

# Extractive Industry Application & Clay Extraction Management Plan

*Lot 201 Great Northern Highway, Upper Swan*

prepared for  
**Austral Bricks WA Pty Ltd**

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PLANNING DESIGN ENVIRONMENT

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## Executive summary

Land Insights acts for Austral Bricks WA Pty Ltd and lodge this application on their behalf. The purpose of this report is to apply for Planning Approval and Extractive Industry Licence for the continued extraction of clay on Lot 201 Great Northern Highway, Upper Swan.

This application is for Planning Approval and Extractive Industry Licence for a duration of 10 years. The requirements of the *City of Swan Extractive Industries Local Law* are addressed within this document.

SUBJECT	DESCRIPTION
Operating times	The hours of operation will be from 06:00-18:00 hours from Monday to Saturday. No operation will occur on Sundays or Public Holidays.
Life of project	Approximately 10 years or more.
Site preparation	Limited site preparation is required as the site is already established for clay extraction. No clearing of native vegetation will be required. Bund walls have been established along the boundary of the site. Drainage systems are already in place. A well-established vegetation buffer is located along the western side of the property to provide screening to the road. Vegetation has been planted on the boundaries of Lots 101, 558 and 559 to the east. Internal access, signage and fencing has already been established.
Access	Existing access is provided to the Great Northern Highway at the south-west corner of the lot. An internal track provides access to the existing pits and stockpiling area.
Vehicle movements	It is estimated that there will be approximately 700 combined truck movements (in and out of the site) each year. Trucks will access the site primarily during the summer months, however this will vary depending on demand for clay. There will also be many occasions where there will be no trucks visiting the site for 3 to 4 weeks at a time. In general, it is expected that carting of material will occur for approximately 3-4 weeks over the summer months.
Pit Area	The extraction area will be approximately 39 hectares.
Staging	Stage 1 has been excavated across the southern portion of the site. Excavation on Stage 2 has already commenced. This application is for the continuation of Stage 2 in accordance with the attached plans.
Depth	Depth of excavation is approximately 7 metres.

SUBJECT	DESCRIPTION
Excavation process	<p>Excavation of clay takes place in a sequence of steps which can be broadly broken down into the Excavation Campaign (i.e. removal of topsoil and overburden, excavation of clay to stockpile) and Carting Campaign (transport of clay from stockpiles to the factories). In general the steps will involve the following:</p> <ul style="list-style-type: none"> <li>• Topsoil will be removed and stockpiled for later use at the decommissioning stage. Topsoil stockpiles will be 0.5-1.5 metres in height.</li> <li>• Overburden will be removed from the pit area to a depth of approximately 2-5 metres (the depth varies across the site). It will be transferred to the bund wall located on the eastern side of the pit area. The overburden bunds will be located adjacent to the pit area for readiness to push into the pit as part of land rehabilitation.</li> <li>• Clay will be excavated by a bulldozer, scraper or excavator.</li> <li>• The depth of excavation will vary depending on the availability of the resource, however the pits are expected to reach depths of up to 7 metres.</li> <li>• Excavation will take place from south to north. Stage 1 has already been excavated at the southern end of the site. These pits are now used as water detention basins. Stage 2 has already commenced and this application relates to the continuation of this stage.</li> <li>• Clay will be moved by dump trucks from the pit area to the stockpile area.</li> <li>• Material is likely to be stockpiled over the earthworks campaign and carted from the site when required, generally over one cartage campaign lasting from 3-4 weeks during the summer months.</li> <li>• It is estimated that there will be approximately 700 combined truck movements (in and out of the site) each year.</li> </ul>
Direction of excavation	Excavation will take place from south to north.
Stockpiling	Clay will be stockpiled at the southern end of the property and carted from the site when required.
Drainage	<p>Drainage has already been extensively reviewed and assessed by the EPA as part of the Ministerial Statement, and a Drainage Management Plan has previously been prepared for the site. Drainage systems are already in place. The groundwater will not be intercepted during excavation. Detention basins already exist from the pits excavated from stage 1.</p> <p>Water will be collected in the detention basins located within the pit area and will be used for dust suppression.</p>
Refuelling	<p>Proposed mobile refuelling.</p> <p>No storage of fuel on site.</p>
Structures	Temporary structures will be placed on site for workers (such as small office, lunch room and toilets) during the earthworks campaign and carting campaign.

