published as Specially Protected under the *Wildlife Conservation Act 1950*, listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).

Threatened fauna is that subset of 'Specially Protected Fauna' declared to be 'likely to become extinct' pursuant to section 14(4) of the *Wildlife Conservation Act 1950*.

Threatened flora is flora that has been declared to be 'likely to become extinct or is rare, or otherwise in need of special protection', pursuant to section 23F(2) of the *Wildlife Conservation Act 1950*.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

CR Critically endangered species

Threatened species considered to be facing an extremely high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

EN Endangered species

Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

VU Vulnerable species

Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

EX Presumed extinct species

Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.

IA Migratory birds protected under an international agreement

Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.

CD Conservation dependent fauna

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.

OS Other specially protected fauna

Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.

P Priority species

Species which are poorly known; or

Species that are adequately known, are rare but not threatened, and require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

P1 Priority One - Poorly-known species:

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

P2 Priority Two - Poorly-known species:

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

P3 Priority Three - Poorly-known species:

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

P4 Priority Four - Rare, Near Threatened and other species in need of monitoring:

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.