



1. Application details

1.1. Permit application details

Permit application No.: 461/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Central Norseman Gold Corporation Ltd

1.3. Property details

Property: M63/42
Local Government Area: Shire Of Dundas
Colloquial name: Central Norseman Gold Operations. Gladstone and Daisy Project Areas

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
7		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 Association 125 - Bare areas; salt lakes (Shepherd et al 2001, Hopkins et al 2001).	The area under application is comprised of 7ha within a 986ha mining tenement. It is located adjacent to existing mining infrastructure and would therefore have some level of disturbance. A vegetation survey was conducted over 10 square kilometres and this included the area under application (Mattiske Consulting 2001). From this survey, the vegetation under application is either extensive low lying saltbush plains adjacent to salt lakes or low chenopod shrubs dominated by samphires, subject to inundation and waterlogging (Mattiske Consulting 2001).	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	From the vegetation map within the vegetation study provided with the application (Mattiske Consulting 2001), it is difficult to determine the exact vegetation type of the area under application. However given that the area of proposed clearing is adjacent to existing mining infrastructure, it is likely to exhibit some level of disturbance. As such, a condition rating of Very Good is used.

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 relatively small area under application is located adjacent to existing mining infrastructure and as such would have potentially been disturbed. The surrounding area has a history of disturbance from pastoral and mining activities (Mattiske Consulting 2001). Therefore, the area under application is not likely to have a higher level of biodiversity than that of surrounding less disturbed areas.

Methodology Mattiske Consulting (2001) (Trim Ref IN20053)
Aerial photo provided by the proponent (Trim Ref IN20053)

(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**
A fauna survey document was prepared by Mattiske Consulting and Ninnox Wildlife Consulting (2005) for a tailings dam adjacent to the area under application (CPS 451/1). It is considered that some of the information in the report is applicable to this clearing permit due to its proximity and similar vegetation types. In the survey, no rare, threatened or vulnerable species were recorded during the habitat assessment (Mattiske Consulting and Ninnox Wildlife Consulting 2005).

Given that the relatively small area under application is adjacent to existing mining infrastructure, it is

considered there would already be a high level of disturbance in this area. In addition, approximately 12,719,084ha (or 98%) of vegetation remains in the Coolgardie region (Shepherd et al 2001, Hopkins et al 2001). As such, it is considered that the clearing as proposed is not likely to be at variance to this Principle.

Methodology Mattiske Consulting and Ninox Wildlife Consulting (2005) (Trim Ref HD23713) (See CPS 451/1)
Aerial photo provided by the proponent (Trim Ref IN20053)
Shepherd et al (2001)
Hopkins et al (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

No Declared Rare or Priority flora have been identified within the area under application (Mattiske Consulting 2001). A vegetation survey conducted over a larger area did identify the DRF species *Daviesia microcarpa* and *Eucalyptus platydisca* (Mattiske Consulting 2001). However, these species were identified approximately 10km from the area under application and within a different vegetation type (Mattiske Consulting 2001). Therefore it is unlikely that the clearing as proposed is at variance to this principle.

Methodology Mattiske Consulting (2001) (Trim Ref IN20053)
GIS Databases:
-Declared Rare and Priority Flora List - CALM 13/08/03

(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 were identified during the vegetation survey (Mattiske Consulting, 2001). The nearest recorded TEC is 70km to the south west.

Methodology Mattiske Consulting (2001) (Trim Ref IN20053)
GIS Databases :
-Threatened Ecological Communities - CALM 15/07/03

(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 State Government is committed to the National Objectives Targets for Biodiversity Conservation which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-European settlement (Department of Natural Resources and Environment, 2002; EPA, 2000).

The Beard vegetation association 125 that is within this application is above the 30% minimum as it has 89.9% remaining equating to 3,536,922 ha (Shepherd et al 2001, Hopkins et al 2001). Therefore, the clearing as proposed is not likely to be at variance to this Principle.

Methodology Shepherd et al. (2001)
Hopkins et al (2001)
Department of Natural Resources and Environment (2002)
EPA (2000)

(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 may be at variance to this Principle

The area under application is adjacent to a large non-perennial salt lake (300m to the west and 200m to the south). The vegetation under application is described as either low lying saltbush plains adjacent to salt lakes or low chenopod shrubs dominated by samphires (Mattiske Consulting 2001). It is likely the vegetation under application would be regarded as being associated with a wetland.

The area under application is located adjacent to existing mining infrastructure and has been subjected to some level of disturbance through mining and pastoral activities. In addition, the hydrology of the immediate area may have been altered through the process of dewatering (pumping out of groundwater to reach minerals below water table). The clearing of 7ha is therefore unlikely to have a significant impact upon the hydrology and functions of the riparian zones of the extensive saline lakes of the local area.

Given the above, it is considered that the clearing as proposed would have a minimal impact upon the wetlands (salt lakes) it is likely associated with.

Methodology Matiske Consulting (2001) (Trim Ref IN20053)
Aerial photo provided by the proponent (Trim Ref IN20053)
GIS Databases:
- 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 is not likely to be at variance to this Principle

There are a number of drainage lines leading towards salt lakes surrounding the area under application, that, associated with the red sandy soils of the area could make the area under application prone to soil erosion via surface water run-off.

