



1. Application details

1.1. Permit application details

Permit application No.: 1155/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: South Kal Mines Pty Ltd

1.3. Property details

Property: LOT 48 ON PLAN 226304 (FEYSVILLE 6431)
LOT 94 ON PLAN 220400 (LONDONDERRY 6429)
LOT 51 ON PLAN 226303 (FEYSVILLE 6431)
PART LOT 214 ON PLAN 220400 (FEYSVILLE 6431)

LOT 1 ON PLAN 193639 (KAMBALDA WEST 6442)
CROWN RESERVE 2954 (FEYSVILLE 6431)
LOT 240 ON PLAN 193609 (FEYSVILLE 6431)
LOT 241 ON PLAN 257131 (FEYSVILLE 6431)
City Of Kalgoorlie-Boulder & Shire Of Coolgardie

Local Government Area:
Colloquial name:

1.4. Application

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

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 (E. torquata) & Goldfields blackbutt (E. lesouefi).	The area under application is for clearing of 500 ha over 10 years for exploration (400 ha) and prospecting (100 ha) within a 16,740 ha project area. The area is located approximately 40km south of the Kalgoorlie-Boulder town site.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The area under application has been subject to a history of extensive timber cutting for firewood and livestock grazing (MBS Environmental 2006). Further, aerial photography for the area shows the existing mining infrastructure, public roads and a railway line within the area under application (project area).
Beard vegetation association 221: Succulent steppe; saltbush.			
Beard vegetation association 468: Medium woodland; salmon gum & Goldfields blackbutt. (Hopkins et al. 2001; Shepherd et al. 2001).	The vegetation of the area in which clearing is to occur consists of 19 different vegetation habitat types (MBS Environmental 2006). The area is predominantly Eucalypt woodlands on a variety of soils, Casuarina pauper on calcareous hardpan soils and an understorey that includes Acacia, Senna, Atriplex, Olearia and Eremophila species (MBS Environmental 2006).		

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 area applied to be cleared is 500ha over 10 years within a 16,740ha project area. The vegetation under application is predominantly common semi arid-arid species typical of the Goldfields woodland vegetation (MBS Environmental 2006).

Further, the area under application has been subject to a history of extensive grazing activities and timber cutting for firewood with the vegetation to be cleared being predominantly regrowth. The area has also been previously disturbed as it contains existing open pits, access roads, public roads and a railway line (MBS Environmental 2006).

Given the high level of disturbance from historical and existing activities, it is considered unlikely the area under application comprises a high level of biological diversity.

Methodology MBS Environmental (2006) (TRIM Ref ED1729)
GIS Database:
- Lake Lefroy 1.4m Orthomosaic - DLI 02

(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 recent clearing proposal (CPS 935/1) within and to the north of the area under application was assessed and granted. The assessment included Biodiversity Coordination Section (BCS), DEC (2005) advice regarding fauna species occurring in the area.

BCS (2005) advised that the following species are known to occur within a 50km radius of the proposed clearing:

- Chuditch, *Dasyurus geoffroi*, Vulnerable (State) WC Act and (Federal) EPBC Act;
- Malleefowl, *Leipoa ocellata*, Vulnerable (State) WC Act and (Federal) EPBC Act;
- Peregrine Falcon, *Falco peregrinus*, Specially Protected (State) WC Act and (Federal) EPBC Act;
- *Ogyris subterrestris petrina* (P1) This butterfly is known only from a small area north east of Lake Douglas;
- Crested Bellbird (southern), *Oreoica gutturalis gutturalis* (P4);
- Shy Heathwren (western ssp), *Hylacola cauta whillocki* (P4) (historic record);
- White-browed Babbler (western wheatbelt), *Pomatostomus superciliosus ashbyi* (P4).

