



## 1. Application details

### 1.1. Permit application details

Permit application No.: 1738/1

Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: BGC Clay Products Pty Ltd

### 1.3. Property details

Property: LOT 5 ON PLAN 7892 (House No. 1880 GREAT NORTHERN BULLSBROOK 6084)

Local Government Area: City Of Swan

Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
	37	Mechanical Removal	Extractive Industry

## 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 3: Medium forrest: jarrah-marri (Shepherd 2006).	The vegetation under application is located within a 162ha property of which ~70% is cleared, and is zoned 'Landscape' within the local Town Planning Scheme and 'Rural' within the Metropolitan Region Scheme. The property is bordered to the east by Walyunga National Park, and includes a portion of Bush Forever Site 412. The areas to the North, South and East are largely cleared rural properties.	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	The vegetation clearing description is based on information obtained during the site inspection undertaken 22/03/2007 (TRIM Ref. DOC18971).
Hedde Vegetation Complexes: - Guildford Complex: A mixture of open forest of E.calophylla-E.wandoo-E.marginata and woodland of E.wandoo (with rare occurrences of E.lane-polei). Minor components include E.rudis-M.rhaphiophylla.  - Forrestfield Complex - Vegetation ranges from open forest of E.calophylla-E.wandoo-E.marginata to open forest of E.marginata-E.calophylla-C.fraseriana-Banksia species. Fringing woodland of E.rudis in the gullies that dissect this landform (Hedde et al. 1980).	The property is currently being mined for sand extraction south west of the vegetation under application, and a proposal to clear vegetation to extend the sand mining area is currently under assessment (CPS 1389/1). Clay extraction has previously occurred on the property, with large, open clay pit faces present in areas adjacent to the application area. Cattle have also been grazed on the property in the past.		
Mattiske Vegetation Guildford (Gu) Complex: Mosaic of open forest of Corymbia calophylla-Eucalyptus wandoo-Eucalyptus marginata subsp. marginata and woodland of Eucalyptus wandoo (Mattiske Consulting 1998).	The area under application comprises of 37 mature Eucalypts. The majority of these are Wandoo (Eucalyptus wandoo), with a couple of Jarrah (Eucalyptus marginata) trees present. The majority of these trees have several		

hollows, with some showing signs of previous nesting activity. The understorey comprises of overgrown pasture grass, with no native species evident in the understorey during the site inspection. The area surrounding these trees is largely cleared paddock.

### 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 vegetation under application is located within a 162ha property, of which ~70% is cleared. The area of vegetation under application has been parkland cleared and previously grazed.

The vegetation under application is in a completely degraded condition and comprises of 37 mature Eucalyptus wandoo (Wandoo) and Eucalyptus marginata (Jarrah) with no native understorey (Site inspection 2007).

Given that only two species are present within the area to be cleared, the vegetation under application is not considered to comprise a high level of biological diversity. Therefore the proposed clearing is considered to be not likely to be at variance to this Principle.

**Methodology**      Reference:  
- Site inspection (2007)  
GIS Database:  
- Swan Coastal Plain North 20cm Orthomosaic - DLI06

#### (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 at variance to this Principle**

The vegetation under application is located within a 162ha property, of which ~70% is cleared. The property is bordered to the east by Walyunga National Park, and includes an area of Bush Forever Site 412. The areas to the North, South and East are largely cleared rural properties.

The vegetation under application is in a completely degraded condition, comprising of 37 mature Eucalyptus wandoo (Wandoo) and Eucalyptus marginata (Jarrah) with no native understorey (Site inspection 2007).

Six fauna species of conservation significance are known to occur within the local area (5km), being:

- Black-flanked Rock-Wallaby (*Petrogale lateralis lateralis*) (Vulnerable);
- Carpet Python (*Morelia spilota imbricata*) (Priority 4);
- Chuditch (*Dasyurus geoffroii*) (Vulnerable);
- Quenda (*Isoodon obesulus fusciventer*) (Priority 5);
- Tammar Wallaby (*Macropus eugenii derbianus*) (Priority 5); and
- Western Swamp Tortoise (*Pseudemydura umbrina*) (Critically Endangered).

None of the above listed species are considered likely to be found within the area under application due to the lack of suitable habitat.

Whilst the vegetation under application is in close proximity to nearby conservation areas, the majority of the trees applied to be removed contain hollows that are considered significant as nesting habitat, with some hollows showing signs of previous nesting activity (Site inspection 2007). Given the large amount of clearing on the property and within the local area, and the presence of suitable nesting hollows for native birds, the vegetation under application is considered to provide significant habitat for local fauna. Therefore, the proposed clearing is at variance to this Principle.

