Government of **Western Australia**
Department of **Mines and Petroleum**

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4102/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Birla Nifty Pty Ltd**

1.3. Property details

Property: *Western Mining Corporation Limited (Throssell Range) Agreement Act 1985*, Mineral Lease 271SA (AM 70/271)
Local Government Area: Shire of East Pilbara
Colloquial name: Nifty Copper Operation

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 3 March 2011

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 associations have been mapped at a 1:250,000 scale for the whole of Western Australia and are useful to look at vegetation in a regional context. The following Beard vegetation association has been mapped within the application area (GIS Database): 134: Mosaic: Hummock grasslands, open low tree steppe; desert bloodwood and feathertop spinifex (on) sandhills/ Hummock grasslands, shrub steppe; mixed shrubs over spinifex between sandhills. MBS Environmental Pty Ltd (MBS) has extensively surveyed the entire minesite including the areas proposed for clearing (MBS, 2005). The Birla Nifty Pty Ltd (Birla Nifty) minesite is predominantly vegetated by hummock grasslands dominated by *Triodia basedowii* in swales and *Triodia schinzii* on dunes. The sparse mid-storey is dominated by *Eucalyptus pachyphylla* and a number of Grevillea species (*Grevillea stenobotrya, G. wickhamii* and *G. eriostachya*). The shrub *Melaleuca lasiandra* dominates areas prone to inundation. The upper storey is very sparse and consists primarily of *Corymbia chippendalei* (sand-dune Bloodwood) and *Eucalyptus victrix* (MBS, 2005).	Birla Nifty has applied to clear up to 84.5 hectares of native vegetation. The application area consists of four sections covering approximately 123 hectares. The application areas are located approximately 150 kilometres east of Nullagine (GIS Database). The purpose of the clearing permit application is to conduct mineral production. The areas for clearing are located within an already developed mine, for extension of an airstrip, expansion of a waste rock dump and areas for drilling and laydown.	Pristine: No obvious signs of disturbance (Keighery, 1994).	The vegetation condition is based on the flora and fauna surveys carried out by MBS between 23 and 28 October 2005.

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 areas fall within the southern section of the Mackay sub-region of the Great Sandy Desert Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The vegetation within the

southern section of this sub-region is characterised as having mainly tree steppe grading to shrub steppe; comprising open hummock grassland of *Triodia pungens* and *Triodia schinzii* with scattered trees of *Owenia reticulata* and bloodwood (*Corymbia* spp.), and shrubs of *Acacia* spp., *Grevillea wickhamii* and *G. refracta*, on Quaternary red longitudinal sand dune fields overlying Jurassic and Cretaceous sandstones of the Canning and Armadeus Basins. *Allocasuarina decaisneana* (Desert Oak) occurs in the south and east of the region. Gently undulating lateritised uplands support shrub steppe such as *Acacia pachycarpa* shrublands over *Triodia pungens* hummock grass. Calcrete and evaporite surfaces are associated with occluded palaeo-drainage systems that traverse the desert; these include extensive salt lake chains with samphire low shrublands, and *Melaleuca glomerata - M. Lasiandra* shrublands (CALM, 2002).

Level 1 flora and fauna surveys were conducted by MBS Environmental Pty Ltd (MBS) in October, 2005. This involved both desktop studies and site surveys of the mine site which included the application areas (MBS, 2006).

During the flora and vegetation survey *Goodenia hartiana*, a Priority 2 species was recorded near the mine site (MBS, 2006). The application areas will be surveyed for this priority species prior to clearing and avoided where possible. If *Goodenia hartiana* is found and cannot be avoided, then the location and number of plants will be recorded. MBS (2005) reported that advice from the Department of Environment (DEC) stated that Birla is required to liaise with the DEC for appropriate action. Potential impacts to *Goodenia hartiana* as a result of the proposed clearing may be minimised by the implementation of a flora management condition.

The flora and vegetation survey recorded two weed species, Kapok (*Aerva javanica*) and Buffel Grass (*Cenchrus ciliaris*) (MBS, 2005). The presence of weeds has the potential to reduce the biodiversity of an area, and care should be taken to ensure that weeds are not spread as a result of the proposed clearing. Potential impacts may be minimised by the implementation of a weed management condition.

From a fauna perspective, four threatened fauna taxa listed as either 'Vulnerable' or 'Endangered' under State and Federal legislation have been recorded in the vicinity of the proposed clearing areas (MBS, 2005). The flora and fauna surveys have shown that the areas applied for clearing do not appear to represent areas of outstanding biodiversity and contain commonly occurring vegetation communities that are well represented in the surrounding area (MBS, 2006).

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

Methodology CALM (2002)
MBS (2005)
MBS (2006)

(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**

Three main fauna habitats have been described on the Birla Nifty mining lease: sand dunes; swales between dunes and plains; and stony or rocky sites (MBS, 2006).

