GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 5245/2
Permit Holder:	HBJ Minerals Pty Ltd
Duration of Permit:	17 November 2012 – 17 November 2022

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I –CLEARING AUTHORISED

1. **Purpose for which clearing may be done**
   Clearing for the purpose of mineral exploration and production.

2. **Land on which clearing is to be done**
   Lot 105 on Deposited Plan 40396, Karramindie.
   Mining Lease 15/717, Karramindie.

3. **Area of Clearing**
   The Permit Holder must not clear more than 200 hectares of native vegetation within the area shaded yellow on attached Plan 5245/2.

4. **Type of clearing authorised**
   The Permit Holder shall not clear native vegetation unless the purpose for which the clearing is authorised is enacted within three months of the authorised clearing being undertaken.

5. **Period in which clearing is authorised**
   The Permit Holder shall not clear any native vegetation after 17 November 2017.

6. **Application**
   This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

PART II –MANAGEMENT CONDITIONS

7. **Weed control**
   When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:
   (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
   (b) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
   (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

8. Vegetation management

(a) Where practicable the Permit Holder shall avoid clearing riparian vegetation.

(b) Where a watercourse is to be impacted by clearing, the Permit Holder shall maintain the existing surface flow by use of culverts.

9. Flora management

Where *Diocera acutifolia* has been identified and the its written location(s) provided to the CEO within report 'Level 1 Flora and Vegetation Survey for the Exploration of Location Lease 53 and M15/717 – Alacer Gold South Kalgoorlie Operations' (Native Vegetation Solution, May 2013), the Permit Holder shall ensure that when clearing for the purpose of mineral production:

(a) no clearing of identified *Diocera acutifolia* occurs; and

(b) no clearing occurs within 10 metres of identified *Diocera acutifolia*, unless approved by the CEO.

10. Malleefowl management

(a) Prior to undertaking any clearing authorised under this Permit, the Permit Holder shall engage a *fauna specialist* to conduct a *fauna survey* within the Permit Area to identify *Leipoa ocellata* (Malleefowl) mounds and *Leipoa ocellata* (Malleefowl) *critical habitat.*

(b) Prior to undertaking any clearing authorised under this Permit, the Permit Holder shall provide the results of the *fauna survey* in a report to the CEO.

(c) The *fauna survey* report must include;

(i) the location of each *Leipoa ocellata* (Malleefowl) mound, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees, to the CEO.

(ii) The location of the *Leipoa ocellata* (Malleefowl) *critical habitat*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees, to the CEO.

(iii) the methodology used to survey the Permit Area and to establish the *Leipoa ocellata* (Malleefowl) *critical habitat* and to identify the mound/s;

(iv) the extent of the *critical habitat* of the *Leipoa ocellata* (Malleefowl) shown on a map; and

(v) a description of the *critical habitat* found.

(d) Where *Leipoa ocellata* (Malleefowl) mounds are identified under condition 10(a) of this Permit, the Permit Holder shall ensure that no clearing of *critical habitat* or of the identified *Leipoa ocellata* (Malleefowl) mounds occurs, unless first approved by the CEO.

11. Fauna management

The Permit Holder shall not clear *habitat trees* found within the area shaded yellow on attached Plan 5245/2 unless:

(a) the clearing is for the purpose of mineral production; or

(b) approved by the CEO.

12. Retain vegetative material and topsoil, revegetation and rehabilitation

The Permit Holder shall:

(a) Retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil in an area that has already been cleared.

(b) At an optimal time within 12 months following completion of geotechnical investigations, *revegetate* and *rehabilitate* areas not required for future scheduled and approved development, by:

(i) ripping the ground on the contour to remove soil compaction; and

(ii) laying the vegetative material and topsoil retained under condition 12(a) on the cleared area(s).

(c) Within 24 months of laying the vegetative material and topsoil on the cleared area in accordance with condition 12(b) of this Permit:

(i) engage an *environmental specialist* to determine the species composition, structure and density of the area *revegetated* and *rehabilitated*; and

(ii) where, in the opinion of an *environmental specialist*, the composition structure and density determined under condition 12(c)(i) of this Permit will not result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, *revegetate* the area by deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to pre-clearing vegetation types in that area and ensuring only *local provenance* seeds and propagating material are used.