The proponent has proposed to address these land degradation risks through the management of surface water flow. Potential erosion along the haul roads would be minimised by cut-off drains and the proponent has also proposed to use in-pit sumps and bores to capture inflowing groundwater, precipitation and surface run-off. These techniques were outlined within the Notice of Intent to Mine (NOIM) that was submitted by the proponent to the Department of Industry and Resources.

Should these techniques be used, it is considered that the clearing as proposed is unlikely to result in significant land degradation on or off-site.

Methodology CNGC (2003) Notice of Intent to Mine
GIS Databases:
- Hydrology, linear - DoE 01/02/04
- Soils, Statewide - DA 11/99

(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 CALM managed land is Dundas Nature Reserve which is 12.2km south west of the area under application. Given the distance to the Reserve, it is unlikely that the clearing as proposed would have a significant impact upon the conservation values of the Reserve, particularly considering the largely uncleared extent of the region. The area under application is therefore not required to act as a buffer or provide an ecological linkage to the Reserve due to the extent of the representation of native vegetation within the area.

Methodology Aerial photo provided by the proponent (Trim Ref IN20053)
GIS Databases:
-CALM managed Lands and Water - CALM 01/08/04

(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 regional groundwater within the area under application is saline (15,000-35,000 mg/L TDS). It is considered that the clearance of 7ha in relation to 29,644,595ha of the Yilgarn-Goldfields Aquifer is unlikely to cause any impact to groundwater quality.

There are a number of salt lakes within 300m of the area under application. The proposed clearing may alter the surface water flow within the area, however within the NOIM, the proponent has outlined a number of techniques such as cut-off drains and in-pit sumps to capture and divert surface water flow. In addition, mining processes and associated infrastructure already exist around the area under application, including the surface of the nearby salt lakes and, therefore, some of these practices may already be in place. With a mean annual rainfall of 300mm, an annual average evapotranspiration of 300mm, and an annual evaporation rate of 2,300mm, substantial surface water flow is only likely during infrequent heavy rainfall events. As such, it is considered that the clearing as proposed is unlikely to have a significant impact on surface water flow or quality.

Methodology CNGC (2003) Notice of Intent to Mine
GIS Databases:
- Groundwater Salinity, Statewide - 22/02/00
- Rainfall, Mean Annual - BOM 30/09/01
- Hydrology, linear - DOE 01/02/04
- Groundwater provinces - WRC 98
- Evaporation Isopleths - BOM 09/98
- Evapotranspiration, Area Actual - BOM 30/09/01

(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 proposed clearing is in a low lying site between 3-5km east of the Dundas Hills (one of the main water sheds for this area). However, with an annual average rainfall being 300mm, an evapotranspiration annual average of 300mm, and an evaporation rate of 2,300mm, it is unlikely that the clearing as proposed will cause or exacerbate the incidence or intensity of flooding.

Methodology GIS Database

- Rainfall, Mean Annual - BOM 30/09/01
- Evapotranspiration, Areal Actual - BOM 30/09/01
- Evaporation Isopleths - BOM 09/98

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

Comments

DOIR have no objection to the proposal.

A letter of objection was received from a member of the public. The objection related to the general issue of global warming and did not specify a specific objection for the current application. While global warming is an important issue, this proposal is not likely to significantly contribute to the phenomenon.

There is a Native Title Claim over the area under application by the Ngadju people. However, mining tenements for purposes consistent with clearing have been granted and the clearing will be for purposes consistent with the granted leases, so the granting of a clearing permit is not a future act under the Native Title Act.

Methodology

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Mineral Production	Mechanical Removal	7	Grant	The application has been assessed and the Clearing Principles have been addressed. The assessing officer recommends that a Clearing Permit be granted with the following conditions- - The Permit Holder shall record the following for each instance of clearing: a) area cleared in hectares, b) location where clearing occurred; c) purpose; d) area and location rehabilitated in hectares. - The Permit Holder shall provide a report to the CEO by 1 February each year of this permit setting out the records required under condition 1 of this permit in relation to clearing carried out between 1 January and 31 December of the previous year.

5. References

Central Norseman Gold Corporation Limited (CNGC) (2003) Environmental Impact and Management Plan for the Gladstone Open Pit. Notice of Intent to Mine. Kalgoorlie, Western Australia. Unpublished report. (DoE Trim Ref AI 784)

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.

EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority.

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.

JANIS Forests Criteria (1997) Nationally agreed criteria for the establishment of a comprehensive, Adequate and Representative reserve System for Forests in Australia. A report by the Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-committee. Regional Forests Agreement process. Commonwealth of Australia, Canberra.

Keighery, BJ (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Mattiske Consulting (2001) Flora and Vegetation Survey- Gladstone and Daisy Project Areas- Norseman. Prepared for Central Norseman Gold Ltd. (DoE Trim Ref IN20053)

Mattiske Consulting and Ninox Wildlife Consulting (2005). Flora, vegetation and vertebrate fauna survey on proposed tailings dam area. Prepared for Croesus Mining NL. (DoE Trim Ref HD 23713)

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
CALM	Department of Conservation and Land Management
DAWA	Department of Agriculture
DEP	Department of Environmental Protection (now DoE)
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 DoE)