Four species of conservation significance have been identified to exist in the area: Mulgara (*Dasycercus cristicauda*), Bilby (*Macrotis lagotis*), Great Desert Skink (*Egernia kintorei*) and the Northern Marsupial Mole (*Notoryctes caurinus*) (MBS, 2006).

The Mulgara and the Bilby are quite mobile so there is potential that they may forage within the application area (MBS, 2005). MBS (2005) reported that the areas proposed for clearing have been selected to avoid prime habitats for the Mulgara and the Bilby. Birla Nifty will therefore undertake targeted fauna surveys for these species within the proposed clearing area prior to clearing and if found prepare management plans in consultation with the Department of Environment and Conservation.

Threats to the Great Desert Skink include introduced predator species and wildfires (McAlpin, 2001). Suitable habitat is very widespread in the Western Desert region and within WA, SA and the NT, and strongholds for populations appear to be the Tanami Desert, Uluru and the Gibson Desert (McAlpin, 2001). Habitat for the Great Desert Skink is therefore widespread in the area and the proposed clearing is not likely to pose a threat to this species.

A Marsupial Mole Management Plan has been developed and this will be adhered to during all operations which will ensure that impacts to this species and its habitat are minimised (MBS, 2005). Potential impacts to significant fauna habitat as a result of the proposed clearing may be minimised by the implementation of a fauna management condition.

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

Methodology MBS (2005)
MBS (2006)

McAlpin (2001)

(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

A desktop review and survey was conducted between 23 and 28 October 2005 by MBS (2006) to determine if any Declared Rare Flora (DRF) occur within the application areas. No records of DRF have been reported within the Great Sandy Desert (CALM, 2002; GIS Database) and none were recorded during the flora and vegetation survey (MBS, 2006).

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

Methodology

CALM (2002)
MBS (2006)
GIS Database:
-Declared Rare and Priority Flora List

(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

No Threatened Ecological Communities (TECs) are known to occur within the Mackay subregion (CALM, 2002; GIS Database). In addition no TECs were identified during the survey in, or near, the area proposed for clearing (MBS, 2006; GIS Database).

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

Methodology

CALM (2002)
MBS (2006)
GIS Database:
-IBRA WA (Regions - Sub Regions)
-Threatened Ecological Sites Buffered

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

Comments

Proposal is not at variance to this Principle

The application areas fall within the Great Sandy Desert Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database).

Shepherd (2009) reports that approximately 100% of the Pre-European vegetation remains within the bioregion (see table). The vegetation of the application areas has been broadly mapped as Beard vegetation association 134: Mosaic: Hummock grasslands, open low tree steppe; desert bloodwood and feathertop spinifex on sandhills / Hummock grasslands, shrub steppe; mixed shrubs over spinifex between sandhills (GIS Database).

This vegetation association remains at approximately 100% at the state and bioregion levels (Shepherd, 2009) Therefore, the area proposed to be cleared does not represent a significant remnant of native vegetation within an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves (and post clearing %)
IBRA Bioregion - Great Sandy Desert	29,538,794	29,537,847	100	Least Concern	2.67 (2.67)
Beard vegetation associations - State					
134	26,026,864	26,024,509	~99.99`	Least Concern	3.34 (3.34)
Beard vegetation associations - Bioregion					
134	13,595,887	13,595,356	~100	Least Concern	4.97 (4.97)

* Shepherd (2009)
** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd (2009)
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 is not likely to be at variance to this Principle**
There are no wetlands or natural watercourses within the application areas (GIS Database).

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

Methodology GIS Database:
- Hydrography, linear
- Ramsar Wetlands
- Rivers

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

Comments **Proposal is not likely to be at variance to this Principle**
Sandy soils in the swales and on dunes are prone to wind erosion if cleared and exposed for a long period of time (DAWA, 2005). The proposed clearing for waste rock dumps and airstrip extension is unlikely to cause significant soil erosion if these areas are exposed to erosion for only a short period of time.

Wind and water erosion will be managed by progressive rehabilitation of the cleared areas as well as designing any clearing and earthworks to minimise erosion (MBS, 2005).

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

Methodology DAWA (2005)
MBS (2005)

(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 areas within the vicinity of the application area (GIS Database). The nearest conservation area is the Karlamilyi National Park which is located approximately 74 kilometres south of the application area.

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

Methodology GIS Database:
- DEC Tenure
- Proposed National Parks, FMP

(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 areas are not located within a Public Drinking Water Source Area (GIS Database). There are no permanent water bodies, watercourses or ephemeral drainage lines within the application areas (GIS Database).

The groundwater salinity within the application areas is between 1000 - 3000 milligrams per litre of Total Dissolved Solids (GIS Database). Groundwater and surface water quality is monitored via an ongoing program which was started in 1995. The impacts of any activities associated with the operation, including the removal of vegetation will be monitored as part of the conditions of mining. Groundwater abstraction and monitoring are undertaken in accordance with a Groundwater Operating Strategy (MBS, 2005).