PART III - RECORD KEEPING AND REPORTING

13. Records to be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

(a) In relation to the clearing of native vegetation authorised under this Permit:
   (i) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
   (ii) the date that the area was cleared;
   (iii) the size of the area cleared (in hectares): and
   (iv) purpose for which clearing was undertaken.

(b) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 12 of this Permit:
   (i) the location of any areas *revegetated* and *rehabilitated*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
   (ii) a description of the *revegetation* and *rehabilitation* activities undertaken;
   (iii) the size of the area *revegetated* and *rehabilitated* (in hectares);

14. Reporting

(a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
   (i) of records required under condition 13 of this Permit; and
   (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.

(b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 30 June of each year.

(c) Prior to 17 August 2017, the Permit Holder must provide to the CEO a written report of records required under condition 13 of this Permit where these records have not already been provided under condition 14(a) of this Permit.

DEFINITIONS

The following meanings are given to terms used in this Permit:

critical habitat: means any part of the Permit Area comprising of the habitat of flora or fauna species and its population, that is critical for the health and long term survival of the flora or fauna species and its population;

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

environmental specialist: means a person who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit, or who is approved by the CEO as a suitable environmental specialist.

fauna specialist: means a person who holds a tertiary qualification specializing in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the CEO as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Wildlife Conservation Act 1950*;

***fauna survey*:** means a field-based investigation, including a review of established literature, of the biodiversity of fauna and/or fauna habitat of the Permit Area. Where conservation significant fauna are identified in the Permit Area, the survey should also include sufficient surrounding areas to place the Permit Area into local context.
fill means material used to increase the ground level, or fill a hollow;
habitat tree means trees that have a diameter, measured at 1.5 metres from the base of the tree, of 50 centimetres or greater, that contains or has the potential to develop hollows or roosts suitable for native fauna;
local provenance means native vegetation seeds and propagating material from natural sources within 50 kilometres and and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared.
mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;
planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;
regenerate/ed/ion means re-establishment of vegetation from in situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing *mulch*;
rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area;
revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as natural *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area;
weed/s means any plant -

