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

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6617/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Holcim (Australia) Pty Ltd**

1.3. Property details

Property: Mining Lease 70/1248
Mining Lease 70/1250
Local Government Area: City of Wanneroo
Colloquial name:

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 6 August 2015

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 for the whole of Western Australia and are useful to look at vegetation in a regional context. One vegetation association has been mapped within the application area (GIS Database):

Beard vegetation association 949: Low woodland; banksia (GIS Database).

A level 1 flora survey of the application area and surrounding area was undertaken by EnviroWorks Consulting (2015) on 12 May 2015. The following vegetation association was identified within the application area (EnviroWorks Consutling, 2015):

Cleared Pine Plantation
Sections of the pine plantation have been harvested within the last 10 years, specifically, in 2006, 2007, 2010 and 2013. Small areas cleared in 2006 and 2007 have rehabilitation planting. Native vegetation present consists of self-sown scattered individual plants of *Nuytsia floribunda, Xanthorrhoea preissii*, *Jacksonia* spp. and low woody shrubs (e.g. *Acacia puchella, Hibbertia subvaginata*). The ground layer typically consists of annual herbs (e.g. *Podotheca* sps.) and geophytes (e.g. species of Cyperaceae, Restionaceae).

Clearing Description

Holcim (Australia) Pty Ltd proposes to clear up to 10 hectares of native vegetation within a total boundary of approximately 16.48 hectares, for the purpose of mineral exploration. The project is located approximately 26 kilometres south-east of Yanchep, in the City of Wanneroo.

Vegetation Condition

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

To:

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).

Comment

The application area is a cleared Pine (*Pinus pinaster*) plantation, where the native vegetation was cleared over 50 years ago to establish the plantation. The regrowth of native vegetation within the application area historically cleared within the last 10 years.

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 area occurs within the Perth (SWA2) Interim Biogeographical Regionalisation of Australia

subregion (GIS Database). This subregion is comprised of colluvial and Aeolian sands, alluvial river flats, and coastal limestone. It is characterised by Heath and/or Tuart woodlands on limestone, Banksia and Jarrah-Banksia woodlands on Quaternary marine dunes of various ages, and Marri on colluvial and alluvials (CALM, 2002).

The vegetation that occurs within the application area is regrowth from a Pine (*Pinus pinaster*) plantation that had been cleared progressively from 2010 to 2013. The original native vegetation was cleared approximately 85 years ago to establish the Gnangara Pine Plantation. EnviroWorks Consulting (2015) conducted a Level 1 flora survey over the application area and surrounding area which recorded 91 native flora species. The majority of the native flora diversity surveyed was outside the application area (EnviroWorks Consulting, 2015). No vegetation units within the application area were considered to be of high conservation significance and habitat diversity was very low within the application area despite being within the Gnangara-Moore River State Forest (EnviroWorks Consulting, 2015; GIS Database).

No Threatened or Priority Flora species, Threatened Ecological Communities or Priority Ecological Communities were recorded during the flora survey (EnviroWorks Consulting, 2015).

The condition of the vegetation within the application area ranged from 'degraded' to 'completely degraded' (Keighery, 1994). The flora survey recorded 39 non-native flora species and available databases suggest the presence of dieback (*Phytophthora cinnamomi*) within the application area. Weeds and dieback have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed and dieback management condition.

Faunal habitats within the application area are limited due to the lack of vegetative cover and landform features, and the existing level of disturbance (EnviroWorks Consulting, 2015; GIS Database). The application area is not likely to have a higher level of faunal diversity than the surrounding area.

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

Methodology CALM (2002)
EnviroWorks Consulting (2015)
GIS Database
Keighery (1994)

(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 survey has been conducted over the application area. The application area is almost completely degraded and unlikely to provided habitat or a food source specific for any conservation significant fauna (Keighery, 1994; GIS Database). Aerial imagery identified nearby vegetation in the local area that is in significantly healthier condition in which fauna species are more likely to inhabit (GIS Database).

Fauna habitat within the application area is limited due to the sparse nature of the understorey and small stature of the re-growth/rehabilitated vegetation (GIS Database). There is one conservation significant species listed as Threatened under the *Environment Protection and Biodiversity Conservation Act 1999* or protected under Western Australian legislation (*Wildlife Conservation Act, 1950*), that may potentially occur within the application area (DPaW, 2015); Carnaby Black Cockatoo (*Calyptorhynchus latirostris*) (EPBC Act - Endangered; WC Act - Schedule 1). The vegetation within the application area comprises of regrowth that is approximately 2 to 9 years old and is not considered mature enough or in a suitable condition to provide significant habitat for faunal species (EnviroWorks Consulting, 2015; GIS Database). The ecological values of the potential fauna habitats are therefore considered to be low.

The proposed clearing of 10 hectares of native vegetation is not likely to impact critical feeding or breeding habitat for any conservation significant fauna species as the application area does not contain significant faunal habitats.

