Australian Government
Department of the Environment

RECEIVED
4 MAR 2015
BY:

Our Reference: 2013/6943

SCAN
CRAIG
MEGAN

Peter Scott
Group General Manager WA
Bristile Holdings Ltd (trading as Austral Bricks (WA) Pty Ltd)
Locked Bag 100
MIDLAND WA 6936

Dear Mr Scott,

Approval of Environmental Management and Offset Strategy,
The expansion of a clay extraction operation on Lot 1 Morangup Road, Morangup, Western Australia (EPBC 2013/6943)

I refer to the Environmental Management and Offset Strategy (EMOS) provided to the Department on 4 February 2015, as required under Condition 4 of the approval decision for EPBC 2013/6943 dated 2 September 2014.

The EMOS has been reviewed by officers of the Department and has been found to meet the requirements of the condition. On this basis, and as delegate of the Minister for the Environment, I have decided to approve the EMOS.

In accordance with condition 4 of EPBC 2013/6943, each approved plan must be implemented. Under condition 10 of EPBC 2013/6943, if Bristile Holdings Ltd wants to act other than in accordance with the approved plan, Bristile Holdings Ltd must submit the revised plan for approval. Until the Minister (or his delegate) has approved the revised plan, Bristile Holdings Ltd must continue to implement the original plan.

The Department has an active monitoring program that includes monitoring inspections, desktop document reviews and audits. As part of this program, we will be undertaking a review of our records to ascertain the present status of this project in relation to its conditions of approval. We will contact you again if we require further information.

Please ensure that you maintain accurate records of all activities associated with, or relevant to the conditions of approval, so that they can be made available to the Department on request. Such documents may be subject to audit and used to verify compliance. Summaries of results of audits may be published by the Department. Information about the monitoring and audit program can be found on the Department's website at www.environment.gov.au/epbc/compliance/auditing.html.

We would appreciate if you could advise us of any changes to the project such as the contact officer, company address or commencement date.

You should note that any transfer of this approval to another person must have the consent of the Minister under section 145B of the EPBC Act.

If you have any enquiries, please contact Vivek Vijayraghavan, by email to vivek.vijayraghavan@environment.gov.au, or by telephone at 02 6275 9205 and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely

Dr Simon Banks
Assistant Secretary
West Assessment Branch
Date: 25/02/15

Note: Under s 491 of the *Environment Protection and Biodiversity Conservation Act 1999* it is an offence to knowingly provide false and/or misleading information to a Departmental officer.

Environmental Management and Offset Strategy

The Expansion of a Clay Extraction Operation on Lot 1 Morangup Road, Morangup Western Australia (EPBC 2013/6943)

Lot 1 Morangup Road, Morangup

Proponent/approval holder

Bristile Holdings Ltd (trading as Austral Bricks WA Pty Ltd) (ABN 34-079-711-603)

To clear vegetation for the expansion of a clay extraction operation on Lot 1 Morangup Road, Morangup Western Australia

Prepared by:

Land Insights
PO Box 289
Mount Lawley WA 6936

Phone: (08) 9271 8506
Email: admin@landinsights.com.au
Web: www.landinsights.com.au

land insights
PLANNING DESIGN ENVIRONMENT

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Declaration of Accuracy

In making this declaration, I am aware that section 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth). The offence is punishable on conviction by imprisonment or a fine or both. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed

Full name (please print)

Organisation (please print)

Date

Document Version Control

Version	File Reference	Author	Reviewer
1a	EMOS – Lot 1 Morangup Road Morangup – Austral Bricks – EPBC 2013 6943 – Version 1a – Oct 2014	Sharee Rasmussen	Michael Taylforth
2a	EMOS – Lot 1 Morangup Road Morangup – Austral Bricks – EPBC 2013 6943 – Version 2a – Feb 2015	Sharee Rasmussen	Michael Taylforth

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Abbreviations

AHD.....Australian Height Datum
DER.....Department of Environment Regulation
DotE.....Department of the Environment
EMOS.....Environmental Management and Offset Strategy
EPBC.....Environmental Protection and Biodiversity Conservation
Ha.....Hectare
Km.....Kilometer

1 Introduction

1.1 Background and Purpose

The Department of the Environment approved the expansion of a clay extraction operation on Lot 1 Morangup Road, Morangup (EPBC reference 2013/6943) on the 2nd September 2014 (Appendix A). The approved action is *to clear vegetation for the expansion of a clay extraction operation on Lot 1 Morangup Road, Morangup Western Australia.* This approval allows for clearing of up to 36.42ha of native vegetation within the project area (stages 1-4) of the existing clay extraction operation (please refer to plans at Appendix B). It is valid until the 31st December 2069.

Condition 4 of the approval requires the preparation of an Environmental Management and Offset Strategy (EMOS) for the Ministers approval which states:

> *To mitigate impacts to black cockatoos, at least three months prior to the commencement of the action, the person taking the action must prepare and submit an Environmental Management and Offset Strategy (EMOS) for the Ministers approval. The EMOS must include, but not be limited to:*
>
> *a) Milestones and objectives*
> *b) Avoidance and mitigation measures to reduce impacts to black cockatoo habitat prior to, during and post mining operations*
> *c) A spatial shapefile of the offset area*
> *d) Measures to exclude weeds and feral animals from the offset area*
> *e) Timeframes for implementation and completion of the above measures*
> *f) Details of monitoring and reporting measures*
> *g) Roles and responsibilities of personnel.*

This report presents the EMOS to satisfy Condition 4 of the approval.

The EMOS also partially addresses Condition 2 of the approval which states:

> *To mitigate impacts to black cockatoos, no clearing within the project area is to occur during the breeding season between July – February.*

The approval provides for clearing of 36.42ha of native vegetation located on Lot 1 Morangup Road, Morangup Western Australia. A 130ha offset site was identified as part of the approvals process. The offset area is located on the same property to the east of the project area. The location of the project area and the offset area is shown on the plan at Appendix B.

Extractive industries have existed on the site for over 50 years and substantial clay resources remain. Future pit expansion areas for the next 40-50 years have been identified to the south of the existing pit. The existing pit is surrounded by native vegetation so expansion in any direction will require clearing, therefore it is not possible to completely avoid impacts on native vegetation.

An offset is proposed to respond to the residual impact of the future pit expansion. An area of 130ha (more than 3 times of the size of the project area) of good quality remnant vegetation has been proposed to be placed under conservation covenant. The offset area has similar environmental values as the project area and will protect habitat for the threatened species of concern. This will ensure that the offset area will be protected from any future pit expansion and extraction and averts the loss of habitat which could potentially be under threat.