SUBJECT	DESCRIPTION
Decommissioning	The pit will be recontoured and rehabilitated into amenity lakes surrounded by pasture.

The proposed clay extraction will comply with the dust management plan, noise management plan, water management plan, refuelling management plan and rehabilitation management plans contained within the following report.

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# **1 Introduction**

## **1.1 Background**

Land Insights acts for International Brick and Tile Pty Ltd (T/A Austral Bricks WA Pty Ltd) and lodge this application on their behalf for Lot 201 Great Northern Highway, Upper Swan. This application is for Planning Approval and Extractive Industry Licence for a duration of 10 years. Excavations have taken place on site for the last 25 years.

Planning Approval (issued by the WAPC) and an Extractive Industry Licence (issued by the City of Swan) was granted for Lot 201 Great Northern Highway, Upper Swan. The Extractive Industry Licence for the site expires in March 2018. This application relates to the continued extraction of clay on the site and requests that a new Planning Approval and Extractive Industry Licence is granted.

Operations on the site will continue in the same manner that has occurred over the past 24 years. Excavation of this resource is expected to take a further 10 years to extract, depending on demand. Extraction of clay on this site commenced in 1993 and is ongoing. The existing licence was granted in March 2013 and provided for the expansion of Stage 2 on Lot 201. This application for a new Planning Approval and Licence is to provide for the extraction of the remainder of Stage 2.

## **1.2 Purpose of report**

The purpose of this report is to provide supporting information for an application for Planning Approval and an Extractive Industry Licence. The requirements of the *City of Swan Extractive Industries Local Law* are addressed within this document. The prescribed application forms have been completed and are provided in Appendix A.

## **1.3 Importance of clay and rationale**

The clays from Upper Swan are an essential ingredient for roof tiles, clay pipes, bricks and paving blocks. As such, the extraction of clay is an important process in the supply of bricks and other construction materials for the community. The continued demand for housing results in the demand for basic raw materials such as clay. If the community demand for construction resources (to build homes etc.) didn't exist then there would be no need for extraction.

The site is located in close proximity to the Perth Metropolitan Area and one of the main demand areas (Upper Swan, Ellenbrook etc) which is an important element of affordable housing as it reduces transportation and construction costs to the community. It should be noted that clay deposits near the Perth Metropolitan Area are scattered and under pressure from other land uses which threatened to sterilise the resource.

The importance of clay to the community is reflected in *Statement of Planning Policy 2.4 Basic Raw Materials* (WAPC, 2000) and *Managing the Basic Raw Materials of Perth and the Outer Metropolitan Region, Parts 1 and 2* (Chamber of Commerce and Industry (1995 and 1996).

The excavation activities on the site will continue to provide valuable clay resources to the community and the construction industry in years to come.

#### **1.4 Ownership**

Lot 201 is located along the Great Northern Highway, approximately 10km from the Bullsbrook town site. The total area of Lot 201 is approximately 76.3ha and the existing pit extends across a majority of the property. A site location plan is provided in Appendix B. Certificate of Title details are as follows (and a copy is at Appendix C):

**Table 1.1 – Ownership details**

LOT #	PLAN/DIAGRAM	VOLUME	FOLIO	OWNER
201	D96431	2225	737	International Brick & Tile Pty Ltd



## 2 Site Description

### 2.1 Climate

The south-west of Western Australia has a Mediterranean climate which is characterised by hot, dry summers and cool, wet winters.

Rainfall data is recorded at Midland station, approximately 11km from Upper Swan. The mean annual rainfall is 795.2mm with a majority falling over May to August.

Temperature data is recorded at the Pearce RAAF station. Average maximum temperatures reach 33.5°C in January and 17.9°C in July. The average minimum temperatures fall to 8.2°C in August.

### 2.2 Topography and Landform

The site is relatively flat and slopes gently from around 20m AHD at the western end to approximately 25m AHD on the eastern end.