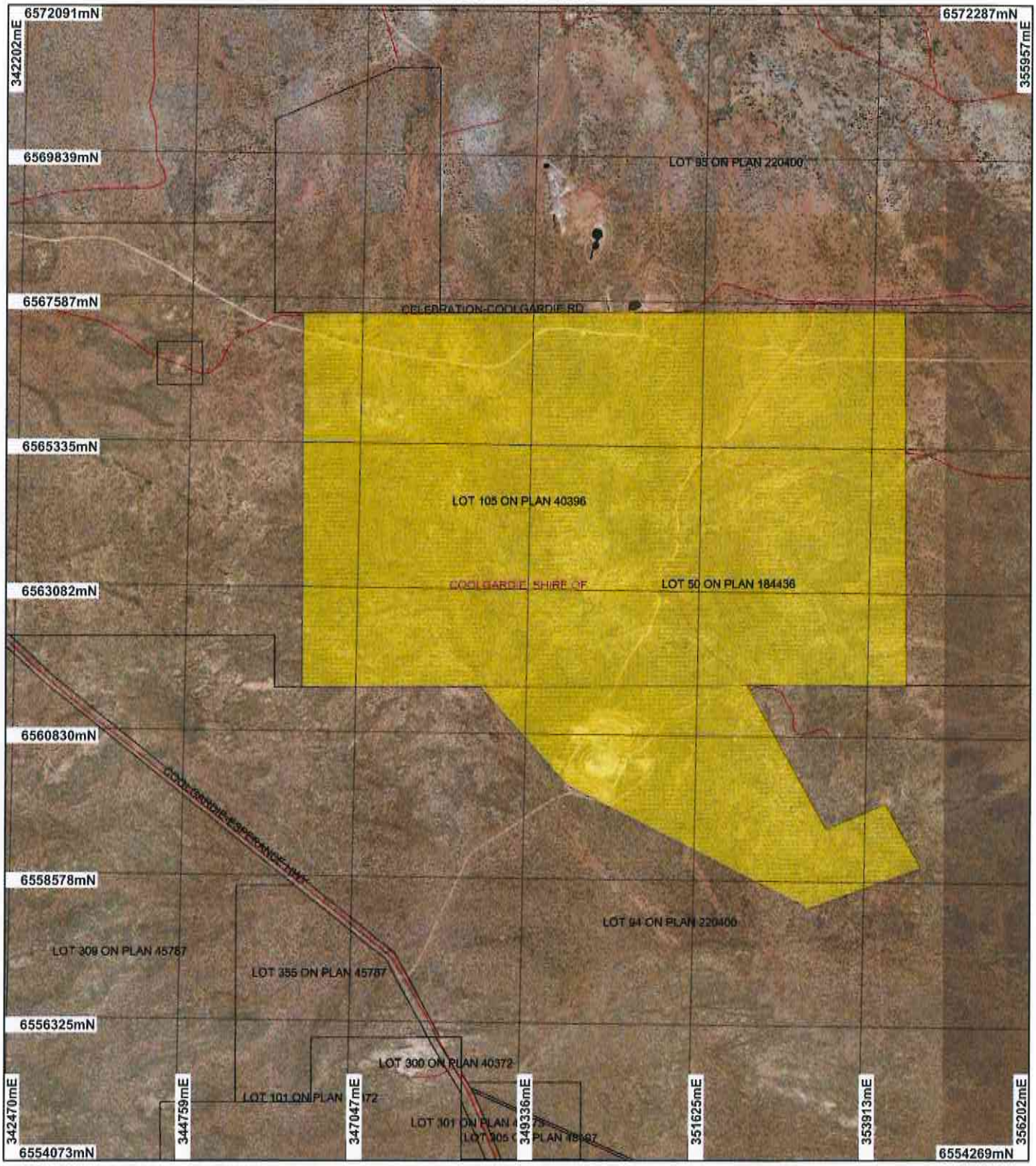
(a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
(b) published in the former Department of Environment and Conservation Regional Weed Assessments, regardless of ranking; or
(c) not indigenous to the area concerned.

M Warnock
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

Officer delegated under Section 20
of the Environmental Protection Act 1986

9 October 2013

Plan 5245/2



LEGEND

- Cadastre
- Local Government Authorities
- Road Centrelines

Clearing Instruments

- Areas Approved to Clear

Yilmia 1.4m Orthomosaic - Landgate 2003

Kalgoorlie 50cm Orthomosaic - Landgate 2006

Lake Lefroy 3235 Mar 2011 Mosaic

N

0 2 km

Scale 1:80000

(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

amended Date 9/10/13

M Warnock

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

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

Government of Western Australia
Department of Environment Regulation

GOVERNMENT OF WESTERN AUSTRALIA

Clearing Permit Decision Report

Government of Western Australia
Department of Environment Regulation

1. Application details

1.1. Permit application details

Permit application No.: 5245/2
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **HBJ Minerals Pty Ltd**

1.3. Property details

Property: Mining Lease M15/717
LOT 105 ON PLAN 40396 (Lot No. 105 COOLGARDIE-ESPERANCE KARRAMINDIE 6429)
Local Government Area: Shire of Coolgardie
Colloquial name:

