



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

| | |
|-------------------------------|---------------------------------|
| Purpose Permit number: | CPS 3851/1 |
| Permit Holder: | HBJ Minerals Pty Ltd |
| Duration of Permit: | 2 October 2010 – 2 October 2015 |

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 production and resource drilling.

2. Land on which clearing is to be done

Lot 15 on Deposited Plan 58833, Feysville
Lot 50 on Plan 226299, Feysville

3. Area of Clearing

The Permit Holder must not clear more than 180 hectares of native vegetation within the area shaded yellow on attached Plan 3851/1.

4. 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.

5. Compliance with Assessment Sequence and Management Procedures

Prior to clearing any native vegetation under conditions 1, 2 and 3 of this Permit, the Permit Holder must comply with the Assessment Sequence and the Management Procedures set out in Part II of this Permit.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

6. Avoid, minimise etc clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- avoid the clearing of native vegetation;
- minimise the amount of native vegetation to be cleared; and
- reduce the impact of clearing on any environmental value.

7. Fauna management

- (a) Prior to undertaking any clearing authorised under this Permit, the area(s) shall be inspected by a *fauna specialist* for the presence of *Leipoa ocellata* (Malleefowl) mounds.
- (b) Where *Leipoa ocellata* (Malleefowl) mounds are identified in relation to condition 8(a) of this Permit, the Permit Holder shall ensure no clearing occurs within 50m of the identified *Leipoa ocellata* (Malleefowl) mounds, unless approved by the CEO.

8. 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) Within 12 months following clearing authorised under this permit, *revegetate* and *rehabilitate* the areas that are no longer being required for the purpose of mineral production (excluding the open pit), the Permit Holder must by:
 - (i) laying the vegetative material and topsoil retained under condition 8(a) on the cleared area.
- (c) Within 24 months of laying vegetative material and topsoil on the cleared area in accordance with condition 8(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 8(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 to that of pre-clearing vegetation types in that area and ensuring only *local provenance* seeds and propagating material are used.

PART III - RECORD KEEPING AND REPORTING

9. Records must 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;
 - (ii) the date that the area was cleared; and
 - (iii) the size of the area cleared (in hectares).
- (b) In relation to fauna management pursuant to condition 7 of this Permit, 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.
- (c) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 8 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;
 - (ii) a description of the *revegetation* and *rehabilitation* activities undertaken;
 - (iii) the size of the area *revegetated* and *rehabilitated* (in hectares); and
 - (iv) the species composition, structure and density of *revegetation* and *rehabilitation*.

10. 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 9 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.
- (b) Prior to 2 July 2015, the Permit Holder must provide to the CEO a written report of records required under condition 9 of this Permit where these records have not already been provided under condition 10(a) of this Permit.

Definitions

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

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 is engaged by the Permit Holder for the purpose of providing environmental advice, 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;

fauna specialist means a person with training and specific work experience in fauna identification or faunal assemblage surveys of Western Australian fauna.

local provenance means native vegetation seeds and propagating material from natural sources within 50 kilometres of the area cleared.

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; and

revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.