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

Methodology DPaW (2015)
EnviroWorks Consulting (2015)
GIS Database
Keighery (1994)

(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**
According to the available databases, there are no known records of Threatened Flora within the application area (GIS Database). A search of the Department of Parks and Wildlife's Threatened and Priority Flora databases identified no Threatened Flora species as occurring within a three kilometre radius of the application

area (DPaW, 2015).

A Level 1 flora survey conducted over the application area and surrounding areas did not record any species of rare flora (EnviroWorks Consulting, 2015).

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

Methodology DPaW (2015)
EnviroWorks Consulting (2015)
GIS Database

(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

A search of the available databases shows that there are no known Threatened Ecological Communities (TEC) within the application area. The nearest TEC is situated four kilometres north-west of the application area (GIS Database). EnviroWorks Consulting (2015) did not identify vegetation types associated with a TEC. Given the distance separating the TEC buffer zone and the application area, the proposed clearing is not likely to impact the environmental values of the TEC.

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

Methodology EnviroWorks Consulting (2015)
GIS Database

(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 application area falls within the Perth subregion of the Swan Coastal Plain IBRA bioregion (GIS Database). Approximately 39% of the pre-European vegetation remains within the bioregion (Government of Western Australia, 2013). The vegetation within the application area is recorded as:

Beard vegetation association 949: Low woodland; banksia (GIS Database).

Beard vegetation association 949 retains approximately 56% of its pre-European extent which is more than the 30% threshold level recommended in the National Objectives Targets for Biodiversity Conservation below which, species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). According to the Government of Western Australia (2013), Beard vegetation association 949 retains approximately 57% of its pre-European extent in the Swan Coastal Plain bioregion and Perth subregion. The local area has been extensively cleared, however the area proposed to be cleared is not a significant remnant of native vegetation.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves (and post clearing %)
IBRA Bioregion - Swan Coastal Plain	1,501,221	587,708	~39.15	Depleted	10.77 (25.85)
IBRA Subregion - Perth	1,117,757	473,909	~42.40	Depleted	11.95 (26.20)
Local Government - Wanneroo	67,698	31,541	~46.59	Depleted	8.32 (16.66)
Beard vegetation associations - State					
949	218,194	124,117	~56.88	Least Concern	14.02 (24.20)
Beard vegetation associations - Bioregion					
949	209,983	121,247	~57.74	Least Concern	14.16 (24.09)
Beard vegetation associations - subregion					
949	184,476	105,108	~56.98	Least Concern	15.16 (26.12)

* Government of Western Australia (2013)

** Department of Natural Resources and Environment (2002)

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

Methodology Commonwealth of Australia (2001)
Department of Natural Resources and Environment (2002)
Government of Western Australia (2013)
GIS Database

(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 at variance to this Principle**
According to available databases, there are no permanent watercourses or wetlands within the application area (GIS Database). EnviroWorks Consulting (2015) did not identify any riparian vegetation within the application area.

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

Methodology EnviroWorks Consulting (2015)
GIS Database

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

Comments **Proposal may be at variance to this Principle**
The application area is associated with subdued dune-swale terrain by limestone at depth (Northcote et al, 1968; GIS Database). Chief soils are white sandy soils (Northcote et al, 1968). Generally, these soils have a high risk of wind erosion and a low risk of water erosion due to the high infiltration rates associated with sands. The majority of the area under application has a low risk of salinity. The proposed clearing has a high risk of wind erosion given the sandy soils associated with the area under application, and without appropriate management for exposed surfaces the proposal may cause appreciable land degradation. Potential land degradation impacts as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

The application area intercepts areas categorised as 'low' to ‘moderate’ Acid Sulphate Soil (ASS) risk (GIS Database). ASS are likely to occur at depths of three metres or greater. The soil exposed from clearing native vegetation is not likely to form acid on exposure to air. On this basis, the proposed clearing activities are not likely to pose a significant ASS risk.

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

Methodology Northcote et al (1960 - 986)
GIS Database

(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 at variance to this Principle**
The application area falls within Gnangara-Moore River State Forest which is managed by the Department of Parks and Wildlife (GIS Database).

The Gnangara-Moore River State Forest is over 7,000 hectares in area (GIS Database). The application area is a cleared Pine (*Pinus pinaster*) plantation, where the native vegetation was cleared several decades ago to establish the plantation (GIS Database). The degraded condition of the native vegetation is due to the high numbers of weeds, rubbish and historical clearing (EnviroWorks, 2015; GIS Database). Given this, the proposed clearing is not likely to provide a significant ecological linkage or fauna movement corridor and is not likely to impact the environmental values of the conservation area.

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

Methodology EnviroWorks (2015)
Keighery (1994)
GIS Database

(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 area is located within the Priority One Gnangara Public Drinking Water Source Area and is within the area covered by the *Environmental Protection (Gnangara Mound Crown Land) Policy 1992* (GIS

Database). The Department of Water (DoW) have considered the proposal and offer no comment (DoW, 2015). The application area is located within the proclaimed Swan River groundwater area under the *Rights in Water and Irrigation Act 1914* (GIS Database). Any groundwater extraction and/or taking or diversion of surface water for the purposes other than domestic and/or stock watering is subject to licence by the DoW.