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 9 October 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
Beard Vegetation Association: 9 - Medium woodland; coral gum (Eucalyptus torquata) & goldfields blackbutt (E. le soufii), (also some e10,11) (Shepherd et al. 2001). Beard Vegetation Association: 128 - Bare areas; rock outcrops (Shepherd et al. 2001). Beard Vegetation Association: 936 - Medium woodland; salmon gum (Shepherd et al. 2001). Beard Vegetation Association: 1413 - Shrublands; acacia, casuarina & melaleuca thicket (Shepherd et al. 2001).	The amended application is for clearing of 200 hectares of native vegetation for the purpose of a mineral exploration and production on Mining Lease M15/717 and Lot 105 on Deposited Plan 40396, Karramindie, in the Shire of Coolgardie.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994). To Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994).	Vegetation description and condition were determined through supporting information provided by the applicant (NVS 2012, 2013) and aerial imagery. A Level 1 flora and vegetation survey of the application area identified the following vegetation groups within the application area (NVS 2012, 2013): • Transitional Eucalyptus woodland over mixed shrubland. Dominant species were Eucalyptus transcontinentalis, E. lesouefii, E. oleosa subsp. oleosa, E. salmonophloia, E. gracilis, Melaleuca sheathiana, Senna artemisioides subsp. artemisioides, Eremophila scoparia and Olearia muelleri. • Eucalyptus ravida woodland over Diocirea acutifolia shrubland. Dominant species were Eucalyptus ravida, Diocirea acutifolia, Eremophila scoparia and Acacia erinacea. • Eucalyptus transcontinentalis woodlands over Melaleuca sheathiana shrubland. Dominant species were Eucalyptus transcontinentalis, Melaleuca sheathiana, Senna artemisioides subsp. filifolia and Acacia erinacea. • Transitional Eucalyptus woodlands over Melaleuca sheathiana over mixed shrubland. Dominant species were Eucalyptus transcontinentalis, E. gracilis, E. lesouefii, E. oleosa subsp. Oleosa, E. salmonophloia, Melaleuca sheathiana, Senna artemisioides subsp. Filifolia, Cratystylis conocephala and Acacia hemiteles. • Eucalyptus lesouefii woodland on hill rise. Dominant species were Eucalyptus lesouefii, and Eremophila oppositifolia subsp. angustifolia and Acacia erinacea. • Eucalyptus gracilis woodland over Diocirea acutifolia shrubland. Dominant species were Eucalyptus gracilis, Senna artemisioides subsp. Filifolia and Diocirea acutifolia. • Allocasuarina helmsii shrubland. Dominant species were Allocasuarina helmsii, A. acutivalvis subsp. Acutivalvis, Eremophila oppositifolia subsp. Angustifolia and Acacia sp narrow phyllode. • Eucalyptus griffithsii woodland. Dominant species were

Eucalyptus griffithsii, Olearia muelleri, Halgania andromedifolia, Acacia erinacea and Senna artemisioides subsp. filifolia.

- Transitional Eucalyptus woodland over mixed shrubland: Dominant species were Eucalyptus transcontinentalis, E. gracilis, E. salmonophloia, E. ravida, Senna artemisioides subsp. artemisioides and Eremophila scoparia.
- Mixed Eucalyptus woodland over sclerophyll shrubland on undulating hills: Dominant species were Eucalyptus transcontinentalis, E. lesouefii, E. gracilis, E. ravida, Melaleuca sheathiana, Acacia erinacea and Trymalium myrtillus.
- Acacia sp. narrow phyllode shrubland with emergent Eucalyptus griffithsii: Dominant species were Eucalyptus griffithsii, Acacia sp. narrow phyllode, Trymalium myrtillus,Scaevola spinescens, and Acacia erinacea.
- Open Eucalyptus salmonophloia woodland: Dominant species were Eucalyptus salmonophloia, Senna artemisioides subsp. filifolia, Acacia hemiteles and Eremophila interstans subsp. virgata.
- Eucalyptus salmonophloia woodland over Maireana sedifolia shrubland: Dominant species were Eucalyptus salmonophloia, Maireana sedifolia and Cratystylisconocephala.
- Eucalyptus salmonophloia woodland over mixed shrubland: Dominant species were Eucalyptus salmonophloia over Eremophila scoparia, Senna artemisioides subsp. artemisioides, and Dodonaea lobulata.
- Eucalyptus lesouefii and E. gracilis woodland on rocky hill slopes: Dominant species were Eucalyptus lesouefii, E. gracilis, Halgania andromedifolia, and Acacia erinacea.
- Mixed Eucalyptus woodland over Melaleuca sheathiana shrubland: Dominant species were Eucalyptus transcontinentalis, E. lesouefii, E. oleosa subsp. oleosa, E. salmonophloia, E. gracilis, Melaleuca sheathiana, Senna artemisioides subsp. artemisioides, Eremophila scoparia and Olearia muelleri.
- Eucalyptus stricklandii over Acacia and sclerophyll shrubland: Dominant species were Eucalyptus stricklandii, Dodonaea lobulata, Acacia assimilis and Scaevola spinescens.
- Mixed Eucalyptus woodland over sclerophyll shrubland with Diocirea acutifolia (P3) on undulating hills: Dominant species were Eucalyptus transcontinentalis, E. gracilis, E. lesouefii, E. oleosa subsp. oleosa, E. salmonophloia, Eremophila decipiens subsp. decipiens, and Diocirea acutifolia.
- Melaleuca sheathiana shrubland with Eucalyptus oleosa over Cratystylis Conocephala: Dominant species were Eucalyptus oleosa, and Melaleuca sheathiana and Cratystylis conocephala.
- Eucalyptus gracilis woodland: Dominant species were Eucalyptus gracilis, Eremophila oldfieldii subsp. angustifolia, E.scoparia and Olearia muelleri.
- Eucalyptus stricklandii woodland over Tecticornia open shrubland: Dominant species were Eucalyptus stricklandii, E. celastroides, subsp. celastroides and Tecticornia disarticulata.
- Eucalyptus transcontinentalis and E. campaspe woodland over Melaleuca sheathiana shrubland: Dominant species were Eucalyptus transcontinentalis, E. campaspe, Melaleuca sheathiana, and Eremophila clavata.
- Casuarina pauper shrubland with Eucalyptus lesouefii over mixed shrubland across greenstone hills: Dominant species were Casuarina pauper, E. lesouefii, Eremophila interstans subsp. virgata, and Scaevola spinescens.
- Eucalyptus griffithsii woodland: Dominant species were Eucalyptus griffithsii, Senna artemisioides subsp. filifolia, Eremophila interstans subsp. virgata and E. scoparia.
- Eucalyptus campaspe and E. gracilis woodland: Dominant species were Eucalyptus campaspe, Eucalyptus gracilis and Melaleuca sheathiana.
- Eucalyptus stricklandii and E. lesouefii woodland over Beyeria sulcata: Dominant species were Eucalyptus stricklandii, E. lesouefii, Beyeria sulcata.
- Transitional Eucalyptus woodland over Diocirea acutifolia: Dominant species were Eucalyptus transcontinentalis, E. gracilis, E. salmonophloia, E. ravida, Senna artemisioides subsp. artemisioides and Diocirea acutifolia.