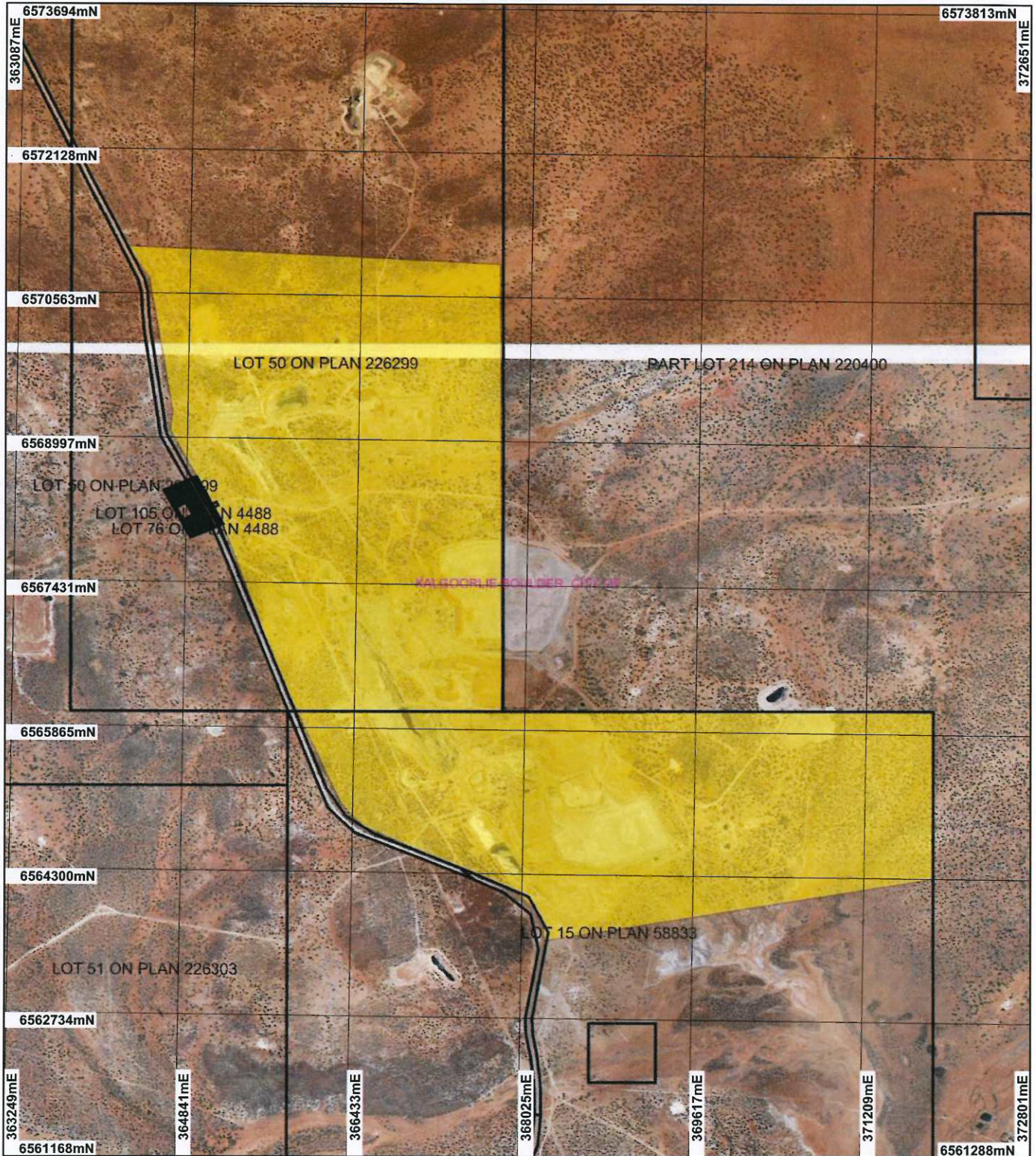


Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

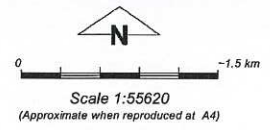
2 September 2010

Plan 3851/1



LEGEND

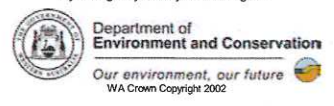
- | | |
|--|--|
| Kanowna 1.4m Orthomosaic - Landgate 2003 | Lake Lefroy 50cm Orthomosaic - Landgate 2005 |
| Clearing Instruments | Cadastre for labelling |
| <ul style="list-style-type: none"> Areas Approved to Clear Local Government Authorities | <ul style="list-style-type: none"> Cadastre for labelling |



Geocentric Datum Australia 1994
 Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

K Faulkner Date 2/9/10
 K Faulkner

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 acknowledged by the agency acronym in the legend.



* Project Data is denoted by asterisk. This data has not been quality assured. Please contact map author for details.

1. Application details

1.1. Permit application details

Permit application No.: 3851/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: HBJ Minerals Pty Ltd

1.3. Property details

Property: LOT 50 ON PLAN 226299 (FEYSVILLE 6431)
LOT 15 ON PLAN 58833 (FEYSVILLE 6431)

Local Government Area:

1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
|--------------------|-----------|--------------------|---------------------|
| 180 | | Mechanical Removal | Mineral Production |

