



1. Application details

1.1. Permit application details

Permit application No.: 1750/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Australian Nickel Mines NL

1.3. Property details

Property: M15/101
Local Government Area: Shire Of Coolgardie
Colloquial name: 132 North Open Pit Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
30		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

Beard vegetation associations have been mapped at a 1:250,000 scale for the whole of Western Australia. One Beard vegetation association, 9, is located within the area proposed to be cleared and is described as:

Medium woodland; coral gum (*E. torquata*) and Goldfields blackbutt (*E. lesouefii*).

The vegetation within the proposed clearing area was mapped at a scale of 1:5,000 by Matiske in 2006. The following vegetation associations were described:

E11: Low woodland of *Eucalyptus lesouefii* over *Melaleuca sheathiana* over *Eremophila psilocalyx*, *Acacia burkittii*, *Dodonaea lobulata* and *Acacia quadrimarginea* over *Trymalium myrtillus* subsp. *myrtillus*, *Eremophila caerulea* subsp. *caerulea* (ms), *Acacia erinacea* and *Olearia muelleri*. This community occurs on sandy loamy soil with calcrete and dolerite stones.

E12: Low woodland of *Eucalyptus lesouefii* and *Eucalyptus griffithsii* over *Acacia tetragonophylla*, *Exocarpos aphyllus*, *Prostanthera incurvata* and *Acacia quadrimarginea* over *Dodonaea lobulata*, *Trymalium myrtillus* subsp. *myrtillus*, *Eremophila oppositifolia*, *Scaevola spinescens* and *Senna artemisioides* subsp. *fillifolia*, sometimes with *Melaleuca sheathiana* and *Melaleuca pauperiflora* subsp. *fastigiata*. This community occurs on lower to mid slopes with red-brown loamy clay soil with scattered ironstone, quartz and calcrete gravel.

E13: Low woodland of *Eucalyptus griffithsii* and *Eucalyptus celastroides* subsp. *celastroides* over *Acacia burkittii*, *Calothamnus gilesii*, *Prostanthera incurvata* and *Dodonaea lobulata*. This community occurs on upper slopes with red loamy clay with overlying ironstone gravel.

E14: Low woodland of *Eucalyptus torquata* and *Eucalyptus lesouefii* over *Melaleuca sheathiana*, *Acacia burkittii*, *Dodonaea lobulata* and *Atriplex nummularia* subsp. *spathulata* over *Acacia erinacea* and *Scaevola spinescens*. This community occurs on red-brown loamy clay soil with calcrete and dolerite stones.

Clearing Description

The clearing area is located approximately 90 kilometres south of Kalgoorlie and approximately 30 kilometres southwest of Kambalda. The proposal is for the extension of the open pit at 132 North nickel mine as well as waste rock stockpile, roads and laydown areas. Australian Nickel Mines NL proposes to clear up to 30 hectares within a permit application area totalling 48 hectares.

During operations, mining will be restricted to above the watertable to avoid the need for dewatering (MBS Environmental, 2007).

Vegetation Condition

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).

To

Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

Comment

The vegetation condition is based on the Keighery (1994) vegetation condition scale and assessed from aerial photography (GIS Database) as well as an assessment provided by MBS Environmental (2007) and Matiske Consulting Pty Ltd (2007).

Previous nickel exploration, mining activities and use of the vehicle tracks have taken place in the surrounding area. These activities have caused moderate to high disturbance in parts of the proposed clearing area.

E15: Rehabilitated area with low woodland of *Eucalyptus torquata*, *Eucalyptus lesouefii* and *Eucalyptus griffithsii* over *Atriplex nummularia* subsp. *spathulata* and *Acacia erinacea*. This community occurs on yellow brown loamy clay soil with calcrete, dolerite and quartz rocks.

E16: Low forest of *Eucalyptus lesouefii*, *Eucalyptus griffithsii* and occasional *Eucalyptus gracilis* over *Dodonaea lobulata*, *Acacia quadrimarginea* and *Senna artemisioides* subsp. *filifolia* over *Eremophila caerulea* subsp. *caerulea* (ms), *Eremophila dichroantha* and *Acacia erinacea*. This community occurs on upper slopes with red-brown loamy soil with overlaying granite stones and calcrete and quartz pebbles.