**Methodology**      References:  
- DEC Fauna Habitat Notes (2007)  
- Site inspection (2007)  
GIS Databases:  
- SAC Bio Datasets, Accessed 16/04/2008  
- Swan Coastal Plain North 20cm Orthomosaic - DLI06



**(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**

There are seven Declared Rare Flora (DRF) species known to occur within the area local to the area under application being;

- Caladenia huegelii;
- Eleocharis keigheryi;
- Grevillea christineae;
- Grevillea curviloba subsp. curviloba;
- Grevillea curviloba subsp. incurve;
- Hakea varia; and
- Hydatella dioica.

The closest known populations of DRF are Hydatella dioica and Eleocharis keigheryi 2.2km from the area under application.

Eleocharis keigheryi, Grevillea curviloba subsp. curviloba, Caladenia huegelii, Grevillea curviloba subsp. incurva and Hydatella dioica are known to occur within the same vegetation complexes as the area under application. However none of these species are known to occur within the same soil type and/or habitat as the area under application.

In addition, the vegetation under application comprises 37 mature Eucalyptus wandoo (Wandoo) and Eucalyptus marginata (Jarrah) with no native understorey (Site inspection 2007).

Given that the proposal is for the removal of 37 trees and the area does not contain a native understorey, the proposed clearing is considered to be not likely to be at variance to this Principle.

**Methodology Reference:**

- Site inspection (2007)
- GIS Databases:
- Heddle Vegetation Complexes
  - Mattiske Vegetation
  - Pre-European\_Vegetation
  - SAC Bio Datasets, Accessed 16/04/2008
  - Soils, Statewide

**(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 three known occurrences of Threatened Ecological Communities (TECs) with 5km radius, the closest being Floristic Community Type 15 (Vulnerable) approximately 2km west of the vegetation under application. This Floristic Community Type is known as 'Forests and woodlands of deep seasonal wetlands' (Gibson et al. 1994).

Two Threatened Ecological Communities are associated with Bush Forever Site 301, south of the vegetation under application. These TEC are the Critically Endangered Floristic Community Type 3c known as 'Eucalyptus calophylla-Xanthorrhoea preissii woodlands and shrublands' and Vulnerable Floristic Community Type 8 known as 'Herb rich shrublands in clay pans' (Gibson et al. 1994).

The vegetation under application comprises 37 mature Eucalyptus wandoo (Wandoo) and Eucalyptus marginata (Jarrah) with no native understorey (Site inspection 2007).

Given the description of the vegetation and the distance to the local TEC, the vegetation is not considered to comprise the whole, or part of, or be necessary for the maintenance of a TEC.

**Methodology Reference:**

- Gibson et al. (1994)
- GIS Databases:
- Bushforever
  - SAC Bio Datasets, Accessed 27 April 2007
  - Threatened Ecological Communities - CALM 12/4/05

**(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 may be at variance to this Principle**

The vegetation under application is a component of Beard Vegetation Association 3 and Mattiske Guildford Complex which have 70.0% and 12.3% pre-European vegetation extent remaining (Hopkins et al. 2001, Mattiske

Consulting 1998 and Shepherd et al. 2006). The vegetation under application is also associated with Heddle Guildford and Forrestfield vegetation complexes which have 5.0% and 17.5% pre-European vegetation extent remaining (Heddle et al. 1980, EPA 2006).

The State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents a clearance of ecological communities with an extent below 30% of that present pre-European settlement (Commonwealth of Australia 2001).

Mattiske Guildford complex and Heddle Guildford and Forrestfield vegetation complexes are below the State Government's 30% Biodiversity Conservation target at only 12.3%, 5.0% and 17.5% vegetation extent remaining, respectively (EPA 2006, Mattiske Consulting 1998).

Furthermore, JANIS Forests Criteria (1997) recommends a minimum of 15% pre-1750 distribution of each vegetation ecosystem should be protected in a comprehensive, adequate and representative reserve system. Both Heddle vegetation communities are poorly represented in secure tenure at only 0.2% and 0.3% respectively (EPA 2006).