1.2 Location

The project area and offset area are located along Morangup Road, approximately 11km to the west of the Toodyay town site. The total area of Lot 1 is approximately 685.39ha and the existing pit is located in the centre of the site and occupies an area of approximately 25ha. The project area is 36.42ha and is located to the west and south of the existing pit. The offset area is located on the eastern side of the property and is 130.3ha in size.

1.3 Past and present land uses

The site has historically been used for timber and agriculture. In the last 50 years it has been used for extractive industries and the surrounding vegetation was left to regenerate. A majority of the property is now covered in vegetation except for the existing pit and access roads.

1.4 Main potential impacts

The main potential impacts are:

- Clearing of 36.42ha of native vegetation
- Impact on habitat suitable for threatened species such as Carnaby's Black Cockatoo, Forest Red-tailed Black Cockatoo and Chuditch
- Removal of 23 trees with large hollows
- Uncontrolled access and trespassing onto the property
- Vegetation degradation such as disease and weed infestation (particularly as a result of uncontrolled access and edge effects).

1.5 Primary strategies

Primary strategies to address the impacts listed above are as follows:

- Ensure clearing doesn't take place within the project area during the black cockatoo breeding season between July – February
- Fencing the perimeter of the offset area where it adjoins other properties and the road reserve
- Placing signs along the property boundary to advise the public not to enter the site
- Excluding public access to the property, including the offset area
- Discouraging access of vehicles and personnel to vegetation surrounding the pit area
- Maintaining a fire break along the eastern side of the offset area and along the property boundary
- Passive surveillance of vegetation to observe any weed infestations, feral animals or dieback
- Undertake weed control and feral animal control where appropriate
- Maintaining the perimeter fence and signs.

A number of mitigation measures have been incorporated into the project as follows:

- The project area was previously modified to avoid impact on trees with large hollows on the eastern side of the pit
- The impact on trees with large hollows was reduced from 49 trees to 23

- An offset is proposed to respond to the residual impact of the future pit expansion
- An area of 130ha (more than 3 times of the size of the application area) of good quality remnant vegetation is proposed to be placed under conservation covenant
- The offset area has similar environmental values as the project area and will protect habitat for the threatened species of concern
- The offset area will be protected from any future pit expansion and extraction and averts the loss of habitat which could potentially be under threat.

1.6 Milestones and objectives

The vegetation within the offset area already exists, therefore the purpose of the offset is not habitat gain but to protect the existing vegetation from degradation. The priority management objective for the offset area is to maintain and protect the area in perpetuity, particularly to protect habitat for black cockatoos. A conservation covenant will be placed across the offset area to provide formal protection.

The objectives of the EMOS are as follows:

- To protect the vegetation within the offset area in perpetuity
- To avoid and minimise disturbance to the vegetation surrounding the excavation pit and the offset area
- To avoid and minimise weed infestations and dieback to the offset area and to the vegetation surrounding the extraction pit
- To provide an ecological linkage across the landscape through the protection of the offset area.

The milestones for the offset area are:

- Within one year the area will be surveyed and the conservation covenant will be in place
- Each year the offset area will be monitored and managed by Austral Bricks to ensure the vegetation appears healthy and there are no signs of dieback or significant weed infestations.

2 Conditions of Approval Reference Table

The Conditions of Approval Reference Table is provided below as required by the Environmental Management Plan Guidelines (DotE, 2014).

Table 2.1 – Conditions of Approval Reference Table

Ref	Condition	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
1	2	*To mitigate impacts to black cockatoos, no clearing within the project area is to occur during the breeding season between July – February.*	Section 5.3	Section 5.3 of the plan includes procedures to avoid and mitigate impacts, including the following: *Clearing within the application area will only take place during non-breeding times for Carnaby's Black Cockatoo and Forest Red-tailed Black Cockatoo. Breeding times for Carnaby's Black Cockatoo is from between July/August and January/February and in October/November for Forest Red-tailed Black Cockatoo (Referral Guidelines for Three Threatened Back Cockatoo Species, DSEWPC). Clearing will take place in between March – June.*
2	4(a)	*To mitigate impacts to black cockatoos, at least three months prior to the commencement of the action, the person taking the action must prepare and submit an Environmental Management and Offset Strategy (EMOS) for the Ministers approval. The EMOS must include, but not be limited to:* *Milestones and objectives*	Section 1.6	This EMOS includes the milestone and objectives at Section 1.6
3	4(b)	*Avoidance and mitigation measures to reduce impacts to black cockatoo habitat prior to, during and post mining operations*	Section 5.3	Section 5.3 of the plan includes procedures to avoid and mitigate impacts on black cockatoo habitat prior to, during and post mining operations.
4	4(c)	*A spatial shapefile of the offset area*	Attached	The spatial shapefile is attached to this plan in digital format.
5	4(d)	*Measures to exclude weeds and feral animals from the offset area*	Section 5.2	The plan includes management measures to exclude weeds and feral animals from the offset area in Section 5.2.
6	4(e)	*Timeframes for implementation and completion of the above measures*	Section 5.4, Table 5.2	The plan includes timeframes at section 5.4.

Ref	Condition	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
7	4(f)	*Details of monitoring and reporting measures*	Section 5.5	The plan includes monitoring and reporting requirements at section 5.5.
8	4(g)	*Roles and responsibilities of personnel.*	Section 5.6, Table 5.3	The plan outlines role and responsibilities in section 5.6 and Table 5.3.
9	7	*The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the EMOS required by this approval, and make them available upon request to the Department.*	Section 5.5	The plan includes reporting requirements at section 5.5.
10	8	*By 1 March of each year after the commencement of the action, the person taking the action must publish a report on their website addressing compliance with the conditions of this approval over the previous 12 months, including implementation of any management plans as specified in the conditions.*	Section 5.5	The plan includes reporting requirements at section 5.5.

3 Environmental Context

3.1 Regional context

The site is located along Morangup Road, approximately 11km to the west of the Toodyay town site. Surrounding land uses include other extraction sites (Boral Bricks) to the east and south, rural activities and conservation reserves. The Avon Valley National Park, Moondyne Nature Reserve and a timber reserve are located to the west; the Julimar State Forest is located to the north and the Morangup Nature Reserve is located to the south. The extraction pit is located in the centre of a vegetated property which itself is set in a landscape of rural land with areas of remnant vegetation. The offset area is located in an area of intact vegetation and abuts remnant vegetation on the adjoining property.

3.2 Topography and Landform

The site is gently undulating and on average ranges in elevation between 240 and 260 metres AHD. Topography throughout the property varies and a number of minor watercourses cut through the landscape. The highest points on the property are the southern end and along the eastern edge at approximately 280m AHD to 300m AHD. The land slopes away from the edges of the pit to the east, north and west.

3.3 Geology

A geological assessment on Lot 1 Morangup Road, Morangup was undertaken by Pitt Partnership Pty Ltd for Austral Bricks to investigate the geology of the Offset Area. The information provided below is sourced from that investigation.