E17: Low woodland of *Eucalyptus lesouefii*, *Eucalyptus torquata* and *Eucalyptus transcontinentalis* over *Melaleuca sheathiana*, *Grevillea nematophylla* subsp. *nematophylla* and *Acacia acuminata* over *Trymalium myrtillus*, *Alyxia buxifolia* and *Eremophila psilocalyx* over *Grevillea acuarria*, *Dodonaea lobulata* and *Eremophila caerulea* subsp. *caerulea* (ms). The priority species *Philotheca apiculata* (Priority 2) is also present in this community. This community occurs on orange-brown loamy clay soil with scattered ironstone and calcrete gravel.

E18: Low woodland of *Eucalyptus flocktoniae* subsp. *flocktoniae*, *Eucalyptus transcontinentalis* and *Eucalyptus torquata* over dense patches of *Melaleuca sheathiana* over *Dodonaea lobulata*, *Eremophila caerulea* subsp. *caerulea* (ms) and *Scaevola spinescens*. This community occurs on orange-grey sandy loamy gravel soil with ironstone and calcrete stones.

E19: Old rehabilitated area with open low woodland of *Eucalyptus griffithsii* over *Melaleuca atroviridis* (ms), *Melaleuca sheathiana* and *Acacia hemiteles* over *Prostanthera incurvata*, *Trymalium myrtillus* and *Dodonaea lobulata*. This community occurs on red-orange loamy clay soil with calcrete, quartz and ironstone rocks.

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 proposal is located within the Eastern Goldfields (COO3) Interim Biogeographic Regionalisation of Australia (IBRA) subregion (GIS Database). The biodiversity values of the Eastern Goldfields IBRA subregion were assessed by Cowan (2001).

The predominant vegetation of the subregion consists of Mallees, *Acacia* thickets and shrubheaths on sandplains. Diverse *Eucalyptus* woodlands occur around salt lakes, on ranges, and in valleys. Salt lakes support dwarf shrublands of samphire. Woodlands and *Dodonaea* shrubland occur on the Fraser Range. The area is rich in endemic *Acacias* (Cowan, 2001).

The proposal is not located within any of the ecosystems at risk listed for the IBRA subregion (Cowan, 2001). The proposed clearing is located adjacent to an active mine site. Aerial imagery provided by the proponent as well as other aerial imagery available to Department of Industry and Resources (DoIR) both show that the proposed clearing area has been impacted on by existing mining activities (GIS Database; MBS Environmental, 2007).

Due to the broad representation of the vegetation type in the area (Mattiske, 1998), it is unlikely that the proposal will result in the clearing of native vegetation that has higher biodiversity attributes than that of the surrounding undisturbed vegetation.

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

Methodology

Cowan (2001)
Mattiske (1998)
MBS Environmental (2007)
GIS Database:
Interim Biogeographic Regionalisation of Australia (Subregions) EA 18/10/00
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 is not likely to be at variance to this Principle

No fauna of conservation significance have been recorded directly within the proposed clearing area (GIS Database); however, based on existing records several species could potentially occur within the clearing permit area.

A desktop survey was conducted by MBS Environmental (2007) on the species listed on the Department of Environment and Conservation (DEC) Database and the Department of Environment and Heritage (DEH) Database for Fauna Species of Conservation Value within 20 and 50 kilometres of the proposed clearing area respectively. It was found that three species were highly likely to be present in the clearing area based on favoured habitats. These species were the Malleefowl, the South-Western Carpet Python and the Crested Bellbird (southern subspecies) (MBS Environmental, 2007).

Further information provided by DEC (2007) indicated that additional species of conservation significance have been recorded within 50 kilometres of the proposed clearing area. These species include the Western Rosella, the White-browed Babbler, the Chuditch and the Peregrine Falcon (DEC, 2007).

- The Malleefowl *Leipoa ocellata* (Schedule 1, fauna that is rare or likely to become extinct, 'Wildlife Conservation (Specially Protected Fauna) Notice, 2006') is listed as occurring approximately 50 kilometres northwest of the proposal (DEC, 2007). Malleefowl are largely confined to arid and semi-arid woodland that is dominated by mallee eucalypts on sandy soils, however, they can occur in habitats of acacia, paperbark, she-oak and other scrubs as well as eucalypt woodland and coastal heaths with an abundant layer of leaf litter for use in nest mounds (Garnett & Crowley, 2000). No active or inactive Malleefowl mounds were recorded in the field survey report (MBS Environmental, 2007; Mattiske, 2007), and on that basis it is unlikely that the birds occur in the area.