The clearing of 84.5 hectares of vegetation within the application areas is not likely to have a significant impact on the quality of the groundwater or surface water in the local area.

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

Methodology MBS (2005)
GIS Database:
- Groundwater Salinity, Statewide
- Hydrography, Linear
- Public Drinking Water Source Areas (PDWSA)

(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

There are no natural waterways in the application areas (GIS Database). This region has an average annual rainfall of approximately 335 millimetres (BOM, 2011), and the average annual evaporation rate is approximately 3,800 millimetres (GIS Database). Low lying swales are subject to occasional natural flooding from extreme cyclonic events (MBS, 2005). The removal of vegetation is not expected to exacerbate the incidence of flooding.

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

Methodology BOM (2011)
MBS (2005)
GIS Database:
- Hydrography linear

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

Comments

There are is one Native Title Claim (WC96/78) over the areas under application (GIS Database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant groups. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application areas (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal sites of significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment and Conservation and the Department of Water, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

The initial Birla Nifty clearing permit (CPS 601/1) for 124.1 hectares expired in November 2010 and was for the extension of an airstrip, expansion of a waste rock dump and areas for drilling and laydown. During this period, 39.6 hectares was cleared leaving a balance of 84.5 hectares which was applied for in this clearing application.

The clearing permit application was advertised on 10 January 2011 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received.

Methodology GIS Database:
- Native Title Determined
- Native Title Federal
- Native Title NNTT
- Aboriginal Sites of Significance

4. References

BOM (2011) Bureau of Meteorology Climate Statistics for Australian Locations, Summary Statistics for Nullagine, Western Australia. Commonwealth Government of Australia. Available online: http://www.bom.gov.au/climate/averages/tables/cw_004027.shtml

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.

DAWA (2005) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture Western Australia. Advice received for Clearing permit 601/1 Birla Nifty Pty Ltd, dated 14 October 2005.

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.

Keighery (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA

(Inc). Nedlands, Western Australia.
MBS (2005) Native Vegetation Management Plan. Prepared for Birla Nifty Pty Ltd), March 2005. Prepared by MBS Environmental Pty Ltd.
MBS (2006) Vegetation Survey and Targeted Rare Flora and Fauna Search of the Waste Rock Dump, Airstrip and heap Leach Pad Extension Areas, Nifty Copper Operations, Western Australia. Prepared for Birla Nifty Pty Ltd, January 2006, by MBS Environmental Pty Ltd.
Mc Alpin S. (2001) The Recovery Plan for the Great Desert Skink (Egernia kintorei) 2001-2011. Report prepared by Steve Mc Alpin on behalf of the Arid Lands Environment Centre, published by the Department of Environment and Heritage.
Shepherd (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.

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), Western Australia
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DoE	Department of Environment (now DEC), Western Australia
DoIR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
EP Act	*Environmental Protection Act 1986*, Western Australia
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
RIWI Act	*Rights in Water and Irrigation Act 1914*, Western Australia
s.17	Section 17 of the *Environment Protection Act 1986*, Western Australia
TEC	Threatened Ecological Community

Definitions:

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005*. Department of Conservation and Land Management, Como, Western Australia} :-

P1	**Priority One - Poorly Known taxa**: taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
P2	**Priority Two - Poorly Known taxa**: taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
P3	**Priority Three - Poorly Known taxa**: taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
P4	**Priority Four – Rare taxa**: taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
R	**Declared Rare Flora – Extant taxa** *(= Threatened Flora = Endangered + Vulnerable)*: taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
X	**Declared Rare Flora - Presumed Extinct taxa**: taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [*Wildlife Conservation Act 1950*] :-

Schedule 1 **Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.

Schedule 2 **Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.

Schedule 3 **Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.

Schedule 4 **Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). *Priority Codes for Fauna*. Department of Conservation and Land Management, Como, Western Australia} :-

P1 **Priority One: Taxa with few, poorly known populations on threatened lands**: Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

P2 **Priority Two: Taxa with few, poorly known populations on conservation lands**: Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

P3 **Priority Three: Taxa with several, poorly known populations, some on conservation lands**: Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

P4 **Priority Four: Taxa in need of monitoring**: Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.

P5 **Priority Five: Taxa in need of monitoring**: Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of threatened species (*Environment Protection and Biodiversity Conservation Act 1999)*

EX **Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.

EX(W) **Extinct in the wild:** A native species which:
(a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
(b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.

CR **Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.

EN **Endangered:** A native species which:
(a) is not critically endangered; and
(b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.

VU **Vulnerable:** A native species which:
(a) is not critically endangered or endangered; and
(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

CD **Conservation Dependent:** A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.