BCS also advised that:

- The Chuditch prefers habitat that provides more cover than is likely to be found in the notified area.
- Records of Malleefowl in the area are relatively recent therefore the proponent should actively check for the presence of Malleefowl mounds before commencing any clearing operations.
- Bird species such as Peregrine Falcon, White-browed Babbler, Crested Bellbird (Southern) and Malleefowl may utilise the notified area but the habitat present is unlikely to be 'significant' for these species.
- The threatened species of butterfly *Ogyris subterrestris petrina* is at risk from mining activities but as individuals have not been seen since 1993 it is difficult to speculate on the probability of the proposed clearing affecting the habitat and thus conservation status of this taxon.

A report submitted by MBS Environmental (2006) states that there are no ranges or caves in the study area and that the primary fauna habitat is low hills that may support a range of common reptiles. The report (MBS Environmental 2006) also states that all efforts will be taken to minimise clearing and to progressively rehabilitate so that habitats and fauna of conservation significance will not be impacted upon. Management strategies to be adopted (MBS Environmental 2006) include:

- Utilising existing tracks, firebreaks, fence lines for access where possible,
- Locating tracks so as to avoid large trees and shrubs and their root zones,
- Weed management programme,
- Retain trees (especially those with hollows) for bird, bat and reptile habitat where possible,
- Stockpiling vegetation to be respread to provide habitat for fauna, and
- Feral cat trapping.

Given the above, it is recommended the proponent should actively survey for the presence of malleefowl mounds before commencing any clearing and that trees (especially those with hollows) should be retained where possible. Therefore, the area applied to be cleared shall be walked, prior to clearing, to determine the presence of malleefowl (*Leipoa ocellata*) mounds. Further, clearing shall not occur within 50 m of any malleefowl mounds identified in the survey.

Methodology Biodiversity Coordination Section, DEC (2005) (TRIM Ref HD26053)
MBS Environmental (2006) (TRIM Ref ED1729)

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments Proposal may be at variance to this Principle

There are no known records of Declared Rare Flora (DRF) within the local area (50km radius). The nearest recorded DRF is located approximately 60km west south-west of the area under application.

There are no records of Priority species within the area under application, with the following Priority species known to occur in the local area (50km radius) with the closest being 10km south-west:

- Acacia websteri (P1)
- Eremophila praecox (P1)
- Pityrodia sp. Yilgarn (A.P. Brown 2679) (P3)

A flora survey conducted in 2003/04 identified no DRF and three Priority species within the area under application (MBS Environmental 2006). These species included Eremophila praecox (P1), Melaleuca coccinea (P3) and Allocasuarina eriochlamys ssp. grossa (P3) (MBS Environmental 2006). The vegetation habitat types containing the observed priority flora have been described as:

- Rocky Acacia Shrublands on outcropping gabbro, granite or schist (Habitat Type 1.4);
- Rocky Acacia - Mallee Shrublands on sands over gabbro, granite or schist (Habitat Type 1.5); and
- Calcrete Platform Shrublands with Casuarina pauper (Habitat Type 4.10) (MBS Environmental 2006).

The three vegetation habitat types listed above occur within the area under application (MBS Environmental 2006) and, as such, a condition to ensure that these habitat types are protected has been imposed on this clearing permit.

Methodology MBS Environmental (2006) (TRIM Ref ED1729)
GIS database:
- Declared Rare and Priority Flora List - CALM 01/07/05

(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 Threatened Ecological Communities (TECs) within the local area (100km radius). The nearest recorded TEC located approximately 105km south-east. It is therefore unlikely that the vegetation proposed to be cleared comprises the whole or part of or is necessary for the maintenance of a TEC.

Methodology GIS Databases:
- Threatened Ecological Community Database - CALM 12/04/05
- Environmentally Sensitive Areas - DOE 08/03/05

(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 State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents the clearance of ecological communities with an extent below 30% of that present Pre-European settlement (Department of Natural Resources and Environment 2002).

The Vegetation Complexes in the area under application are above the recommended minimum of 30% representation.