- The South-Western Carpet Python *Morelia spilota imbricata* (Schedule 4, other specially protected fauna, 'Wildlife Conservation (Specially Protected Fauna) Notice, 2006') is listed as occurring 37 kilometres southwest of the proposal (DEC, 2007). The species tends to inhabit temperate climatic areas with good winter rains and dry summers, and has been recorded in semi-arid coastal and inland habitats, *Banksia* woodlands, eucalypt woodlands and grasslands (WA Museum, 2003). While some of the vegetation proposed to be cleared may be suitable habitat for the python species, the amount being cleared is unlikely to result in significant impacts. Furthermore, the Carpet Python subspecies is highly ecologically flexible and tends to adapt to whatever habitats are available (Pearson *et al.*, 2005).

- The Crested Bellbird (southern) *Oreoica gutturalis* (listed by DEC as Priority 4, taxa in need of monitoring) is listed as occurring 15 kilometres and 30 kilometres southwest of the proposal (DEC, 2007). The species favours the shrub-layer of eucalypt woodland, mallee, acacia shrubland, *Triodia* hummock grassland, saltbush and heath (Garnett & Crowley, 2000). The main threat facing this species is large scale land clearing for agriculture, leading to habitat fragmentation. Given the broad representation of Beard Vegetation Association 9 (Shepherd *et al.*, 2001) in which the proposal is located, the nature of the proposal is unlikely to affect this species.

- The Western Rosella *Platycercus icterotis xanthogenys* (Schedule 1, fauna that is rare or likely to become extinct, 'Wildlife Conservation (Specially Protected Fauna) Notice, 2006') is listed as occurring 37 kilometres southwest of the proposal (DEC, 2007). The species requires appropriate nesting hollows in trees, and *Casuarina* seeds to feed on (Garnett & Crowley, 2000). The proposal is located on the edge of the habitat range for this species (Garnett & Crowley, 2000). Furthermore, no *Casuarina* communities were identified in the field survey (Mattiske, 2007), and management practices are aimed at avoiding the removal of large trees (MBS Environmental, 2007).

- The White-browed babbler *Pomatostomus superciliosus ashbyi* (listed by DEC as Priority 4, taxa in need of monitoring) is listed as occurring 35 kilometres west and 37 kilometres southwest of the proposal (DEC, 2007). The species favours eucalypt forests and woodlands; however, the proposal is located on the edge of the habitat range for this species (Garnett & Crowley, 2000). The main threat facing this species is large scale land clearing for agriculture, leading to habitat fragmentation (Garnett & Crowley, 2000). Given the broad representation of the Beard Vegetation Association 9 (Shepherd *et al.*, 2001) in which the proposal is located, the nature of the proposal is unlikely to affect this species.

- The Chuditch *Dasyurus geoffroyi* (Schedule 1, fauna that is rare or likely to become extinct, 'Wildlife Conservation (Specially Protected Fauna) Notice, 2006') is listed as occurring 33 kilometres north-northeast of the proposal (DEC, 2007). The species is predominantly located throughout the Jarrah forest and mixed Karri/Marri/Jarrah forest of southwest Western Australia (WA Museum, 2003; Orell & Morris, 1994). It is found in a wide range of habitats, including; woodlands, dry sclerophyll forests, riparian vegetation, beaches and deserts, however, its preference is for woodland and mallee habitats (WA Museum, 2003; Orell & Morris, 1994). Some of the threats facing the Chuditch are habitat alteration, competition for food, predation from cats and foxes, hunting and poisoning (Wildlife Australia, 1996). Given the broad representation of the Beard vegetation association (Shepherd *et al.*, 2001) in which the proposal is located and the distance from the nearest record, the proposal is unlikely to affect this species.

- The Peregrine Falcon *Falco peregrinus* (Schedule 4, other specially protected fauna, 'Wildlife Conservation (Specially Protected Fauna) Notice, 2006') is listed as occurring 8.5 kilometres southeast of the proposal (DEC, 2007). The species is a wide ranging bird, and has little habitat specificity apart from an affinity with cliffs, tall trees for nesting, and water (Pizzey & Knight, 1997). Given the lack of cliffs, tall trees or perennial watercourses within the project area, this proposal is unlikely to affect this species.