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

| Vegetation Description | Clearing Description | Vegetation Condition | Comment |
|---|---|--|--|
| Beard vegetation types: 9: Medium woodland; coral gum (<i>E. torquata</i>) & Goldfields blackbutt (<i>E. lesouefi</i>). 221: Succulent steppe; saltbush. 468: Medium woodland; salmon gum & Goldfields blackbutt. (Hopkins et al 2001; Shepherd 2009) | The area under application is for clearing of 180 ha over ~2,500 ha project area for mineral production and resource drilling. The project area is within Lot 50 and Lot 15 located approximately 30 km south-east of the Kalgoorlie-Boulder town site. The vegetation within the areas in which clearing is to occur consists of seven broad vegetation groups being Basalt Ridges, Claypans, Drainage Lines, Calcrete, Plains, Sand and Red Clay Loams with ironstone pebbles (Niche Environmental Services 2010). | Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994) | A flora and vegetation survey identified the vegetation condition as ranging from degraded to very good (Niche Environmental Services 2010). Further, aerial photography shows the existing mining infrastructure and haul roads within the area under application (project area). |
| As above | As above | Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994) | As above |

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 vegetation under application is predominantly Eucalypt woodland typical of the goldfields region (HBJ Minerals Pty Ltd 2010). Further, the area under application has been subject to a history of extensive grazing activities and timber cutting (HBJ Minerals Pty Ltd 2010). Aerial imagery for the project area shows areas of disturbance from existing open pits and associated infrastructure.

A flora and vegetation assessment (Niche Environmental Services 2010) identified 142 flora species and no rare or priority flora species within the project area, and considered the vegetation to be in degraded to very good (Keighery, 1994) condition.

Given the high level of disturbance from historical and existing activities and the limited habitat value of the vegetation, it is not considered likely that the vegetation comprises a high level of biological diversity.

Methodology

References:

- HBJ Minerals Pty Ltd (2010)
 - Keighery (1994)
 - Niche Environmental Services (2010)
- GIS Databases:
- Kanowna 1.4m Orthomosaic - Landgate 2003

(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

Three fauna species of conservation significance has been recorded within 25 km radius of the area under application including Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*, Critical) located 22 km north-west, Chuditch (Vulnerable) located 14 km south, and Malleefowl (Vulnerable) located ~25 km west of the area under application.

The Arid Bronze Azure Butterfly, which is known only from a small area north east of Lake Douglas, is at risk from mining activities but as individuals have not been seen since 1993, it is considered to be extinct in the Goldfields (Williams and Williams, 2008).

There are recent records of Malleefowl in the area (25 to 50 km) that are relatively recent; therefore the proponent will be required to actively check for the presence of Malleefowl mounds before commencing any clearing operations.

To mitigate any impacts on Malleefowl, a fauna (Malleefowl) management condition will be imposed on the clearing permit.

The vegetation under application is predominantly Eucalypt woodland typical of the goldfields region (HBJ Minerals Pty Ltd 2010). Further, the area under application has been subject to a history of extensive grazing activities and timber cutting (HBJ Minerals Pty Ltd 2010). Aerial imagery for the project area shows areas of disturbance from existing open pits and associated infrastructure.

Given the level of disturbance from historical and current activities and the extent of native vegetation remaining in the surrounding areas, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:

- HBJ Minerals Pty Ltd (2010)
- Williams and Williams (2008)

GIS Databases:

- SAC Bio Datasets accessed 03/08/2010
- Kanowna 1.4m Orthomosaic - Landgate 2003
- Lake Lefroy 1.4m Orthomosaic - DLI 02

(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 the rare flora within the local area (25 km radius) with the closest known record being *Gastrolobium graniticum*, located ~39.7 km west of the area under application.

Gastrolobium graniticum is known to occur in close proximity to large granite extrusions; geological data shows the area under application to be located within the geology boundary mapped as Metamorphosed basic and ultrabasic volcanic and intrusive rock; whereas the records of *Gastrolobium graniticum* are located within the geology boundary mapped as Granite and Gneiss.

In addition, a flora and vegetation assessment (Niche Environmental Services 2010) identified 142 flora species and no rare or priority flora species within the project area.

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

Methodology Reference:

- Niche Environmental Services (2010)

GIS Databases:

- Geology, Statewide
- SAC Bio Datasets accessed 03/08/2010

(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 known records of a Threatened Ecological Community (TEC) within the local area (25 km radius). The nearest recorded TEC is Russell Range mixed thicket vegetation complex (Vulnerable), located ~310 km south-east of the area under application.