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 may be at variance to this Principle

The applicant has applied to amend clearing permit CPS 5245/1 to increase the size of the clearing by 150 hectares and to include an additional property and purpose (exploration). The application is now to clear up to 200 hectares of native vegetation within Lot 105 on Deposited Plan 40396 and Mining Lease 15/717, Karramindie, for the purpose of mineral exploration and production.

A Level 1 Flora and Vegetation Survey conducted over the application area defined eight discrete vegetation types within the original 50 hectares (NVS 2012) and 21 discrete vegetation types within the additional 150 hectares (NVS 2013). The vegetation under application is predominately eucalypt woodlands over mixed shrublands (NVS 2012, 2013). Excluding previously cleared areas, the vegetation under application ranges from excellent (Keighery 1994) to good (Keighery 1994) condition (NVS 2012, 2013). Areas impacted by existing mining operations and grazing are considered to be in good (Keighery 1994) to degraded (Keighery 1994) condition (NVS 2012, 2013).

A total of 87 species from 43 genera and 24 families were recorded within the original 50 hectares (NVS 2012). A total of 128 species from 57 genera and 30 families were recorded during the vegetation survey over the additional 150 hectares (NVS 2013).

Two weed species, Sonchus oleraceus and Medicago polymorpha, were recorded within the application area (NVS 2012, 2013). These species are not declared plants under the Agriculture and Related Resources Protection Act 1976. The proposed clearing may increase the risk of weeds spreading into the adjacent vegetation. Weed management practices will assist in mitigating this risk.

There are no priority ecological communities mapped within the local area (50 kilometre radius).