	Pre-European (ha)*	Current extent (ha)*	Remaining (%)*	Conservation status**	In reserves/CALM managed land
IBRA Bioregions					
- Coolgardie	12 917 718	12 719 084	98.5	Least Concern	
Shire of Coolgardie	No information available				
City of Kalgoorlie/Boulder	No information available				
Vegetation type:					
Beard: Unit 9	250 894	250 183	99.7	Least Concern	3.0%
Beard: Unit 221	65 168	61 783	94.8	Least Concern	5.7%
Beard: Unit 468	476 124	476 120	100.0	Least Concern	0.2%

* (Shepherd et al. 2001)

** (Department of Natural Resources and Environment 2002)

Given there is 98.5% of remnant vegetation remaining within the Region and there is 99.7% (Beard 9), 94.8% (Beard 221) and 100% (Beard 468) (Shepherd et al. 2001) of native vegetation remaining, the vegetation proposed

to be cleared is not significant as a remnant of native vegetation in the surrounding area.

It is noted that the vegetation types are not well represented within reserves.

Methodology Department of Natural Resources and Environment (2002)
Hopkins et al. (2001)
Shepherd et al. (2001)
JANIS Forests Criteria (1997)
GIS Databases:
- Pre-European Vegetation - DA 01/01
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00

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

Comments **Proposal is not likely to be at variance to this Principle**
There are numerous minor non-perennial watercourses located throughout the area under application. Therefore, it is considered likely that some of the vegetation under application is associated with watercourses.

The proponent has advised in their application that the area will be revegetated once mining activities cease, and conditions have been imposed to require this. Therefore the proposed clearing is not likely to be at variance to this principle.

Methodology GIS Database:
- Hydrography, linear - DOE 01/02/04

(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**
Eight land systems have been identified within the area under application (DAFWA 2007). These land systems include:

- Gumland land system is described as extensive pedepains supporting eucalypt woodlands with halophytic and non-halophytic shrub understoreys. Provided disturbance of the alluvial plains/drainage tracts is avoided, soil erosion is unlikely to occur (DAFWA 2007).
- Moriarty land system is described as low greenstone rises supporting eucalypt woodland over chenopod understorey. The land system probably comprises about 20% of the CPS area. Clearing and soil disturbance in the narrow drainage tract land units is likely to cause water erosion (DAFWA 2007).
- Gundockerta land system occurs in the south east of the CPS area. The extensive undulating stony plains support salt bush and blue bush. The calcareous loams and red deep duplex soils are prone to erosion if cleared or lose their protective stony mantles (DAFWA 2007).
- Red Hill land system is described as basalt hills and ridges supporting acacia shrublands and patchy eucalypt woodland with mainly non halophytic understorey. A large tract of the land system occurs in the middle of the CPS area. This land system is not generally prone to soil erosion. There is some risk associated with clearing and disturbance of the red loamy earths or red duplex soils in the valley floors (DAFWA 2007).
- Lefroy land system is likely to be areas of saline plain and alluvial plain land units. These level plains are likely to have red brown non calcareous clays and red deep duplex soils and are subject to sheet flow and are not particularly prone to soil erosion. Several areas of this land system occur within the CPS area (DAFWA 2007).
- Sedgman, Graves and Bunyip land systems occur within the CPS area, but are minor areas. These systems are unlikely to be problematic from a land degradation perspective provided caution is increased in the vicinity of the drainage lines that traverse these areas (DAFWA 2007).

DAFWA (2007) advised that apart from an area of Gundockerta undulating stony plains and land associated with valley floors and drainage lines, land degradation is unlikely to occur as a result of the proposed land clearing (DAFWA 2007).

Management actions to be undertaken include utilising existing tracks and creek crossings and the rehabilitation of disturbed areas once mining activities cease (MBS Environmental 2006), which will assist in the avoidance of long-term land degradation.

To mitigate any impacts from the proposed clearing a condition for revegetating cleared areas has been imposed for this permit.

Methodology DAFWA (2007) (TRIM Ref ED1658)
MBS Environmental (2006) (TRIM Ref ED1729)

(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 DEC managed lands within the area under application and ten DEC managed Lands within a 50km radius. The nearest DEC managed lands are Kambalda Nature Reserves, adjacent to the proposed clearing in the south; Kambalda Timber Reserve, approximately 7km south; Yallari Timber Reserve, approximately 15km west; and Karamindie Forest, approximately 15km west north-west.