The geology of the Toodyay region is dominated by Archaean rocks of the Jimperding Metamorphic Belt. The Belt is described by Wilde and Low (1978) as containing a wide range of lithologies including gneiss, schist, amphibolite, quartzite, banded iron formations, mafic granulite and intrusive ultramafics.

A number of geological traverses were undertaken across the proposed offset area via GPS navigation through the forest and along access tracks. The dominant rock type in the area is quartzite. Minor dolerite sub crops; after north trending Proterozoic dykes; varying up to 15m in width were found throughout the entire area. The southern end of the area, adjacent to the neighbouring Squarcini pit, is predominantly covered in laterite. Observations of the Squarcini pit and from mining of the Schist pit show that laterite, up to 3 m thick, is preferentially developed in quartz-mica schist.

3.4 Hydrology

Mortigup Brook, a minor tributary of the Avon River, is situated to the north-east of the pit area. It flows from south to north and does not flow into the pit area. A number of small drainage lines flow into the Brook. None of the drainage lines flow into the pit and no water flows from the pit into drainage lines or into Mortigup Brook.

Water runoff from the pit area and surrounding cleared areas is directed into the drainage basins located at the northern end of the pit and is not permitted to drain into surrounding vegetation or drainage lines or into Mortigup Brook. There will be no direct disturbance to the Mortigup Brook as part of the extractive industry activities. No dewatering takes place on site and therefore groundwater levels will not be directly impacted as part of the extractive industry activities.

The property is not located within a Public Drinking Water Source Area or a Proclaimed Groundwater Area.

3.5 Vegetation and habitat

A Spring Flora Survey was undertaken by Del Botanics across the project area (October 2012 and November 2013) and the offset area (November 2013). The survey identified the vegetation type and condition across the project area and offset area.

The vegetation in the project area consists of Marri-jarrah woodland across the southern section. Wandoo woodland across the northern part and to the west and east of the existing pit. The offset area consists of Powderbark woodland across the northern third, Wandoo woodland through the centre and marri/jarrah woodland at the southern end.

The vegetation condition was rated according to the vegetation condition scale as developed by Keighery (1994) from Bush Forever Volume 2 (WAPC, 2000). The vegetation within the project area ranges from *Very Good* to *Excellent* and *Completely Degraded* along existing tracks. A majority of the offset area is of *Excellent* condition, with the southern end classified as *Very Good* and a patch of *Good* condition at the south-east corner.

A level 1 fauna survey and targeted black cockatoo and Chuditch survey was undertaken by Western Wildlife in August 2012. The survey found that three main habitats within the project area; Wandoo woodland, Jarrah-Marri woodland and revegetation areas. It was also observed that these habitats are widely represented in the surrounding area. The study identified approximately 100 trees with large hollows of suitable size for use by black cockatoos within the project area and surrounding vegetation. The project area was modified to avoid a majority of these trees. The number of trees with large hollows of suitable size for use by black cockatoos within the project area is 23, meaning that a majority of trees with large hollows will remain.

The vegetation in the offset area is similar to that found in the project area, including trees which can be used by Black Cockatoos (such as Wandoo, Marri and Jarrah) and habitat suitable for Chuditch. The northern section consists of Powderbark woodland which is known to be used for breeding by Carnaby's Black Cockatoo. The offset area is over 3 times the size of the application area, protecting a substantially greater habitat area.

4 Potential environmental impacts and risks

4.1 Threats to matters protected under the EPBC Act

This section describes the threats to matters of protected under the EPBC Act. The matter of national significance relevant to the action is the potential impact to *threatened species and communities*. This was addressed in the assessment documentation through the provision of flora and habitat surveys and the proposal to create an offset area. Threats to the environment in general were also addressed in the assessment documentation.

4.2 Potential impacts

Information on potential impacts was provided in the assessment documentation provided to the DotE. A summary of potential impacts is provided below:

- Direct impacts on species through habitat disturbance (including vegetation clearing, noise, traffic etc.) within the operation footprint
- Indirect impacts on the species such as displacement into adjacent habitat which could be occupied by animals of the same species or other species and edge effects on surrounding habitat
- Short-term impacts on food supply and potential nesting habitat from clearing
- Loss of vegetation as a result of clearing within the project area
- Vegetation degradation (weeds, disease, plant death etc) in vegetation surrounding the project area
- Vegetation degradation (weeds, disease, plant death etc) in vegetation within the offset area
- Uncontrolled access to the vegetation surrounding the project area and the offset area.

4.3 Risk assessment

The risk assessment is provided below in accordance with the methodology described in the Environmental Management Plan Guidelines (DotE, 2014). The purpose of the risk assessment is to ensure that risks are translated into mitigation and management actions.

Table 4.1 – Risk Rating for Potential Impacts

Potential impact	Likelihood	Consequence	Risk Rating
Loss of habitat for threatened species (in particular black cockatoos and Chuditch) through vegetation removal, noise, traffic etc.	Highly likely	High	High
Indirect impacts on threatened species such as displacement into adjacent habitat which could be occupied by animals of the same species or other species and edge effects on surrounding habitat.	Highly likely	Moderate	High
Short-term impacts on food supply and potential nesting habitat from clearing.	Highly likely	Moderate	High
Loss of vegetation as a result of clearing within the project area.	Highly likely	High	High
Vegetation degradation (weeds, disease, plant death etc) in vegetation surrounding the project area.	Possible	Moderate	Medium
Vegetation degradation (weeds, disease, plant death etc) in vegetation within the offset area.	Possible	Moderate	Medium
Uncontrolled access to the vegetation surrounding the project area and the offset area.	Possible	Moderate	Medium

The loss of habitat for threatened species and loss of vegetation as a result of clearing is addressed through the mitigation efforts (i.e. adjustment of the project area to reduce impacts on trees with hollows etc.) and through the creation of an offset area which will be protected by a conservation covenant. The purpose of these measures is to reduce the impact and risk rating. Management actions are discussed further in Section 5 below.

5 Environmental Management

5.1 Introduction

The offset area is already vegetated with good quality vegetation. The vegetation surrounding the pit is also in good condition. Management will be passive in nature rather than active as the focus will be on maintaining vegetation quality and improving over time by reducing disturbance and impacts from outside influence.

5.2 Environmental management activities

Summary

A summary of the environmental management activities is provided below. The potential impacts are listed in Section 4 above are listed in Table 5.1 below and the management activities, monitoring, corrective action and schedule is provided. Detailed information on access, weed, disease and feral animal control is provided below.