Given the distance to the nearest recorded TEC, it is not considered likely that the vegetation proposed to be cleared comprises the whole or part of or is necessary for the maintenance of a TEC.

Methodology GIS Database:
- SAC Bio Datasets accessed 03/08/2010

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments Proposal is not likely to be at variance to this Principle

The vegetation under application is mapped within Beard Vegetation types 9, 221 and 468, which have 99.7%, 100% and 100% of pre-European vegetation extent remaining within the Bioregion, respectively (Shepherd, 2009).

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). The vegetation types under application retain more than this 30% threshold level.

Given the high representation of the vegetation types identified with the area under application and the extent of vegetation in the Shire and bioregion, the vegetation under application is not considered to be in an extensively cleared area nor considered to be significant as a remnant.

| | Pre-European (ha) | Current extent (ha) | Remaining (%) | In secure tenure (%) |
|-----------------------------|----------------------|------------------------|------------------|-------------------------|
| IBRA Bioregion | | | | |
| Coolgardie (C) | 12,912,204 | 12,707,872 | 98.4 | |
| Shire of Kalgoorlie-Boulder | 9,542,969 | 9,542,941 | 100 | |
| Beard vegetation types* | | | | |
| 9 (within C Bioregion) | 240,442 | 239,834 | 99.7 | 7.7 |
| 221 (within C Bioregion) | 19,497 | 19,497 | 100 | 10.1 |
| 468 (within C Bioregion) | 583,357 | 583,357 | 100 | 22.5 |

* (Shepherd, 2009)

Methodology References:
- Commonwealth of Australia (2001)
- Shepherd (2009)
GIS Databases:
- Interim Biogeographic Regionalisation of Australia
- Pre-European Vegetation
- SAC Bio Datasets 04/11/2009

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments Proposal is at variance to this Principle

There are three minor drainage lines that traverse the area under application. A flora and vegetation assessment (Niche Environmental Services 2010) identified three distinct drainage line vegetation units and vegetation such as *Melaleuca uncinata* and *Atriplex lindleyi* ssp *inflata* growing in association with drainage lines. Therefore the proposed clearing is at variance to this Principle.

To mitigate the potential impact on the drainage lines, a revegetation management condition will be imposed on the clearing permit.

Methodology Reference:
- Niche Environmental Services (2010)
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 may be at variance to this Principle

The three soil units identified within the area under application are described by Northcote et al 1960-68 as:

BB5 (central to northern section) - covers ~70% of the project area, the landscape is described as rocky ranges and hills of greenstones. The chief soils seem to be shallow calcareous loamy soils with shallow brown and grey-brown calcareous earths.

Mx43 (central southern section) - covers ~17% of the project area, the landscape is described as gently undulating valley plains and pediments with some outcrop of basic rock. The chief soils are alkaline red earths with limestone at shallow depth.

AC1 (east southern section) - covers ~13% of the project area, the landscape is described as gently sloping to gently undulating plateau areas, or uplands, on granites, gneisses, and allied rocks. The chief soils are yellow earthy sands and sandy yellow earths on depositional sites, and ironstone gravels.

These soils outlined above are susceptible to wind erosion and soil erosion, particularly in drainage tracts, and without appropriate management strategies the proposed clearing of 180 ha may result in appreciable land degradation. Therefore, clearing proposal may be at variance to this Principle.

To mitigate any impacts from the proposed clearing a revegetation management condition will be imposed on the clearing permit.

Methodology Reference:
- Northcote et al (1960-68)
GIS Database:
- 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 is not likely to be at variance to this Principle**
There are no conservation reserves within or adjacent to the area under application with the nearest reserve, being DEC managed land being Kambalda Nature Reserve, located ~10 km south of the area under application.

The area under application has been subject to a history of extensive grazing activities and timber cutting (HBJ Minerals Pty Ltd 2010). Aerial imagery for the project area shows areas of disturbance from existing open pits and associated infrastructure.

Given the high level of disturbance from historical and existing activities and the distance to the DEC managed land, the clearing as proposed is not likely to have significant impact on adjacent or nearby conservation areas.