Management practices aimed at protecting significant habitats include; locating tracks that avoid large trees and shrubs and their root zones, stockpiling vegetation and respreading where possible to provide habitat for fauna and to assist revegetation by providing a local seed source, removing rubbish and implementing a weed management program (MBS Environmental, 2007).

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

Methodology DEC (2007)
Garnett & Crowley (2000)
Mattiske (2007)
MBS Environmental (2007)
Orell & Morris (1994)
Pearson et al. (2005)
Pizzey & Knight (1997)
Shepherd *et al.* (2001)
WA Museum (2003)
Wildlife Australia (1996)
GIS Database:
Threatened Fauna - CALM 30/9/05

(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

No Declared Rare Flora (DRF) or Threatened Plant Communities are recorded within the proposed clearing area (GIS Database). The nearest species, *Pityrodia* sp. (Priority 3), listed on the DEC's Priority list is recorded 11 kilometres south-southeast of the proposal (GIS Database). *Acacia websteri* (Priority 1) is marked as 27 kilometres north and *Eremophila praecox* (Priority 1) is marked as 32 kilometres east of the proposed clearing area (GIS Database).

MBS Environmental (2007) conducted a database search of the coordinates 31° 16' S, 121° 25' E and 31° 35' S, 121° 41' E for plant species listed under the *Wildlife Conservation Act 1950* and for Priority Flora Species listed in the Department of Environment and Conservation (DEC) Declared Rare and Priority Flora List. Mattiske Consulting Pty Ltd (2007) conducted a field survey in December 2006 and February 2007, the results of which were compared to the database search (MBS Environmental, 2007). No DRF species were collected or recorded for the proposed clearing area (MBS Environmental, 2007).

During the field survey, one plant, *Philothea apiculata* (Priority 2) was found in one location within the proposal area (MBS Environmental, 2007; Mattiske, 2007). DEC (2007) has advised that the loss of one plant of this Priority species does not appear to be significant.

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

Methodology DEC (2007)
Mattiske (2007)
MBS Environmental (2007)
GIS Database:
Declared Rare and Priority Flora List - CALM 01/07/05
Threatened Plant Communities - DEP 06/95

(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 Threatened Ecological Communities (TECs) within the Eastern Goldfields IBRA subregions (Cowan 2001). No known TECs are located in the vicinity of the proposed clearing (GIS Database).

Furthermore, the proposal is not located within any of the ecosystems at risk mentioned in Cowan (2001).

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

Methodology Cowan (2001)
GIS Database:
Threatened Ecological Communities CALM 12/04/05

(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 area proposed to be cleared does not form a significant remnant of native vegetation. The vegetation association proposed to be cleared is classified as Beard vegetation association 9, Medium woodland; coral gum (*E. torquata*) and Goldfields blackbutt (*E. lesouefii*) (GIS Database). According to Shepherd *et al.* (2001), approximately 239,835 hectares or 99.75% of Beard vegetation association 9 remains.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	% in reserves/CALM-managed land*
IBRA Region – Coolgardie	12,912,208	12,707,623	~98.4%	Least concern	~9.9%
Shire of Kalgoorlie-Boulder	No information available	No information available			
Beard vegetation associations – Mosaic: Medium Woodland - 9	240,442	239,835	~99.75%	Least concern	~1.3%

* Shepherd *et al.* (2001)

** Department of Natural Resources and Environment (2002)

Options to select from: Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment 2002)

Presumed extinct	Probably no longer present in the bioregion
Endangered*	<10% of pre-European extent remains
Vulnerable*	10-30% of pre-European extent exists
Depleted*	>30% and up to 50% of pre-European extent exists
Least concern	>50% pre-European extent exists and subject to little or no degradation over a majority of this area

*** or a combination of depletion, loss of quality, current threats and rarity gives a comparable status**

Although the percentage of land in reserves or the Department of Conservation and Land Management (CALM) managed land is very low for Beard vegetation association 9, the regional extent is approximately 99.75% uncleared, and therefore does not pose a threat to the conservation of this vegetation association.

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd *et al.* (2001)
GIS Database:
Pre European Vegetation DA 01/01

(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 permanent or seasonal watercourses in the application area (GIS Database). No riparian vegetation was identified in the vegetation survey report (MBS Environmental, 2007; Mattiske, 2007).