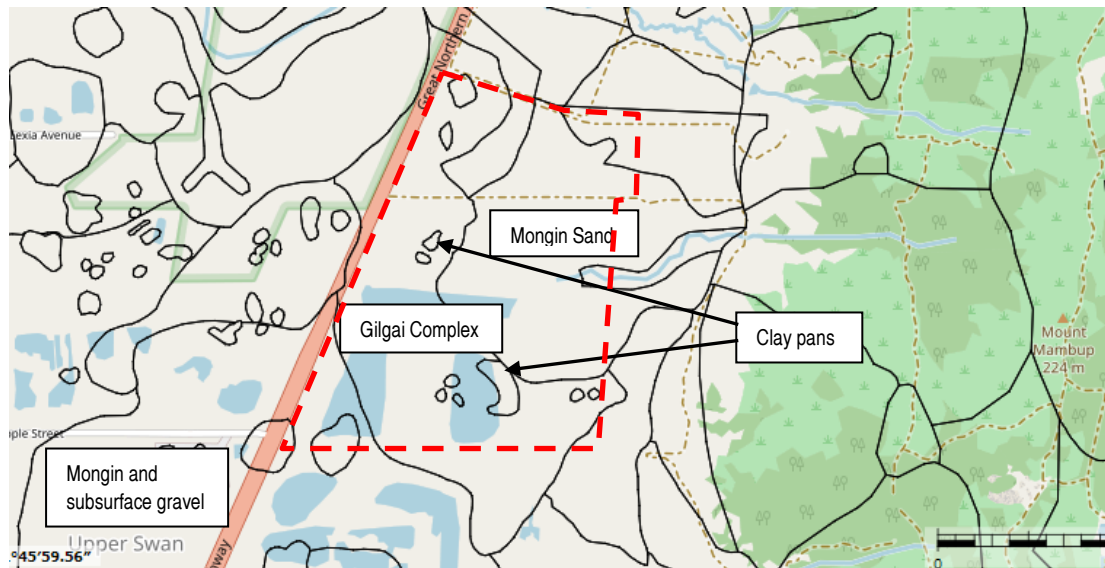
### 2.3 Geology and soils

The surface geology identified by the Perth Groundwater Map (DWER, 2018) is described as 'alluvium' and 'aeolian calcarenite'.

The site largely lies within the Pinjarra landscape system and a number of soil-landscape units exist across the property. These include Mongin Sand, Gilgai Complex and Mongin Sand subsurface gravel. Some areas of claypan also exist dotted throughout the site.

NAME	DESCRIPTION	SOIL TYPES	QUALITIES
Mongin Sand (213PjMO_Mos)	Brownish-grey coarse sand over grey and yellow mottled gritty gravelly clay with lumps of iron cemented material.	Grey deep sandy duplex	Low flood risk. High waterlogging risk. Low water erosion risk and high wind erosion risk.
Gilgai Complex (213Pj_GC)	Self-mulching cracking clay with Grey shallow loamy duplex, Semi-wet and Saline.	Self-mulching cracking clay Semi-wet soil	Low flood risk. High waterlogging risk. Low wind and water erosion risk.
Mongin Sand subsurface gravel (213PjMO_Mos(sg))	Brownish-grey coarse sand with subsurface gravels over grey and yellow mottled gritty gravelly clay with lumps of iron cemented material.	Grey deep sandy duplex	Low flood risk. Moderate risk of waterlogging. Low water erosion risk and high wind erosion risk.

Source: DPIRD



## 2.4 Vegetation and Fauna

No native vegetation remains over the existing and proposed excavation area. A line of mature trees is located along the western boundary of the property along the Great Northern Highway to screen the development from the road.

The Ellen Brook Nature Reserve is located to the north-west of the site, on the opposite side of the Highway.

## 2.5 Hydrology

### Background

The hydrology of the Upper Swan clay pits has been extensively researched and reported on as part of the Ministerial Statements relating to these sites. In accordance with Ministerial Statement 658, the following reports are already in existence:

- *Upper Swan Clay Excavations Regional Development, Drainage and Rehabilitation Strategy* (Bowman, Bishaw and Gorham, 2001)
- *Environmental Management Program Clay Excavations Lot 201 Great Northern Highway, Upper Swan* (RPS, Bowman Bishaw and Gorham, 2006). Please note that this report also includes a Drainage Management Plan for the site.

Also in accordance with the Ministerial Statement, Austral Bricks undertakes regular monitoring of groundwater on the site and is required to provide performance reports to the Department of Water and Environmental Regulation every 5 years. The results of the latest groundwater testing is provided below.

### Site Description

The hydrology and hydrogeology (surface and groundwater) proclaimed under the Rights in Water and Irrigation (RIWI) Act 1914 is provided below:

- Groundwater Area – Swan
- Surface Water Catchment Area – Swan Avon, Lower Swan
- Surface Water Sub-Catchment Area – Ellen Brook.