There is one Priority 3 flora species recorded within the application area (NVS 2012, 2013). This species was recorded in 16 populations covering a total area of 58 hectares, with approximately 50 hectares of this occurring within the boundaries of the application area. The 16 populations are estimated to contain approximately 64 814 plants (NVS 2012, 2013). According to NVS (2012, 2013), this species is both widespread and in large numbers throughout the local and regional area, is well documented by previous flora surveys and has been recorded from Coolgardie, Norseman, Kambalda, Widgiemooltha and Madoonia Downs. Clearing for the purpose of mineral exploration is not likely to significantly impact the conservation status of this species (DER 2013) given the clearing will occur in relatively small, isolated areas of vegetation, with normal exploration activity requiring less than two percent of the target area to be cleared (HBJ Minerals Pty Ltd 2013a). The location of the open pit and infrastructure is yet to be determined, therefore the proposed impacts to this species for this purpose are unknown. Potential impacts to this species as a result of clearing for mineral production will be managed through the implementation of a flora management condition.

Based on the above, the proposed clearing may be at variance to this Principle.

Methodology

References:
DER 2013
HBJ Minerals Pty Ltd 2013a
Keighery 1994
NVS 2012
NVS 2013
GIS Databases:
- SAC Biodatasets

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

Comments

Proposal may be at variance to this Principle

A Level 1 fauna assessment was conducted for CPS 5245/1 (Bamford Consulting 2012). The additional area covered in CPS 5245/2 (150 hectares) has not been surveyed but given the similar vegetation type and condition, the results of the fauna survey are likely to be relevant to the entire application area.

A total of 57 fauna species comprising three reptile, 42 bird and 12 mammal (three introduced species) species were recorded during the fauna survey for CPS 5245/1 (Bamford Consulting 2012).

One conservation significant species, the Rainbow Bee-eater (Merops ornatus; Marine and Migratory, Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)) was recorded within the survey area. The Rainbow Bee-eater is a migratory bird with a distribution across most of mainland Australia (DSEWPC 2013). The total population size has not been estimated, but is assumed to be reasonably large (DSEWPC 2013). Six locally significant bird species were recorded within the application area: Purple-crowned Lorikeet (Glossopsitta porphyrocephala), Rufous Tree-creeper (Climacteris rufa), Chestnut Quail-thrush (Cinclosoma castanotus), Yellow-plumed Honeyeater (Lichenostomus ornatus) and Gilbert's Whistler

(Pachycephala inornata). These species are widespread in the Greater Western Woodlands, however as a result of large scale habitat clearing, have lost areas of habitat in the Wheatbelt and Goldfields (Bamford Consulting 2012).

Several other conservation significant fauna species were considered likely to occur within the application area: Malleefowl (Leipoa ocellata; Vulnerable, EPBC Act, Carpet Python (Morelia spilota subsp. Imbricate; Other Specially Protected Fauna, Wildlife Conservation Act 1950 (WC Act), Peregrine Falcon (Falco peregrines; Other Specially Protected Fauna, WC Act), Western Rosella (Platycercus icterotis; Rare of Likely to become Extinct, WC Act), Major Mitchell's Cockatoo (Cacatua leadbeateri; Other Specially Protected Fauna, WC Act), Central Long-eared Bat (Nyctophilus timoriensis central form; Other Specially Protected Fauna, WC Act), Shy Heathwren (western) (Hylacola cauta subsp. Whitlocki; Other Specially Protected Fauna, WC Act) and Bush Stone-curlew (Burhinus grallarius; Other Specially Protected Fauna, WC Act). Bamford Consulting (2012) considered the significance of impacts to these species as low.

Targeted searching of the survey area did not identify any Malleefowl mounds, although this species may be an occasional visitor to the area (Bamford Consulting 2012). Suitable habitat exists for this species within the application area and 150 hectares of the application area has not been surveyed. Fauna management practices requiring the applicant to actively check for the presence of Malleefowl mounds before commencing clearing will minimise potential impacts to this species.

No invertebrate species of conservation significance were recorded during the fauna survey and there was little habitat that might support short range endemic species (Bamford Consulting 2012).

Historical disturbance within the application area has led to a reduction in large, mature Eucalypt trees (Bamford Consulting 2012). As a result, any remaining large, mature, hollow-bearing Eucalypt trees provide a significant resource to local fauna as they may contain nesting or roosting sites for conservation significant fauna. Potential impacts to habitat trees as a result of the proposed clearing may be minimised by the implementation of a condition that restricts clearing of habitat trees within the application area. During the assessment of CPS 5245/1, the applicant stated the only proposed clearing of large, mature, hollow bearing Eucalyptus trees will be for the open pit and that proposed clearing areas are walked and inspected by environmental personnel before environmental approval is given.