The area under application has been subject to a history of extensive grazing activities and timber cutting for firewood with the vegetation being predominantly regrowth. The area has also been previously disturbed as it contains existing tracks, open pits, public roads, railway and a gas pipeline (MBS Environmental 2006).

The area under application may provide an environmental corridor for fauna between reserves. However, given the area to be cleared is for 500ha over 10 years within a 16,740ha project area and the high level of disturbance from historical and existing activities, the clearing as proposed is unlikely to have significant impact on the local conservation values.

Methodology MBS Environmental (2006) (TRIM Ref ED1729)
GIS database:
- CALM Managed Lands and Water - CALM 01/07/05

(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

With an average annual rainfall of 250mm and an annual evaporation rate of 2,600mm there is likely to be little surface flow during normal seasonal rains. During major rainfall events there would be significant surface flow for which the Bandy Creek Catchment of the Salt Lake Basin becomes a medium for the collection and transportation of the major flows.

With high annual evaporation rates and low annual rainfall there is little recharge into regional groundwater table. At this site the groundwater salinity level is between 14,000 mg/l and 35,000 mg/l, which is considered to be high saline to hyper saline.

Given the above, the clearing of vegetation under application (500ha over 10 years within a 16,740ha project area) is unlikely to cause deterioration in the quality of surface or underground water.

Methodology MBS Environmental (2006) (TRIM Ref ED1729)
GIS Databases:
- Evaporation Isopleths - BOM 09/98
- Isohyets - BOM 09/98
- Groundwater Salinity, Statewide - 22/02/00
- Hydrographic Catchments, Catchments - DOE 23/03/05

(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 at variance to this Principle

With an average annual rainfall of 250mm and an annual evaporation rate of 2,600mm 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 Isopleths - BOM 09/98
- Isohyets - BOM 09/98
- Hydrography, linear - DOE 01/02/04
- Topographic Contours, Statewide - DOLA 12/09/02

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.

Mineral exploration is not a prescribed premise as defined under Environmental Protection Regulations 1987 Schedule 1 - Prescribed premises.

It is the proponent's responsibility to determine whether any Works Approval, or any other licences or approvals are required for future proposed works.

There are eleven Aboriginal Sites of Significance listed within the areas under application, the applicant will be advised of their obligations under the Aboriginal Heritage Act 1972.

There are two native title claims over the area under application. These claims (WC98/027 and WC99/029) have been registered with the National Native Title Tribunal. However, the mining tenements 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.

Methodology GIS databases:

- Aboriginal Sites of Significance - DIA 28/02/03
- Native Title Claims - DLI 7/11/05
- RIWI Act, Groundwater Areas - WRC 13/06/00
- RIWI Act, Surface Water Areas - WRC 18/10/02

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Mineral Exploration	Mechanical Removal	500	The clearing application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986. The clearing as proposed may be at variance to Principles (b), (c) and (g), and not likely to be at variance to the remaining Principles.

The CEO has decided that in view of the cumulative impacts of clearing and the lengthy period of time requested for this permit, he would approve clearing of 250 ha over a five year period at this time, rather than 500 ha over a ten year period, with conditions, including revegetation and reporting conditions.

5. References

Biodiversity Coordination Section, DEC (2005) Clearing Assessment Unit's biodiversity advice for land clearing application. Advice to Director General, Department of Environment and Conservation (DEC), Western Australia. TRIM Ref HD26053

DAFWA (2007) Land degradation advice. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. TRIM Ref ED1658

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.

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.

MBS Environmental (2006) Purpose Permit Application, Wildcatters Project area and Hampton Locations 48 and 51: Assessment of Clearing Principles, February 2006, Prepared for South Kal Mines Pty Ltd, Martinick Bosch Sell Pty Ltd, Western Australia. TRIM Ref ED1729

Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.

6. 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)