The hydrological zone is 'coastal plain'. No Public Drinking Water Source Areas (PDWSA's) are located on or surrounding the property. The Swan River is located approximately 2 kilometres to the south of the extraction/pit area. Ellen Brook flows to the north and west of the site. It is approximately 2km from the pit area to the west and approximately 500m from the pit area to the north. A small drainage line flows into the site from the east. The drainage line ends in a small dam on the eastern side of the bund wall.

Water within the excavation area is retained on site and not permitted to flow into the surrounding area. Drainage detention ponds are located on the site from previous pits. These ponds hold rainwater which falls on the site and is used for dust suppression. Bund walls have been established along the boundary of the site which act to retain water on site. No water is not permitted to flow into the nearby drainage line to the east or into the Ellen Brook Nature Reserve.

Groundwater contour data from the Perth Groundwater Map (DWER, 2018) indicates that minimum contours are 15-16 metres to the north of the site.

### **Site drainage management**

The *Upper Swan Clay Excavations Regional Development, Drainage and Rehabilitation Strategy* describes the drainage works undertaken when site excavations commenced in 1993. The main outcome was to divert all drainage from the existing and future clay excavations away from the Ellen Brook Nature Reserve catchment. The catchment area is described as the main tortoise habitat and small parcels of land surrounding it. Two drainage diversions took place in order to achieve this – a drain on Lexia Avenue and bunding, culverts and drains along the highway. This resulted in the diversion of all drainage in a northerly direction past the tortoise habitat so it is discharged into the Ellen Brook (it is noted in the Strategy that the Ellen Brook is hydrologically separated from the tortoise habitat).

The Drainage Management Plan (contained within the Environmental Management Program (RPS BBG, 2006)) states that the objective of drainage management is to retain all turbid run-off from areas disturbed during excavation within the clay pit area and to divert 'clean' run-off from peripheral areas away from the operational area to join with the natural drainage downstream of the excavations. As a result, a bund wall has been placed around the perimeter of the extraction area (to cut the site off from the surrounding hydrological water flow and to retain water on site). Run-off from the Darling Scarp is diverted around the pit area to a depression in the north-western corner of the site where it is allowed to settle before entering the road side drain along the Highway. This connects to the Ellen Brook Nature Reserve drainage diversion.

Monitoring of the water on site in the early years of operation took place to ensure the success of run-off containment on site and the drainage diversion. This condition was cleared by the EPA in 2000.

There are 8 bores at 4 locations on the site (a deep and shallow bore at each location). In addition, 4 surface water locations within and adjacent to the pit are also monitored. The groundwater test results

from 2016 indicated that the measured elevations ranged from 13.34m AHD (Australian Height Datum) (measured June 2016) to 21.12m AHD (measured in Sept 2015). The bores do not show continual groundwater presence throughout the year.

Excavations will be above the water table and groundwater will not be intercepted. No excavation has occurred below the water table and Austral Bricks has confirmed that the deepest excavations do not exceed 8m below ground level (bgl).

## 2.6 Surrounding land uses

Surrounding land uses include other extraction sites directly to the south and west (Austral Bricks as well as Midland Brick), rural living to the east and north, the Main Roads transport depot to the south-west and the Ellen Brook Nature Reserve to the west. A 100m separation distance from the excavation area has been maintained from the nature reserve. Expansive vegetated areas are located on the hills a short distance to the east. The Swan River is located over 2km to the south of the pit.

## 2.7 Heritage

A search of the Aboriginal Heritage Database indicated that there are no other heritage sites on or directly adjoining the property. A number of Registered Heritage Sites are located on or surrounding the property.

SITE ID	NAME	TYPE	LOCATION
3525	Ellen Brook: Upper Swan	Mythological	Covered the whole property, however Lot 201 is on the edge of the mapped area for this site which covered an expansive area stretching along Ellen Brook.
3830	Buyat Cullung	Ceremonial, Man-Made Structure, Mythological	To the east of the site.
3831	Tjitti-Tjitti	Mythological	Extends within the eastern portion of the site. Extraction does not occur within this area and the proposed expansion will not extend into the mapped extent for this site.

No Aboriginal Cultural deposits have been found during the excavation within Lot 201. In the event that any deposits are uncovered, work will cease and the find reported to the Department of Planning, Lands and Heritage and advice sort.

No European heritage sites are located within or directly adjoining the property.