Aerial photography indicates the local area (50 kilometre radius) is approximately 90 percent vegetated. Given the availability of similar habitat in the surrounding area, the impact of the proposed clearing on fauna species will be minimised.

Based on the above, the proposed clearing may be at variance to this Principle.

Methodology

References:
Alacer Gold 2012
Bamford Consulting 2012
DSWEPC 2013

(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 is one recorded rare flora species within the local area (50 kilometre radius). The closest record of this species is approximately 27 kilometres from the application area.

No rare flora was recorded during the Level 1 Vegetation and Flora Surveys conducted over the application area (NVS 2012, 2013).

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

Methodology

References:
NVS 2012
NVS 2013
GIS Databases:
- SAC Biodatasets

(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 (TEC) within the local area (50 kilometre radius). There were no TECs recorded during a vegetation survey undertaken over the application area (NVS 2012, 2013).

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

Methodology References:
NVS 2012
NVS 2013
GIS Databases:
- SAC Biodatasets

(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**
Aerial photography indicates the local area (50 kilometre radius) is approximately 90 percent vegetated.

The IBRA Bioregion (Coolgardie) and the local government agency (Shire of Coolgardie) retain approximately 98 percent and 99 percent of their respective pre-European extents (Government of Western Australia 2013).

The application area is mapped as Beard Vegetation Association 9, 128, 936 and 1413, which retain approximately 98 percent, 99 percent, 99 percent and 98 percent of their respective pre-European extents within the Coolgardie IBRA Bioregion.

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 percent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia 2001).

Given the vegetation associations mapped over the application area retain over 30 per cent of their pre-European extents within the Coolgardie IBRA Bioregion (Government of Western Australia 2013), the application area is not a significant remnant within an area that has been extensively cleared.

Therefore, the proposed clearing is not at variance to this Principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DPaW Managed Lands (%)
IBRA Bioregion*				
Coolgardie	12 912 204	12 648 491	98	16
Shire*				
Shire of Coolgardie	3 029 733	3 017 748	99	14
Beard Vegetation Association in Bioregion*				
9	240 442	235 101	98	8
128	184 550	183 891	99	17
936	586 792	584 336	99	3
1413	1 061 213	1 042 554	98	19

* Government of Western Australia (2013)

Methodology References:
Commonwealth of Australia 2001
Government of Western Australia 2013
GIS Databases:
- NLWRA, Current extent of Native Vegetation
- Pre-European Vegetation
- Yilmia 1.4m Orthomosaic - Landgate 2003

(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 several minor, non-perennial watercourses mapped within the application area. Vegetation mapping does not show any of the vegetation groups as being solely associated with these drainage lines (NVS 2012, 2013), however given the presence of watercourses, the proposed clearing is likely to impact upon some riparian vegetation. Potential impacts to riparian vegetation as a result of the proposed clearing will be minimised by the implementation of a vegetation management condition.

Given the above, the proposed clearing is at variance to this Principle.

Methodology References
NVS 2012
NVS 2013
GIS Databases:

- ANCA wetlands
- Hydrography, linear
- RAMSAR wetlands

(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

Approximately half the application area has soil mapped as BB5, which Northcote et al. (1960-1968) describes as rocky ranges and hills of greenstones--basic igneous rocks: chief soils seem to be shallow calcareous loamy soils.

Approximately half the application area has soil mapped as My154, which Northcote et al. (1960-1968) describes as undulating country on acid volcanic rocks and sedimentary materials: chief soils are probably neutral red earths with a variable content of ironstone gravel.

A small section of the application area has soil mapped as Mx43, which Northcote et al. (1960-1968) describes as gently undulating valley plains and pediments; some outcrop of basic rock: chief soils are alkaline red earths with limestone or limestone nodules at shallow depth (< 24 in.) on gently sloping slightly concave plains with low gentle rises.

Information regarding land systems is available for an adjacent clearing permit that extends into the application area. A review of the decision report shows these land systems have varying susceptibility to erosion, particularly within drainage areas (DMP 2010).