Methodology Reference:
- HBJ Minerals Pty Ltd (2010)
GIS Databases:
- DEC Tenure
- Kanowna 1.4m Orthomosaic - Landgate 2003
- Lake Lefroy 1.4m Orthomosaic - DLI 02

(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**
Three soil units identified within the area under application are described as shallow calcareous loamy soils with shallow brown and grey-brown calcareous earths in the central to northern section; alkaline red earths with limestone at shallow depth in the central southern section; yellow earthy sands and sandy yellow earths on depositional sites, and ironstone gravels in the east southern section (Northcote et al 1960-68).

There are three minor drainage lines that traverse the area under application. The proposed clearing may result in water erosion particularly in drainage tracts. The drainage lines discharge into saline wetlands (Lake Lefroy) located approximately 15 km south-east of the project area. Water erosion of the loamy soils and soils with ironstone gravels may increase sediment loads within water runoff. Given the distance to and the expanse of the saline wetlands, it is considered the proposed clearing is not likely to result in the deterioration of water quality of the saline wetlands.

Methodology Reference:
- Northcote et al (1960-68)
GIS Databases:
- Geodata, Lakes
- Hydrography, linear
- Soils, Statewide

(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

With an average annual rainfall of 250 mm and an annual evaporation rate of 2,600 mm there is little surface flow during normal seasonal rains. Given the area under application occurs on a relatively flat landscape and there is little surface flow, the proposed clearing is not likely to cause or increase the incidence or intensity of flooding.

Methodology GIS Databases:
- Evaporation Isoleths
- Isohyets
- Topographic Contours, Statewide

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

Comments

The area under application is within the Proclaimed Groundwater Area of Goldfields. Therefore any abstraction of groundwater would require a licence. HBJ Minerals Pty Ltd (2010a) has advised that they have licences for the abstraction of groundwater and to allow dewatering for mining purposes.

HBJ Minerals Pty Ltd (2009a) has provided information that a Works Approval is not necessary as the mined ore that will be mined will be processed at Jubilee.

Lot 50 is freehold land owned by Franco Nevada Australia Pty Ltd; the land is leased to HBJ Minerals Pty Ltd for mining and exploration purposes. Lot 50 is zoned Rural under the Local Town Planning Scheme.

Lot 15 (formerly known as Lot 48) is freehold land owned by HBJ Minerals Pty Ltd. Lot 50 is zoned Rural under the Local Town Planning Scheme.

Methodology Reference:
- HBJ Minerals Pty Ltd (2010a)
GIS Databases:
- Cadastre
- RIWI Act, Groundwater Areas
- Town Planning Scheme Zones

4. References

- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- HBJ Minerals Pty Ltd (2010) Avoca Resources - HBJ Minerals Pty Ltd: Purpose Permit Application CPS 3851/1, 20 July 2010. DEC Ref A318927
- HBJ Minerals Pty Ltd (2010a) HBJ Minerals Pty Ltd: Additional information (Email). TRIM Ref A324243, A324244, A324245 and A324246.
- Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALMScience after J. S. Beard, late 1960's to early 1980's Vegetation Survey of Western Australia, UWA Press.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Niche Environmental Services (2010) Assessment of the Flora and Vegetation at the Location 48 Project Area, Avoca, HBJ Minerals Pty Ltd South Kalgoorlie Operations In Avoca Resources - HBJ Minerals Pty Ltd: Purpose Permit Application CPS 3851/1, 20 July 2010. DEC Ref A318927
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.
- Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.
- Williams, M.R. and Williams, A.A. (2008). Threat of habitat clearing to the Arid Bronze Azure butterfly (*Ogyris subterrestris petrina*) population bordering Barbalin Nature Reserve. Department of Environment and Conservation, Perth. Unpublished Report.

5. Glossary

| Term | Meaning |
|-------|--|
| BCS | Biodiversity Coordination Section of DEC |
| CALM | Department of Conservation and Land Management (now BCS) |
| DAFWA | Department of Agriculture and Food |
| DEC | Department of Environment and Conservation |
| DEP | Department of Environmental Protection (now DEC) |
| DoE | Department of Environment |
| DoIR | Department of Industry and Resources |
| DRF | Declared Rare Flora |
| EPP | Environmental Protection Policy |
| GIS | Geographical Information System |
| ha | Hectare (10,000 square metres) |
| TEC | Threatened Ecological Community |
| WRC | Water and Rivers Commission (now DEC) |