### **3 Planning framework**

#### **3.1 Metropolitan Region Scheme**

The site is zoned *Rural* in the Metropolitan Region Scheme.

#### **3.2 State Planning Policy 2.4 – Basic Raw Materials**

State Planning Policy (SPP) 2.4 sets out the matters which are to be taken into account and given effect to by the Commission and local governments in considering zoning, subdivision and development applications for extractive industries (for the extraction of basic raw materials) and zoning, subdivision and development applications in the vicinity of identified basic raw material resource areas.

The policy objectives are to:

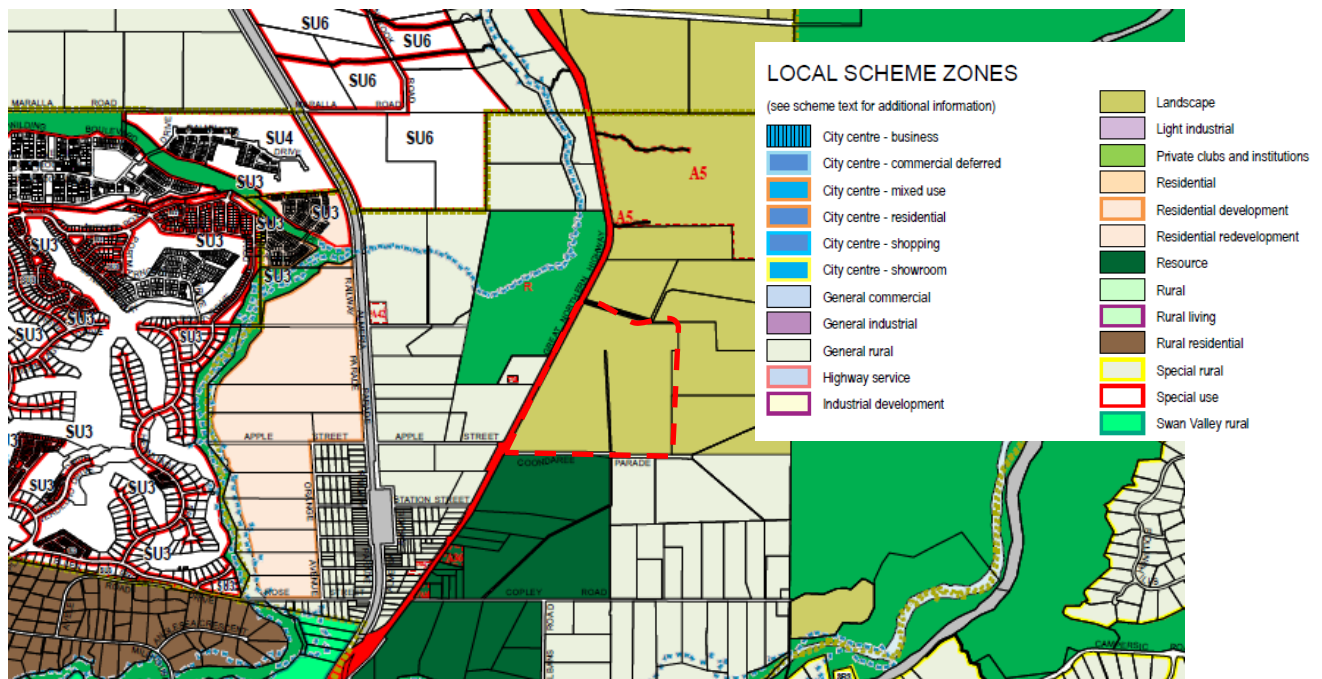
- identify the location and extent of known basic raw material resources;
- protect Priority Resource Locations, Key Extraction Areas and Extraction Areas from being developed for incompatible land uses which could limit future exploitation;
- ensure that the use and development of land for the extraction of basic raw materials does not adversely affect the environment or amenity in the locality of the operation during or after extraction;
- provide a consistent planning approval process for extractive industry proposals including the early consideration of sequential land uses.

The site is identified as a *Priority Resource Location* in SPP 2.4 which is described as *locations of regionally significant resources which should be recognised for future basic raw materials extraction and not be constrained by incompatible uses or development*.

This Clay Extraction Management Plan has been prepared in accordance with the requirements of SPP 2.4.

#### **3.3 City of Swan Local Planning Scheme No. 17**

The site is zoned *Landscape* in the City of Swan Local Planning Scheme No. 17 as shown on the plan below.