Clearing for the purpose of mineral exploration is not likely to cause significant erosion given the clearing will occur in relatively small, isolated areas, which will remain surrounded by vegetation. Clearing for mineral production will occur over large areas, and therefore there is potential for erosion to occur as a result of this clearing.

Based on the above, the proposed clearing may be at variance to this Principle.

Potential impacts from erosion as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

Methodology

References:
DMP 2010
Northcote et al. 1960-1968
GIS Databases:
- Soils, Statewide

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

Comments

Proposal may be at variance to this Principle

There are several Department of Parks and Wildlife (DPaW) managed lands within the local area (50 kilometre radius). The application area is adjacent to Karramindie State Forest.

The disturbance caused by the proposed clearing may increase the risk of weeds being introduced into the adjacent State Forest. Therefore, the proposed clearing may be at variance to this Principle. Weed management practices will assist in mitigating this risk.

Methodology

GIS Databases:
- DEC Tenure

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

Comments

Proposal may be at variance to this Principle

There are several minor, non-perennial watercourses mapped within the application area. Clearing of vegetation along these watercourses may cause water quality issues, such as localised surface water sedimentation. Potential impacts to watercourses as a result of the proposed clearing will be minimised by the implementation of a staged clearing condition and a vegetation management condition.

Information obtained from adjacent clearing applications indicates the groundwater depth is approximately 70 to 100 metres (DMP 2010). The groundwater salinity within the application area is between 14 000 and 35 000 milligrams/Litre Total Dissolved Solids (TDS). This is considered to be saline. Despite the high groundwater salinity, given the deep groundwater table and that the average annual evaporation rate is over nine times the average annual rainfall (BoM 2013), there is a low likelihood of increased salinity as a result of the proposed clearing.

Based on the above, the proposed clearing may be at variance to this Principle.

Methodology

References:
BoM 2013
DMP 2010
GIS Databases:
- Groundwater Salinity, Statewide
- 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 within the Lake Lefroy catchment area. Given the size of the area to be cleared (200 hectares) in relation to the size of the catchment area (2 488 250 hectares), the proposed clearing is not likely to increase the potential of flooding on a local or catchment scale.

The average annual rainfall for the application area is 270.3 millimetres, with an average annual evaporation rate of 2 600 millimetres (BoM 2013). Given this, there is likely to be little surface flow during normal seasonal rains. Given the likelihood of little surface flow, the proposed clearing is not likely to cause or increase the incidence or intensity of flooding.

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

Methodology

References:
BoM 2013
GIS Databases:
- Hydrographic Catchments - Catchments

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

Comments

This clearing permit application is to amend Clearing Permit CPS 5245/1, which was granted on 25 October 2012 for the clearing of 50 hectares of native vegetation within Mining Lease 15/717 for the purpose of mineral production. The application to amend this permit requested to increase the clearing size by 150 hectares, to include Lot 105 on Deposited Plan 40396, Karramindie, and to include exploration as a clearing purpose (HBJ Minerals Pty Ltd 2013b).

One submission was received for CPS 5245/1 regarding a creek that intersects the north western corner of the application area. The submission identified this creek as potentially significant in capture area and downstream flow and that consideration should be given to protecting it by limiting activities within a reasonable set distance from the floodway. Potential impacts to this creek from the proposed clearing are addressed under Principles (f), (g) and (i) and will be minimised by the implementation of a vegetation management condition and a staged clearing condition.

No submissions were received for the application to amend.

There are no native title claims over the area under application. 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.

The application area is located within the Goldfields Groundwater Area. It is the applicant's responsibility to comply with the Rights in Water and Irrigation Act 1914 and ensure that no taking of groundwater occurs without the appropriate licences.

There are two registered Aboriginal Sites of Significance within the application area. It is the applicant's responsibility to comply with the Aboriginal Heritage Act 1972 and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Methodology

References:
HBJ Minerals Pty Ltd 2013b
GIS Databases:
- Aboriginal Sites of Signficance
- Native Title Claims - Determined by the Federal Court
- Native Title Claims - Filed at the Federal Court
- Native Title Claims - Registered with the NNTT
- RIWI Act areas

4. References

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Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.

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Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.

5. Glossary

Term	Meaning
DAFWA	Department of Agriculture and Food
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community