There are no permanent or ephemeral water bodies located within the application area (GIS Database). The application area has a groundwater salinity that is fresh (<500 milligrams/Litre Total Dissolved solids (TDS)) (GIS Database). Although the proposed clearing may increase the amount of rainwater that infiltrates to the groundwater, given the nature of the overlying materials (i.e. limestone ridges overlain by yellow or brown sand), the proposed clearing is not likely to adversely impact the quality of groundwater. The proposed clearing is unlikely to deteriorate the quality of underground water (GIS Database).

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

Methodology DoW (2015)
GIS Database

(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 application area is predominately comprised of leached Bassendean sands, which are generally considered to have high infiltration rates and therefore a low risk of water logging (Churchward & McArthur, 1980).

Given the size of the area to be cleared (10 hectares) compared to the size of the Swan Avon catchment area (396,685 hectares) (GIS Database) it is not likely that the proposed clearing will lead to an appreciable increase in run off, and subsequently cause or exacerbate the incidence or intensity of flooding.

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

Methodology Churchward & McArthur (1980)
GIS Database

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

Comments

There are no Native Title claims over the area under application (GIS Database). 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 known registered Aboriginal Sites of Significance located within the clearing permit application area (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 Regulation, Department of Parks and Wildlife 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 clearing permit application was advertised on 15 June 2015 by the Department of Mines and Petroleum inviting submissions from the public. Two submissions were received in relation to the proposed clearing.

It is noted that the proposed clearing may impact on a protected matter under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). The proponent may be required to refer the project to the (Federal) Department of Environment for environmental impact assessment under the EPBC Act. The proponent is advised to contact the Department of Environment for further information regarding notification and referral responsibilities under the EPBC Act.

Methodology GIS Database

4. References

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Swan Coastal Plain 2 (SWA2 - Perth subregion) Department of Conservation and Land Management, Western Australia.

Churchward H. M. & McArthur W.M (1980) 'Landforms and Soils of the Darling System' in Atlas of Natural Resources, Darling System, Western Australia. Government of Western Australia.

Commonwealth of Australia (2001) National objectives and targets for biodiversity conservation 2001-2005. Commonwealth of Australia, Canberra, ACT.

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.

Department of Parks and Wildlife (DPaW) (2015) NatureMap Department of Parks and Wildlife, viewed 29 July 2015

<http://naturemap.dec.wa.gov.au>.
Department of Water (DoW) (2015) Advice regarding CPS 6617/1 within the Gnangara Underground Water Pollution Control Area. Internal document, July 2015.
EnviroWorks Consulting (2015) Preliminary Flora Assessment. Tenements M7001248 and M7001250, Jandabup, 2015. Prepared for Holcim (Australia) Pty Ltd, 25 May 2015.
Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. WA Department of Environment and Conservation, Perth.
Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
Northcote, K. H., Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DPaW and DER)
DER	Department of Environment Regulation, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DRF	Declared Rare Flora
DotE	Department of the Environment, Australian Government
DoW	Department of Water, Western Australia
DPaW	Department of Parks and Wildlife, Western Australia
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DotE)
EPA	Environmental Protection Authority, Western Australia
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
PEC	Priority Ecological Community, Western Australia
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:

{DPaW (2013) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

T **Threatened species:**
Specially protected under the *Wildlife Conservation Act 1950,* listed under Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna or the Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).

Threatened Fauna and Flora are further recognised by DPaW according to their level of threat using IUCN Red List criteria. For example Carnaby's Cockatoo *Calyptorynchus latirostris* is specially protected under the *Wildlife Conservation Act 1950* as a threatened species with a ranking of Endangered.

Rankings:
CR: Critically Endangered - considered to be facing an extremely high risk of extinction in the wild.
EN: Endangered - considered to be facing a very high risk of extinction in the wild.
VU: Vulnerable - considered to be facing a high risk of extinction in the wild.

X **Presumed Extinct species:**
Specially protected under the *Wildlife Conservation Act 1950,* listed under Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora (which may also be referred to as Declared Rare Flora).

IA **Migratory birds protected under an international agreement:**
Specially protected under the *Wildlife Conservation Act 1950,* listed under Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice.
Birds that are subject to an agreement between governments of Australia and Japan, China and The Republic of Korea relating to the protection of migratory birds and birds in danger of extinction.

S **Other specially protected fauna:**
Specially protected under the *Wildlife Conservation Act 1950,* listed under Schedule 4 of the Wildlife

Conservation (Specially Protected Fauna) Notice.

P1 **Priority One - Poorly-known species:**
Species that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, rail reserves and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.

P2 **Priority Two - Poorly-known species:**
Species that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, unallocated Crown land, water reserves, etc. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.

P3 **Priority Three - Poorly-known species:**
Species that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.

P4 **Priority Four - Rare, Near Threatened and other species in need of monitoring:**
(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.
(b) Near Threatened. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.
(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

P5 **Priority Five - Conservation Dependent species:**
Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.