Whilst the area under application comprises 37 mature trees with no native understorey (Site Inspection 2007, given the low representation of the mapped vegetation communities associated with the local area and presence of Eucalyptus associated with these communities, the proposed clearing may be at variance to this Principle.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	% In reserves/ CALM managed
land				
IBRA Bioregion:				
- Jarrah Forest*	4,506,674	2,426,079	53.8	
Local Government:				
- City of Swan**	104,220	46,043	44.2	
Vegetation Communities:				
- Beard Association 3*	2,661,514	1,863,982	70.0	80.3
- Heddle***:				
Guildford Complex	92,497	4,662	5.0	0.2
Forrestfield Complex	20,052	3,518	17.5	0.3
- Mattiske****:				
Guildford Complex	68,546	8,441	12.3	

\* (Shepherd 2006)

\*\* (Del Marco et al. 2004)

\*\*\* (EPA 2006)

\*\*\*\* (Mattiske Consulting 1998)

#### Methodology

##### References:

- Commonwealth of Australia (2001)
  - Del Marco et al. (2004)
  - EPA (2006)
  - Heddle et al. (1980)
  - Hopkins et al. (2001)
  - JANIS Forests Criteria (1997)
  - Mattiske Consulting (1998)
  - Shepherd (2006)
  - Site inspection (2007)
- ##### GIS Databases:
- Heddle Vegetation Complexes
  - Interim Biogeographic Regionalisation of Australia
  - Mattiske Vegetation
  - 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 mapped wetlands or watercourses within the vegetation under application, with the closest being a Multiple Use Palusplain to the north and west of the area (~100m away at its closest point). A Conservation Category Wetland (Ellen Brook Floodplain) is located approximately 700m to the west, with a small Resource



Enhancement Palusplain located approximately 730m to the south west. The vegetation under application is located outside of the recommended minimum buffer area of 50m for these wetland systems (Water and Rivers Commission 2001).

The position of the vegetation under application on a slope in the landscape, and distance to the mapped wetlands, indicate that the vegetation under application is not growing in, or in association with, an environment associated with a watercourse or wetland. Therefore, the proposed clearing is considered not likely to be at variance to this Principle.

**Methodology** Reference:  
- Water and Rivers Commission (2001)  
GIS Databases:  
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain  
- Hydrography, linear  
- Topographic Contours, Statewide

**(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 vegetation under application is associated with gently sloping bench or terrace on the Ridge Hill Shelf with chief soils of hard acidic yellow soils containing ironstone gravels (Northcote et al. 1960-68). These soils are not considered to be at risk of wind erosion, however may be at risk to water erosion. Contour mapping identifies a gentle relief (~9% gradient) (Wells 1998) with the area under application located mid slope in the landscape.

Given the hard nature of the geology on site, and the vegetation's position mid slope in the landscape in close proximity to a mapped watercourse, the proposed clearing may result in an increase in surface water runoff causing erosion gullies.

However given the small area of vegetation proposed to be cleared (37 trees over ~0.5ha) and lack of understorey (Site inspection 2007), the proposed clearing is not considered likely to lead to appreciable land degradation in the form of water erosion.

**Methodology** References:  
- Northcote et al. (1960-68)  
- Site inspection (2007)  
- Wells (1998)  
GIS Databases:  
- Hydrography, linear  
- Soils, Statewide  
- Topographic Contours, Statewide

**(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 four conservation reserves within a 5km radius of the vegetation under application, the closest being the Walyunga Road Bushland (Bush Forever Site 412) approximately 670m to the south east. Walyunga National Park, Twin Swamps Nature Reserve (Bush Forever site 400), Ellen Brook Nature Reserve (Bush Forever site 301) and an un-named Nature Reserve are within a 900m, 1.2km, 2.2km and 3km radius, respectively.

Given the distance to these reserves and small amount of vegetation proposed to be cleared (37 trees over ~0.5ha), the proposed clearing is not considered likely to have an impact on the environmental values of these nearby conservation areas.

**Methodology** Reference:  
- Government of Western Australia (2000)  
GIS Databases:  
- Bushforever  
- CALM Managed Lands and Waters  
- Register of National Estate  
- Swan Coastal Plain North 20cm Orthomosaic - DLI06

**(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 vegetation under application does not include any Public Drinking Water Source Areas (PDWSA) or PDWSA Protection Zones.

There are no mapped wetlands or watercourses within the vegetation under application, with the closest wetland being a Multiple Use Palusplain to the north and west of the area (~100m away at its closest point). The closest watercourse is a minor non-perennial ~120m from the area under application. Both of these hydrological features are down slope of the area under application which is positioned mid slope in the landscape.