Lake Lefroy is three kilometres east of the clearing area; however, it is non perennial (GIS Database). The nearest watercourse to the proposed clearing site is a minor, non perennial creek located 330 metres southeast of the clearing area, which then flows into Lake Lefroy (GIS Database). Runoff from the clearing area is in the direction of the Lake (GIS Database).

Management practices aimed at minimising impacts to an environment associated with a watercourse or wetland include; retaining runoff from rainfall on site and ensuring surface runoff is directed away from the pit through the use of diversion bunds and detention basins (MBS Environmental, 2007).

Given the lack of riparian vegetation in the clearing area, the non perennial nature of the local watercourse and lake and the establishment of diversion bunds and detention basins, it is unlikely that the proposed clearing will affect environments associated with a watercourse or wetland.

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

Methodology Mattiske (2007)
MBS Environmental (2007)
GIS Database:
Geodata, Lakes - GA 28/06/02
Hydrography, Linear - DoE 1/2/04
Topographic Contours, Statewide - DOLA 12/09/02

(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

The area proposed to be cleared has been surveyed and mapped by the Department of Agriculture and Food (DAFWA) to be mainly Graves Land System. The Graves Land System has low basalt and greenstone rises supporting eucalypt woodlands with saltbush and bluebush understoreys. This is consistent with the flora survey and plant community mapping provided with the proposal (DAFWA, 2007).

The shallow calcareous loam soils likely to be encountered on the affected hill slopes land unit have pebble mantles and are moderately resistant to soil erosion in the undisturbed state (DAFWA, 2007).

The extension of the existing 132 North open pit will be a permanent void in the landscape, however, all other areas of land clearing will be progressively rehabilitated with local provenance species (MBS Environmental, 2007).

The application area is in a region that has a history of mining disturbance. During the mining operation, dust suppression measures will be implemented (MBS Environmental, 2007). Progressive rehabilitation of the waste rock dump will be implemented, minimising the disturbed area at the completion of mining (MBS Environmental, 2007).

Management strategies aimed at minimising land degradation include:

- minimising the area requiring vegetation removal;
- confining vehicle movements to defined haul roads and tracks;
- conducting topsoil-stripping activities during periods of low winds and not during rainfall events;
- establishing vegetation on bare surfaces on completion of mining activities;
- stockpiling topsoil for use in rehabilitation;
- implementation of a weed management and removal program; and
- refuelling of hydrocarbons will occur within the bunded laydown area (MBS Environmental, 2007).

It is concluded by DAFWA that land degradation is unlikely to occur as a result of the proposed clearing and mine development provided surface water is safely managed. The proponents proposed bunds and detention basins to achieve this objective and it is expected that this will be satisfactory (DAFWA, 2007).

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

Methodology DAFWA (2007)
MBS Environmental (2007)

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

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

The nearest conservation areas to the proposed clearing site are the Kambalda Timber Reserve (21 kilometres north), the Kambalda Nature Reserve (22 kilometres north), the Binaronca Nature Reserve (30 kilometres south-southeast) and the Scahill Timber Reserve (37 kilometres north-northwest) (GIS Database). There are no other conservation areas nearby. Given the distance between these areas and the proposed clearing, impacts on the environmental values of the reserves are unlikely. The proposed clearing area is also unlikely to act as a buffer or an ecological linkage to the above mentioned reserves.

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

Methodology GIS Database:
CALM Managed Lands and Waters CALM 1/7/05

(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

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

Groundwater within the area under application is saline at between 14,000 - 35,000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). The proposal borders on an area with saline groundwater at 35,000 milligrams per litre of TDS, which includes Lake Lefroy (GIS Database). Given the size of the proposed clearing and the already saline nature of the groundwater, the quality of the groundwater is unlikely to be impacted by the proposed clearing activity.

The nearest watercourse to the proposal is a minor, non perennial creekline 330 metres east of the clearing area (GIS Database), and no riparian vegetation was identified in the vegetation survey report (MBS Environmental, 2007; Mattiske, 2007).

Management practices aimed at minimising degradation to ground and surface water quality include; retaining runoff from rainfall on site through the use of diversion bunds and detention basins, no clearing conducted during periods of rainfall and diversion bunds to direct surface runoff away from the pit.