Source: DPLH

The objectives of the *Landscape* zone are addressed in the following table:

OBJECTIVE	COMMENT
a) Provide for low density rural residential development and associated rural residential activities, recognising the visual characteristics of the landscape.	N/A – rural residential development is not proposed as part of this application.
b) Ensure as far as practicable, that the environmental and landscape characteristics of the area are not compromised by development and use of the land for either rural or residential purposes.	Extractive industries already exist on the site and this application is for the continuation of this use. Visual landscaping (including bund walls and vegetation) is already established around the site. Therefore, the application does not compromise landscape and environmental characteristics of the area.
c) Encourage the rehabilitation of degraded areas through selected replanting of indigenous flora.	The end use of the site will involve extensive planting and revegetation.

Extractive industries is an 'A' use in the Landscape zone which means that *the use is not permitted unless the local government has exercised its discretion by granting planning approval after giving special notice.*

The LPS also contains a list of definitions in reference to land use. The activity on site falls within the *Industry – Extractive* definition, as follows:

**Industry – Extractive:** *means an industry which involves the extraction, quarrying or removal of sand, gravel, clay, hard rock, stone or similar material from the land and also includes the treatment and storage of these materials or the manufacture of products from*



*any of these materials on, or adjacent to, the land on which the materials are extracted but does not include industry – mining.*

### 3.4 City of Swan Local Planning Strategy

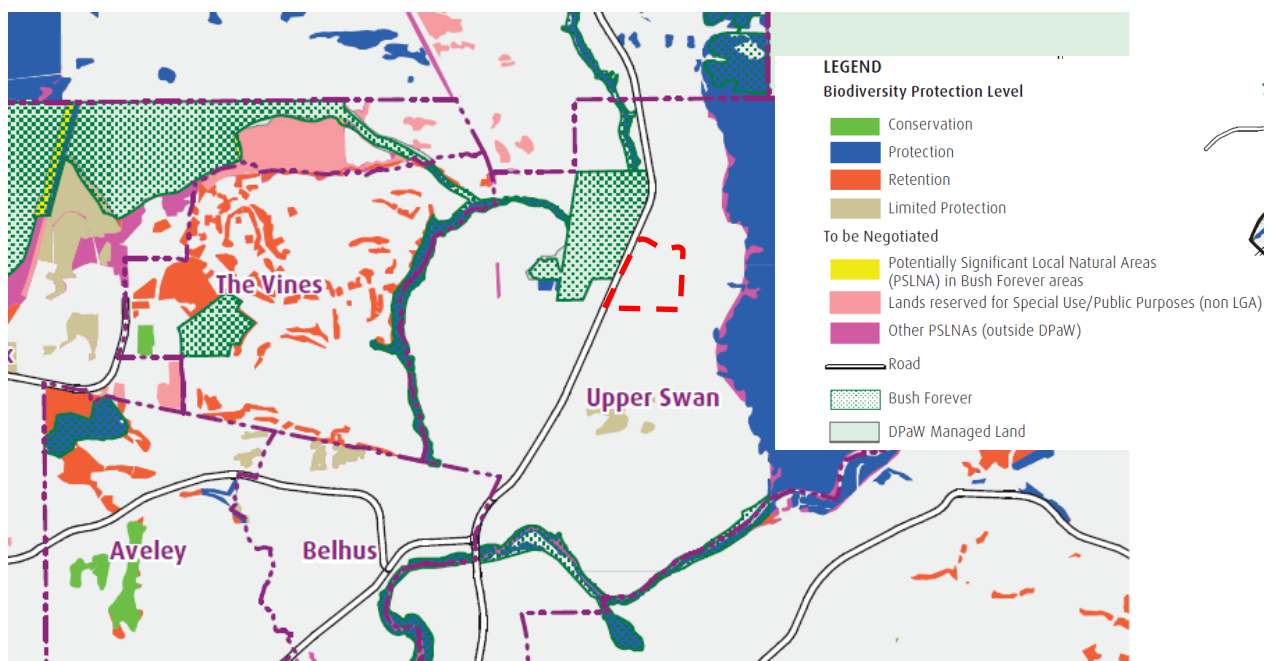
The City of Swan Local Planning Strategy mentioned the importance of basic raw materials and extraction areas in the City, particularly those identified in the WAPC's SPP 2.4. It states that *basic raw materials including sand, clay, hard rock and gravel are an important source of supply for the region, and have been recognised in the Commission's Basic Raw Materials Policy and that the raw materials are of particular strategic significance to the building and construction industries.*

One of the strategies under Sensitive Resource Management is to *facilitate the extraction of basic raw materials, subject to appropriate safeguards to minimise any adverse impacts on adjacent property or on the natural environmental resources.* This application complies with this strategy by providing a comprehensive environmental management plan (Chapter 5).