The vegetation under application is associated with gently sloping bench or terrace on the Ridge Hill Shelf with chief soils of hard acidic yellow soils containing ironstone gravels (Northcote et al. 1960-68). These soils may be at risk to water erosion, and result in water quality deterioration in nearby surface hydrological features.

Notwithstanding, given the small area of vegetation applied to be cleared (37 trees over ~0.5ha), the proposed clearing is not considered likely to cause the deterioration in the quality of nearby surface or underground hydrological features.

**Methodology** Reference:  
- Northcote et al. (1960-68)  
GIS Databases:  
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain  
- Hydrography, linear  
- Public Drinking Water Source Areas (PDWSAs)  
- Soils, Statewide  
- Topographic Contours, Statewide

**(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 vegetation under application is associated with gently sloping bench or terrace on the Ridge Hill Shelf with chief soils of hard acidic yellow soils containing ironstone gravels (Northcote et al. 1960-68).  
  
The closest surface hydrological features include a Multiple Use Palusplain ~100m north and west of the area under application, and a minor non-perennial watercourse ~120m from the area under application. Both of these hydrological features are down slope of the area under application which is positioned mid slope in the landscape.  
  
Given the geology of the site, the area's high position in the landscape in relation to surface hydrological features and small amount of vegetation applied to be cleared (37 trees over ~0.5ha) the proposed clearing is not considered likely to cause, or exacerbate, the incidence or intensity of flooding.

**Methodology** Reference:  
- Northcote et al. (1960-68)  
GIS Databases:  
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain  
- Hydrography, linear  
- Soils, Statewide  
- Topographic Contours, Statewide

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

**Comments**  
The vegetation under application is associated with an Aboriginal Site of Significance (S02516 - Jane Brook Upper Site). It is the responsibility of the applicant to ensure that no sites are damaged through the clearing process.  
  
An Extractive Industries Licence from the City of Swan and Approval to Commence Development from the Western Australian Planning Commission (WAPC) have been issued for the proposed works.  
  
A direct interest submission (2007) was received for the proposed clearing of 15 trees. The submission stated that 'while the removal of trees is regrettable, the group supports the clearing application by the applicants. However, the Group requests that offset planting be requested of the company'.

There is no other RIWI Act Licence or Works Approval likely to affect the proposal.  
**Methodology** Reference:  
- Submission (2007)  
GIS Database:  
- Aboriginal Sites of Significance

**4. Assessor's comments**



Purpose	Method	Applied area (ha)/ trees	Comment
Extractive Industry	Mechanical Removal	37	The assessable criteria have been addressed and the clearing as proposed is at variance to Principle (b) and may be at variance to Principle (e).

## 5. References

- Commonwealth of Australia (2001) National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.
- DEC Fauna Habitat Notes (2007) DEC Fauna Habitat Notes.xls February 2007. Department of Environment and Conservation, Western Australia.
- Del Marco, A., Miles, C., Taylor, R., Clarke, K. and Savage, K. (2004) Local Government Biodiversity Planning Guidelines for the Perth Metropolitan Region - Edition 1. Western Australian Local Government Association, West Perth.
- EPA (2006) Guidance for the Assessment of Environmental Factors -level of assessment of proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 Region. Report by the EPA under the Environmental Protection Act 1986. No 10 WA.
- Gibson N., Keighery B., Keighery G., Burbidge A. and Lyons M. (1994). A Floristic Survey of the Southern Swan Coastal Plain. Western Australian Department of Conservation and Land Management and the Western Australian Conservation Council.
- Government of Western Australia (2000) Bush Forever Volumes 1 and 2. Western Australian Planning Commission, Perth WA.
- Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
- 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, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mattiske Consulting (1998) Mapping of vegetation complexes in the South West forest region of Western Australia, CALM.
- Northcote, K. H. with 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.
- Shepherd, D.P. (2006). 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. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.
- 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.
- Site inspection (2007) (TRIM Ref. DOC18971).
- Submission (2007) Direct interest submission for clearing permit application CPS 1738/1. Received 22/03/2007. (TRIM Ref. DOC19236).
- Water and Rivers Commission (2001). Position Statement: Wetlands, Water and Rivers Commission, Perth.
- Wells (1998) A method of assessing water erosion risk in land capability studies - Swan Coastal Plain & Darling Range, Resource Management Technical Report No. 73, Department of Agriculture, Western Australia.

## 6. Glossary

Term	Meaning
BCS	Biodiversity Coordination Section of DEC
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment
DoIR	Department of Industry and Resources
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DEC)