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

Methodology Mattiske (2007)
MBS Environmental (2007)
GIS Database:
Groundwater Salinity, Statewide - DoW Properties
Hydrography, Linear - DoE 1/2/04
Public Drinking Water Source Area - DoE 7/2/06
Rivers 250K - GA

(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 Kalgoorlie-Boulder region is classified as semi-arid and characterised by hot summers and cool winters, with a mean annual rainfall of 268.4 mm and average annual evaporation rates of 2,600 mm (GIS Database; Mattiske, 2007). There are no major drainage lines within the proposed clearing area, and the nearest creekline to the proposal is a minor, non perennial watercourse 330 metres southeast of the clearing area (GIS Database). The watercourse then flows into Lake Lefroy, a non perennial salt lake located three kilometres east of the proposal (GIS Database).

The clearing of 30 hectares within a catchment area of more than 5 million hectares (GIS Database) is unlikely to result in an increase in flooding incidence or intensity.

To minimise erosion and potential sedimentation of the watercourse; topsoil will be stripped during periods of low winds and not during periods of rainfall, vegetation will be established on bare surfaces on completion of mining activities and diversion bunds will be constructed where necessary to ensure surface runoff is directed away from the pit (MBS Environmental, 2007).

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

Methodology MBS Environmental (2007)
GIS Database:
Evaporation Isopleths - BOM 09/98
Hydrography, Linear - DoE 1/2/04
Hydrographic Catchments - Catchments - DoE 23/03/05
Rainfall, Mean Annual – BOM 30/09/01
Rivers 250K - GA

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

Comments There are two Native Title Claims (WC 98_027 & WC99_029) over the area under application (GIS Database), which have been registered with the National Native Title Tribunal. However, the mining tenement has been granted in accordance with the future act regime of the *Native Title Act 1993*, and the clearing is for a purpose consistent with the lease, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

No Aboriginal Sites of Significance occur within two kilometres of the proposed clearing area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

The proposed waste dump and extension of the open pit at 132 North Nickel Mine for Australian Nickel Mines NL is subject to the *Mining Act 1978* approval 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.

Methodology GIS Database:
Native Title Claims - DLI 07/11/05
Sites of Aboriginal Significance DIA

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Mineral Production	Mechanical Removal	30	Grant	<p>Assessment against the ten clearing principles identified that the proposed clearing is not at variance to principle e, and not likely to be at variance to a, b, c, d, f, g, h, i, j.</p> <p>The assessing officer recommends that the permit be granted subject to the following conditions.</p> <p>1. The Permit Holder shall record the following for each instance of clearing:</p> <ol style="list-style-type: none"> the location where the clearing occurred, expressed as grid coordinates using the Geocentric Datum of Australia 1994 coordinate system; the size of the area cleared in hectares; the method of clearing; the purpose of clearing; the area rehabilitated in hectares; and the dates on which the area was cleared. <p>2. The Permit Holder shall provide a report to the Director, Environment, Department of Industry and Resources by 28 February each year for the life of the permit setting out the records required under condition 1 of this permit in relation to clearing carried out between 1st January and 31st December the previous year.</p>

5. References

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- 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.
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- Orell, P. and Morris, K. (1992) Chuditch Recovery Plan 1992 – 2001. Western Australian Department of Conservation and Land Management.
- Pearson, D., Shine, R. and Williams, A. (2005) Spatial ecology of a threatened python (*Morelia spilota imbricata*) and the effects of anthropogenic habitat change. *Austral Ecology*, 30: 261-274.
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- Wildlife Australia (1996) Action Plan for Australian Marsupials and Monotremes. Australian Government, Department of the Environment and Water Resources.

6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAFWA	Department of Agriculture and Food, Western Australia.
DA	Department of Agriculture, Western Australia.
DEC	Department of Environment and Conservation
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DoE), Western Australia.
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia.
DoE	Department of Environment, Western Australia.
DoIR	Department of Industry and Resources, Western Australia.
DOLA	Department of Land Administration, Western Australia.
DoW	Department of Water
EP Act	Environment Protection Act 1986, Western Australia.
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System.
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	Rights in Water and Irrigation Act 1914, Western Australia.
s.17	Section 17 of the Environment Protection Act 1986, Western Australia.
TECs	Threatened Ecological Communities.

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.
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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.