Table 5.1 – Summary of Environmental Management Activities

Potential impact	Risk rating	Management activities and controls	Performance targets	Monitoring program	Corrective action	Timeframe
Loss of habitat for threatened species (in particular black cockatoos and Chuditch) through vegetation removal, noise, traffic etc.	High	1. Provide offset area and place under conservation covenant to provide for future protection.	Conservation covenant in place.	Monitor progress of covenant application.	Apply for covenant.	To be completed by Dec 2015. .
		2. The project area will be cleared in stages over the next 40-50 years so loss of habitat will be gradual.	Clearing in stages, confirmed through observation of aerial photography.	Monitor clearing through site management and review of aerial photos.	Quarry manager to ensure clearing occurs gradually over the next 40-50 years.	Ongoing.
Indirect impacts on the species such as displacement into adjacent habitat which could be occupied by animals of the same species or other species and edge effects on surrounding habitat	High	1. Reduce vegetation disturbance to vegetation surrounding the pit to provide habitat for threatened fauna across the remainder of the property.	Vegetation condition doesn't deteriorate below existing condition.	Monitor vegetation surrounding the pit for signs of vegetation disturbance.	Access control, weed control, disease control as appropriate.	Ongoing
		2. Access control to surrounding vegetation and throughout the remainder of the site.	No new access tracks are created.	Monitor vegetation surrounding the pit for signs of access tracks.	Educate workers on site.	Ongoing

Potential impact	Risk rating	Management activities and controls	Performance targets	Monitoring program	Corrective action	Timeframe
		3. The project area will be cleared in stages over the next 40-50 years so loss of habitat will be gradual.	Clearing in stages, confirmed through observation of aerial photography.	Monitor clearing through site management and review of aerial photos.	Quarry manager to ensure clearing occurs gradually over the next 40-50 years.	Ongoing
Short-term impacts on food supply and potential nesting habitat from clearing	High	1. Reduce vegetation disturbance to vegetation surrounding the pit to provide habitat for threatened fauna across the remainder of the property.	Vegetation condition doesn't deteriorate below existing condition.	Monitor vegetation surrounding the pit for signs of vegetation disturbance.	Access control, weed control, disease control as appropriate.	Ongoing
		2. Access control to surrounding vegetation and throughout the remainder of the site.	No new access tracks are created.	Monitor vegetation surrounding the pit for signs of access tracks.	Educate workers on site.	Ongoing
		3. The project area will be cleared in stages over the next 40-50 years so loss of habitat will be gradual.	Clearing in stages, confirmed through observation of aerial photography.	Monitor clearing through site management and review of aerial photos.	Quarry manager to ensure clearing occurs gradually over the next 40-50 years.	Ongoing
Loss of vegetation as a result of clearing within the project area.	High	1. Provide offset area and place under conservation covenant to provide for future protection.	Conservation covenant in place.	Monitor progress of covenant application.	Apply for covenant.	To be completed by Dec 2015.
Edge effects and vegetation degradation (weeds, disease, plant death etc) on vegetation surrounding the project area	Medium	1. Avoid disturbance of existing vegetation surrounding the pit area through access control and education of workers on site.	No new access tracks are observed.	Monitor staff movements and monitor vegetation surrounding the pit for signs of access tracks.	Ensure staff are educated about their environmental responsibilities	Ongoing
		2. Undertake weed, disease and access control if required.	Vegetation condition doesn't deteriorate	Monitor condition of vegetation around the edge of the pit for signs	Access control, weed control, disease control as appropriate.	Ongoing

Potential impact	Risk rating	Management activities and controls	Performance targets	Monitoring program	Corrective action	Timeframe
			below existing condition.	of further weeds and degradation		
Edge effects and vegetation degradation (weeds, disease, plant death etc) on vegetation within the offset area.	Medium	1. Avoid disturbance of the offset area through access control and education of workers on site.	No new access tracks are observed.	Monitor staff movements and vegetation for signs of access tracks.	Ensure staff are educated about their environmental responsibilities.	Ongoing
		2. Undertake weed, disease and access control if required.	Vegetation condition doesn't deteriorate below existing condition.	Monitor condition of vegetation for signs of further weeds and degradation	Access control, weed control, disease control as appropriate.	Ongoing
Uncontrolled access	Medium	1. Perimeter fence and signs around the property to keep public out.	Fence and signs are in good condition.	Public trespassers will be monitored where possible.	Public trespassers will prosecuted as appropriate.	Ongoing
		2. Keep staff movements to existing access tracks and within the pit area/footprint.	No new access tracks are observed.	Monitor staff movements and vegetation for signs of access tracks.	Ensure staff are educated about their environmental responsibilities.	Ongoing

Access management

The following management actions relate to access management:

1. Access to Lot 1 is prohibited to the public. The property perimeter is currently fenced and signposted to warn the public that the site is an active extraction operation and to keep out. All gates are locked to exclude the public from the site. Only authorised personnel are permitted to enter the site. This will help keep disturbance to the offset area to a minimum.

2. Workers keep to the existing tracks and pit area and are not permitted to walk through or drive vehicles or machinery through surrounding vegetation. The activities on site keep to existing cleared areas such as tracks and pits. Therefore, there is a low risk of spread of dieback and weeds into the vegetation. Workers will also be separated from the offset area which means this area will remain undisturbed.

3. An existing firebreak is located along the eastern and southern boundary of the property which allows for passive surveillance of the offset area.

Weed and disease control

The following management actions relate to weed and disease control:

1. Through the actions described above, both the public and onsite workers will be excluded from the offset area and from the vegetation surrounding the extraction site. This will help to reduce disturbance to native vegetation and the risk of spreading weeds and disease such as dieback.

2. Firebreaks are located around the Lot 1 property boundary. A firebreak is located along the eastern and southern side of the offset area. This provides an opportunity for passive surveillance of the area to observe vegetation quality and condition (such as presence of dieback and weeds). The vegetation surrounding the pit can be observed from the tracks located around the perimeter of the pit and through various parts of the property.

3. If passive surveillance indicates that dieback is spreading or occurring in parts of the offset area where is doesn't already exist, the following actions will be undertaken:
   - Further dieback investigations will be carried out to determine the exact extent of the affected area
   - A dieback management plan will be prepared
   - Alternative drainage options will be considered as a way to reduce further spread of the disease.

4. If weeds are worsening or a prevalent weed infestation is observed, the following corrective actions will be undertaken:
   - If noxious weeds are observed these will be removed either by physical means or through the use of appropriate herbicides.

Feral animal control

The perimeter fence also helps to keep feral animals out of the property. An internal fence is not proposed along the western and northern boundary of the offset area as this can impede the movement of native fauna throughout the landscape (particularly Chuditch which are known to travel across vegetated areas). Keeping the western and northern boundary of the offset area unfenced is not expected to have a detrimental impact on black cockatoo habitat.

The boundary fence is a basic farm fence consisting of steel fence uprights with timber box struts and strainers along with ring lock and 3 barbed wires at the top of fence. It is 1.5m in height. The site is secured with a steel locked gate at the entrance.

Surveillance

The offset area will be monitored by Austral Bricks through passive surveillance. There are no revegetation requirements and the site is already covered in good quality vegetation. Therefore, the offset area only requires passive monitoring over time to ensure that areas are not becoming degraded through weeds, dieback or disturbance. Vehicles can be driven along the existing firebreaks along the eastern and southern perimeter of the offset area which will not result in disturbance to vegetation.

If there are any signs of dieback or an invasion of weeds, Austral Bricks will conduct further investigations and remediation as appropriate.

5.3 Avoidance and mitigation

A number of avoidance and mitigation measures will be used to reduce impact on black cockatoos. These are detailed below.

Prior to operations:

1. The project area was shifted to the west to avoid a particularly dense number of trees with large hollows to reduce the impact on habitat trees for black cockatoos. The number of trees with large hollows identified in the original application was 49 and was reduced to 23 trees.

During operations:

2. Clearing of habitat trees will be avoided if possible, particularly along the edges of the project area. Trees will be tagged so that workers will be able to identify them when clearing. The quality of the material in the new extraction area will be tested over time and if areas are found with poorer quality material which will not be excavated these areas will not be cleared. This will potentially reduce and avoid the amount of clearing that will take place.

3. Extraction activities are restricted to the pit area and tracks. Personnel and vehicles are discouraged from entering surrounding vegetation. This is to prevent spread of weeds and dieback and disturbance to vegetation. As a result, habitat in the vegetation surrounding the application area and existing extraction site will be protected from disturbance.

4. A dieback assessment was conducted in January 2014 across the project area and no evidence of dieback was found. Therefore, there is a very low risk of dieback spreading into surrounding vegetation and affecting habitat values. To prevent possible infestation, vehicles and personnel will be prohibited from entering surrounding vegetation.

5. All runoff is retained within the existing extraction area and not permitted to drain into surrounding vegetation. Water detention basins are located within the extraction area and water is diverted into the basin to prevent runoff into surrounding vegetation. Existing detention basins are of adequate size to accommodate water runoff associated with rainfall events. The soil types are predominantly clay which have good cohesion and have low erosion risk to begin with. Erosion is managed within the extraction area through the use of batter slopes. These measures will help protect existing habitat values and will mitigate impacts such as erosion.

6. Clearing within the application area will only take place during non-breeding times for Carnaby's Black Cockatoo and Forest Red-tailed Black Cockatoo. Breeding times for Carnaby's Black Cockatoo is from between July/August and January/February and in October/November for Forest Red-tailed Black Cockatoo (Referral Guidelines for Three Threatened Back Cockatoo Species, DSEWPC). Clearing will take place in between March – June. This satisfies Condition 2 of the approval.

Post operations:

7. Following decommissioning of the site, pit area will be rehabilitated and revegetated with native species in accordance with the Rehabilitation Management Plan for the site. This will replace vegetation which has been cleared over the years to facilitate mining and will substantially increase the total area of remnant vegetation on the property. The historical use of the site has been for broad acre farming and timber production, and for extractive industries for the last 50 years. Therefore, it is expected that upon decommissioning, the site will be rehabilitated to fit with the existing landscape and will be rehabilitated. The old pit areas will remain as slight depressions in the landscape and these will be recontoured into wetland habitats. The remainder of the site will be recontoured with overburden and rehabilitated with native species. This will result in returning local species to the area and provide a habitat for native fauna across an area.

5.4 Timeframe

The timeframe for implementation of the above management actions is set out below.

Table 5.2 – Timeframe

Action	Timeframe	Duration
Survey plan of the offset area is prepared.	By 31st December 2015	N/A
Conservation covenant is finalised.	By 31st December 2015	N/A
Maintenance of firebreaks.	Ongoing	Until the landowner sells the property.
Passive surveillance of the offset area and the vegetation surrounding the pit.	Yearly	Until the landowner sells the property.
Maintenance of fences, firebreaks and signs.	Ongoing	Until the landowner sells the property.
Records kept of actions on site.	Ongoing	Until the action is complete or the approval expires (on the 31st December 2069), whichever is sooner.
Annual Report of actions which addresses compliance with the conditions of the approval over the previous 12 months.	Yearly (published before the 1st March each year after commencement of the action)	Until the action is complete or the approval expires (on the 31st December 2069), whichever is sooner.
EMOS review/audit	Every 5 years	Until the action is complete or the approval expires (whichever is sooner).

5.5 Reporting

Reporting to the Department of Environment Regulation and the Department of the Environment will take place as required by the separate approvals.

As a requirement of Condition 7 of the approval, Austral Bricks will maintain records substantiating all activities associated with or relevant to the conditions of the approval, including measures taken to implement the EMOS requirements. Information recorded will include the following:

- Dates that clearing takes place
- Maps showing the areas cleared
- Copy of the surveyors plan of the offset area
- Copy of the Conservation Covenant
- Dates and notes from passive surveillance/monitoring of the offset area and vegetation surrounding the pit
- Any weed control, dieback control and feral animal control undertaken
- Any maintenance of fencing, firebreaks and signs.

As a requirement of Condition 8 of the approval, Austral Bricks will publish a report to their website which addresses compliance with the conditions of the approval over the previous 12 months. The report will be published by 1 March each year after the commencement of the action.

This EMOS will be periodically reviewed to assess its effectiveness and whether it is achieving the objectives of the plan (set out in Section 1.6). The review is required to consider annual reports (as described above), monitoring results and any corrective action undertaken to determine whether the actions set out in the EMOS are effective in achieving the objectives of the plan and the conditions of approval. The review will be conducted once every 5 years until the action is complete or the approval expires (whichever is sooner). Austral Bricks (WA) Pty Ltd will be responsible for the review and reporting the results to the DotE.

5.6 Roles and responsibilities

Input from relevant government agencies, including the Department of Environment Regulation and the Department of the Environment, has been sought and implemented during the preparation of this EMOS. Accordingly, it is expected to remain current for the duration of the time that Austral Bricks (WA) Pty Ltd retain responsibility for the site.

Roles and responsibility for implementation of the actions set out in this EMOS are detailed below.

Table 5.3 – Roles and Responsibilities

Action	Responsibility	Role
Survey of the offset area	Austral Bricks (WA) Pty Ltd and surveyor subcontractors	• Survey subcontractors to undertake the fieldwork and prepare the plan. • Austral Bricks to manage the task.
Conservation covenant	Austral Bricks (WA) Pty Ltd, consultants and Department of Agriculture and Food/Commissioner	• Consultants to prepare the paperwork • Austral Bricks to manage the task • Department of Agriculture and Food/Commissioner to assess the application and arrange the covenant.
Monitoring the offset area and vegetation surrounding the pit.	Austral Bricks (WA) Pty Ltd	• Austral Bricks to observe the general condition and health of the vegetation surrounding the pit and through the offset area, particularly the occurrence of weeds, dieback and feral animals.
Maintenance of fencing, firebreaks and signage	Austral Bricks (WA) Pty Ltd	• Austral Bricks to repair, replace and maintain fencing, firebreaks and signs around the property and the offset area.
Reporting in accordance with the DotE approval	Austral Bricks (WA) Pty Ltd	• Austral Bricks will maintain records substantiating all activities associated with or relevant to the conditions of the approval, including measures taken to implement the EMOS requirements. • Austral Bricks to write a report addressing compliance with the conditions of the approval over the previous 12 months and to publish it on their website by the 1st March of each year after commencement of the action.
EMOS review/audit	Austral Bricks (WA) Pty Ltd	• Austral Bricks will review the effectiveness of the EMOS every 5 years • A report will be provided to the DotE on the outcomes of the review.

5.7 Environmental Training

The purpose of environmental training is to provide relevant personnel with the knowledge required to carry out the requirements of the EMOS and to ensure appropriate environmental management takes place on site.

Operations on site only require a small number of personnel or workers on site at any one time. Workers are restricted to tracks and the pit area and are not permitted into the surrounding vegetation. Monitoring of vegetation surrounding the pit area and the offset area will be undertaken by certain personnel. These staff members will receive training so they know what to look for and what to observe when undertaking passive monitoring and surveillance of vegetation. Training will also inform staff of the requirements of environmental management and the individual's role, particularly the implementation of this EMOS, the environmental emergency incident response procedures, site environmental controls and the consequences of not meeting their environmental responsibilities.

Records of training will be maintained by Austral Bricks, including the names of the people receiving training and conducting training, the date the training was received and a summary of the training.

Existing procedures are in place to ensure compliance with Austral Bricks environmental responsibilities. Environmental training is provided as part of the Emergency Management Plan (discussed further below) and contractors are required to have their own environmental management plans in place. Contractors are also required to attend induction meetings to educate them about their environmental responsibilities for each site.

Austral Bricks also runs 'pre-start meetings' with all workers before they commence work on site. The purpose of this meeting is to discuss their activities, procedures and responsibilities, including environmental responsibilities. 'Toolbox meetings' are also held once a week while operations take place on site which allows workers to share information, provide updates and to discuss any issues, including any environmental-related concerns.

5.8 Emergency contacts and procedures

The activities related to the EMOS are not considered to be high risk and therefore the emergency procedures are relatively low key. Most potential emergency situation relates to the quarry itself and is dealt with under different legislation and policies. Austral Bricks have an Emergency Management Plans and emergency spill response procedures in place. The Emergency Management Plan includes procedures to report an emergency, site evacuation procedures and the actions required to deal with an emergency. The Quarry Manager performs the role of incident controller. Contractors are required to attend induction meetings to provide them with the emergency procedures and their environmental responsibilities. The induction meetings are site specific (i.e. they explain the various procedures and requirements relating specifically for the site they are working on).

The key emergency contacts are:

- Craig O'Connor – Resources Manager WA
- Trevor Tadman – Quarry Manager WA
- Ian Horton – Quarry supervisor WA

6 References

Del Botanics, (2013), *Flora and Vegetation Assessment Lot 1 Morangup Road, Morangup*, Del Botanics, WA.

Del Botanics (2014), *Flora and Vegetation Assessment Offset areas 1 and 2 Lot 1 Morangup Road, Morangup*, Del Botanics, WA.

Nind, M. (2014), *Geological Assessment of Potential Offset Area Lot 1 Morangup Road, Morangup*, Austral Bricks Pty Ltd, WA.

Wilde, S.A. & Low, G.H., 1978. *Explanatory notes on the Perth 1:250,000 geological sheet*, Western Australia: West. Australia Geol. Survey, 36 pp.

Western Wildlife (2012), *Austral Bricks Morangup Rd Quarry Level 1 Fauna Survey 2012*, Western Wildlife, WA.

APPENDIX A

Department of the Environment Approval

Australian Government
Department of the Environment

Approval
The expansion of a clay extraction operation Lot 1 Morangup Road, Morangup, Western Australia (EPBC 2013/6943)

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

Proposed action

person to whom the approval is granted	Bristile Holdings Ltd (trading as Austral Bricks (WA) Pty Ltd)
proponent's ACN (if applicable)	ACN: 34 079 711 603
proposed action	To clear vegetation for the expansion of a clay extraction operation on Lot 1 Morangup Road, Morangup, Western Australia [See EPBC Act Referral 2013/6943].

Approval decision

Controlling Provision	Decision
Listed threatened species and communities (s18 & 18A)	Approved

Conditions of approval

This approval is subject to the conditions specified below.

Expiry date of approval

This approval has effect until 31 December 2069.

Decision-maker

name and position	Dr Simon Banks Assistant Secretary West Assessment Branch
signature	Simon Banks
date of decision	02/09/14

Conditions attached to the approval

1. The person taking **the action** must not **clear** more than 36.42 ha of native vegetation within the **project area** identified as 'Stages 1-4' at Schedule 1. No other native vegetation is to be cleared within the **project area**.
2. To mitigate impacts to **black cockatoos**, no **clearing** within the **project area** is to occur during the breeding season between July-February
3. To offset the loss of habitat for **black cockatoos**, within 2 years of the date of this approval, the person taking **the action** must provide written evidence to the **Department** that a legally binding **conservation covenant** has been registered over the **offset area** identified at Schedule 1.
4. To mitigate impacts to **black cockatoos**, at least three months prior to the **commencement** of the action, the person taking **the action** must prepare and submit an Environmental Management and Offset Strategy (EMOS) for the **Ministers** approval. The EMOS must include, but not be limited to:
   a) Milestones and objectives of the EMOS;
   b) Avoidance and mitigation measures to reduce impacts to **black cockatoo** habitat prior to, during and post mining operations;
   c) A spatial **shapefile** including **offset attributes** of the **offset area**;
   d) Measures to exclude weeds and feral animals from the **offset area**;
   e) Timeframes for the implementation and completion of the above measures;
   f) Details of monitoring and reporting measures; and
   g) Roles and responsibilities of personnel associated with implementing each of the above measures.

   The person taking the action must not undertake any **clearing** of habitat for **black cockatoos** within the **project area** unless the EMOS has been approved by the **Minister**. If the **Minister** approves the EMOS, then the approved EMOS must be implemented.
5. To mitigate potential impacts to **black cockatoo** habitat adjacent to the **project area**, the person taking **the action** must ensure that the following measure is carried out to limit the occurrence of **Dieback** (Phytophthora cinnamomi) on site.
   i) All vehicles being used during **construction** that have come from a **Dieback** affected area must be washed down prior to entering the **project area** in accordance with **WA DPaW** management of **Dieback** in extractive industries guidelines.
6. Within 30 days after the **commencement** of the action, the person taking the action must advise the **Department** in writing of the actual date of **commencement**.
7. The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the EMOS required by this approval, and make them available upon request to the **Department**. Such records may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the **Department's** website. The results of audits may also be publicised through the general media.
8. By 1 March of each year after the **commencement** of the action, the person taking **the action** must publish a report on their website addressing compliance with the conditions of

this approval over the previous 12 months, including implementation of any management plans as specified in the conditions. Potential or actual contraventions of the conditions of the approval must be reported to the **Department** in writing within 2 business days of the person taking **the action** becoming aware of the potential or actual contravention. All contraventions must also be included in the compliance report.

9. Upon the direction of the **Minister**, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the **Minister**. The independent auditor must be approved by the **Minister** prior to the **commencement** of the audit. Audit criteria must be agreed to by the **Minister** and the audit report must address the criteria to the satisfaction of the **Minister**.

10. If the person taking the action wishes to carry out any activity otherwise than in accordance with the EMOS as specified in the conditions, the person taking the action must submit to the **Department** for the **Minister's** written approval a revised version of that EMOS. The varied activity shall not **commence** until the **Minister** has approved the varied EMOS in writing. The **Minister** will not approve a varied EMOS unless the revised EMOS would result in an equivalent or improved environmental outcome over time. If the **Minister** approves the revised EMOS, that EMOS must be implemented in place of the EMOS originally approved.

11. If the **Minister** believes that it is necessary or convenient for the better protection of listed threatened species to do so, the **Minister** may request that the person taking the action make specified revisions to the EMOS specified in the conditions and submit the revised EMOS for the **Minister's** written approval. The person taking the action must comply with any such request. The revised approved EMOS must be implemented. Unless the **Minister** has approved the revised EMOS, then the person taking the action must continue to implement the EMOS originally approved, as specified in the conditions.

12. If, at any time after five (5) years from the date of this approval, the person taking the action has not **commenced** the action, then the person taking the action must not **commence** this action without the written agreement of the **Minister**.

13. Unless otherwise agreed to in writing by the **Minister**, the person taking the action must publish the EMOS referred to in these conditions of approval on their website. The EMOS must be published on the website within 1 month of being approved. The person taking **the action** must notify the **Department** within 5 business days of publishing the EMOS on their website and the EMOS must remain on the website for the period this approval has effect.

Definitions

Black cockatoos are defined as the endangered Carnaby's Black-Cockatoo (*Calyptorhynchus latirostris*) and the vulnerable Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*).

Clear or **clearing** is defined as the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of native vegetation.

Commence, commenced or **commencement** includes **clearing** and any preparatory works required to be undertaken including clearing vegetation, the erection of any fences, signage or on-site temporary structures and the use of construction or excavation equipment on-site for the purpose of breaking the ground for buildings, infrastructure or resource extraction.

Conservation covenant is a promise contained in a deed to land or real estate which is binding upon the current owner and all future owners. It defines the limitations, conditions or restrictions on the use of that land that have been put in place for the purpose of protecting and enhancing the natural, cultural and/or scientific values of certain land.

Construction includes any preparatory works required to be undertaken, including clearing vegetation, the erection of any on-site temporary structures and the use of heavy duty equipment for the purpose of breaking the ground for extractive industries, buildings or infrastructure.

The **Department** is the Australian Government Department administering the *Environment Protection and Biodiversity Conservation Act 1999*.

Dieback (*Phytophthora cinnamomi*) is a soil-borne water mould that produces an infection which causes a condition in plants called root rot or dieback. The plant pathogen is one of the world's most invasive species.

The **Minister** is the Minister administering the *Environment Protection and Biodiversity Conservation Act 1999* and includes a delegate of the Minister.

Project area is identified by the area defined as 'Stages 1-4' at Schedule 1.

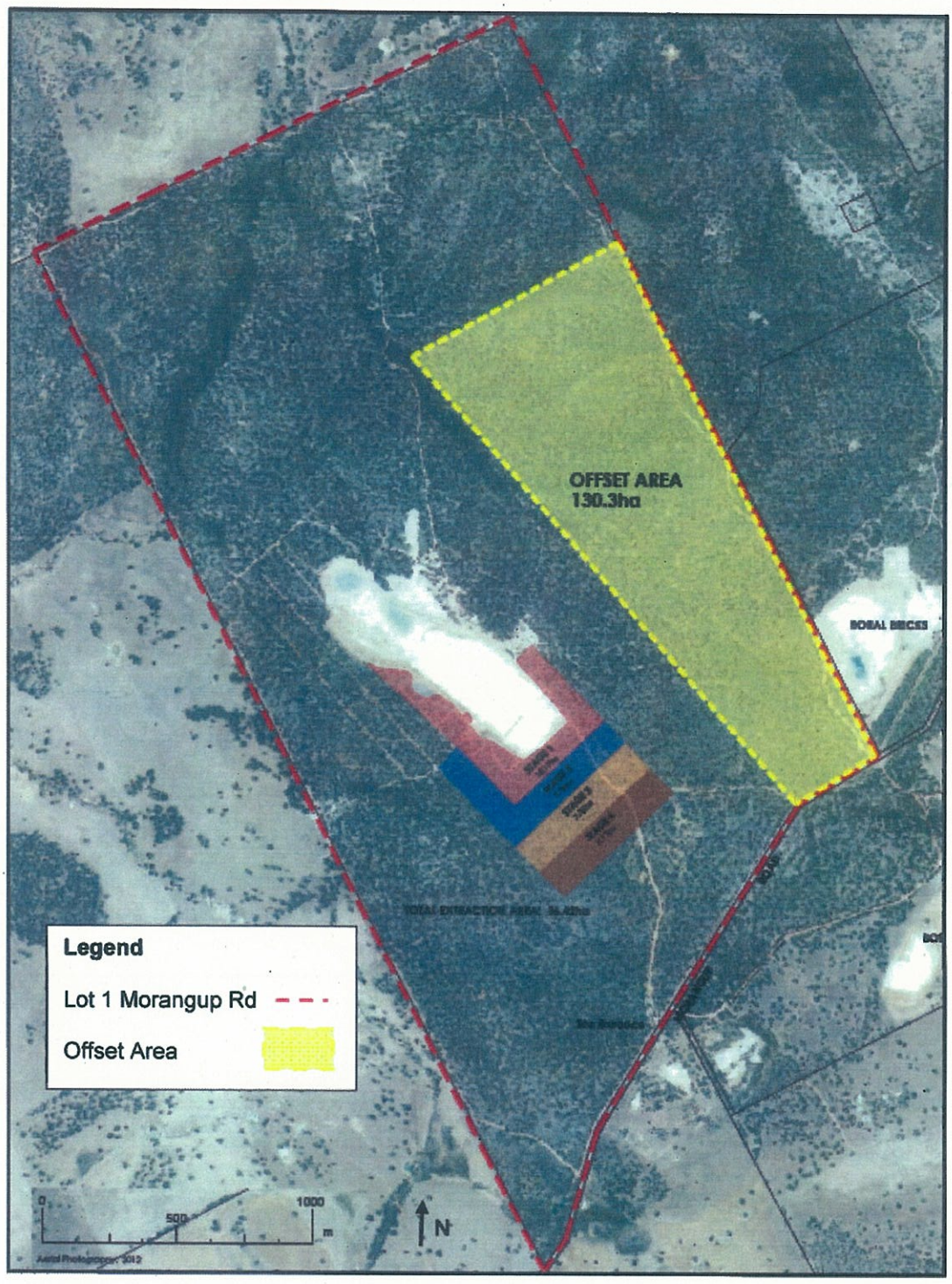
Offset attributes must be in the form of an excel file ('.xls') capturing relevant attributes of the offset area, including the EPBC reference ID number, the physical address of the offset site, coordinates of the boundary points in decimal degrees, the EPBC protected matters that the offset compensates for, any additional EPBC protected mattes that are benefiting from the offset, and the size of the offset in hectares.

The **Offset Area** is within the property that is owned by Austral Bricks (WA) Pty Ltd and is being managed for conservation by Austral Bricks (WA) Pty Ltd. The offset property is within Lot 1 Morangup Road, Morangup, Western Australia as shown at Schedule 1.

The action is to clear vegetation for the expansion of a clay extraction operation on Lot 1 Morangup Road, Morangup, Western Australia.

Shapefile means an ESRI Shapefile containing '.shp', '.shx' and '.dbf' files and other files capturing attributes of the offset area, including the shape, EPBC reference ID number and EPBC protected matters present at the relevant site. Attributes should also be captured in '.xls' format.

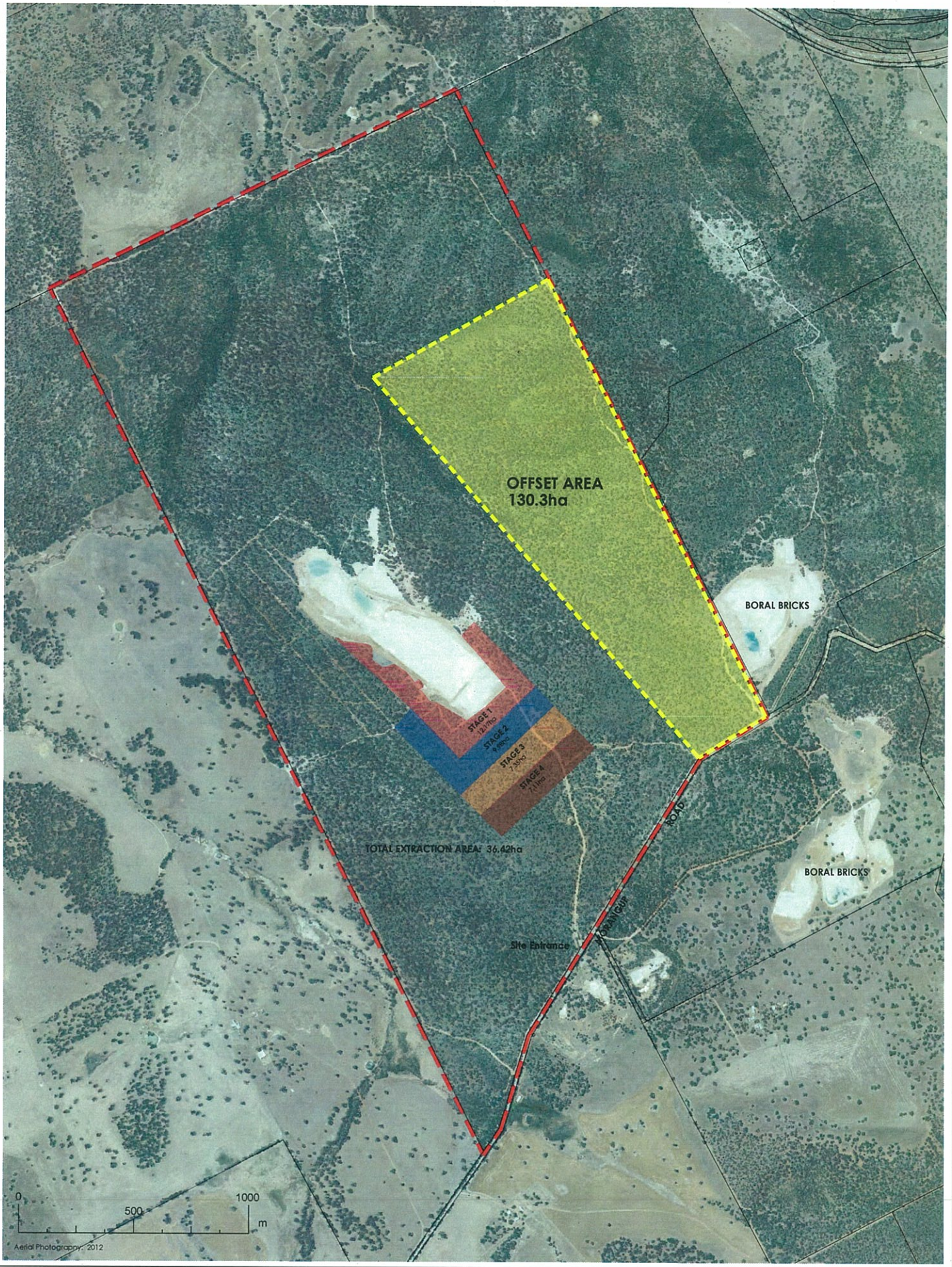
WA DPaW is the West Australian government Department of Parks and Wildlife (or equivalent agency).



Schedule 1 – Offset Area

APPENDIX B

Plans



landinsights
PLANNING DESIGN ENVIRONMENT

NORTH

PROPOSED OFFSET AREA
LOT 1 MORANGUP ROAD
TOODYAY
AUSTRAL BRICKS PTY LTD

1/1 ALVAN STREET MT LAWLEY W.A. 6050 POSTAL ADDRESS : PO BOX 289 MT LAWLEY W.A. 6929
phone : (08) 9271 8506 fax : (08) 6161 2597 email : admin@landinsights.com.au

Scale 1:15000 (A3) Plan No: 935-03 Date: April 2014