There are no maps associated with the City of Swan Local Planning Strategy.

### 3.5 City of Swan Local Biodiversity Strategy

The Local Biodiversity Strategy provides a strategic approach to planning for the conservation of local natural areas across all land tenure. There are no Local Natural Areas located on the property. No clearing is required to facilitate development. The nearest Local Natural Areas is the Ellen Brooke Nature Reserve which is located directly to the west. There is a 100m buffer from the Nature Reserve to the extraction area in accordance with the Ministerial environmental approval.

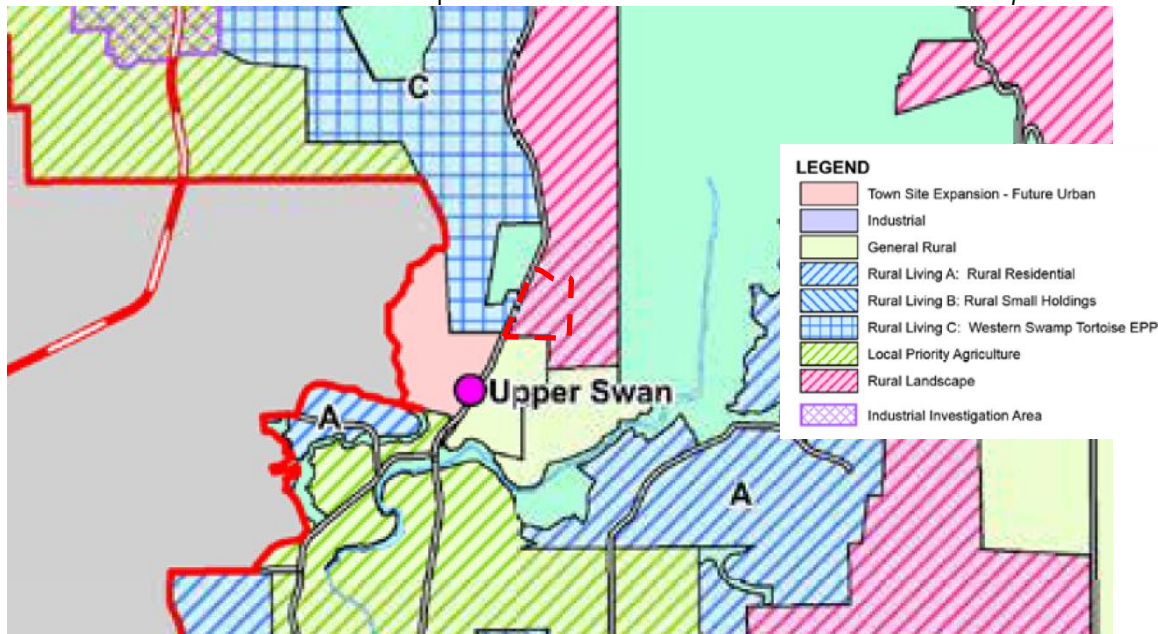


Source: City of Swan

### 3.6 City of Swan Local Rural Strategy

Lot 201 is shown as *Rural Landscape* in the City of Swan Local Rural Strategy as shown in the plan below.

'Extractive Industries' are listed as 'Acceptable with Council Consent' within the *Rural Landscape* area.



Source: City of Swan

The objectives of *Rural Landscape* are addressed in the table below.

OBJECTIVE	COMMENT
<p>a) To conserve biodiversity and ecological systems, recognising the natural landscape as a significant metropolitan asset that should be protected in perpetuity from gradual erosion of ecological values and character of the rural landscape.</p>	<p>The site was historically cleared for agriculture and therefore does not comprise of high biodiversity or ecological features. Extractive industries already exist on the site and this application is for the continuation of this use. The continuation of extractive industries will not have a detrimental impact on biodiversity and ecological systems.</p>
<p>b) To provide regional ecological linkages and maintain biodiversity values of remnant vegetation with an emphasis on poorly represented vegetation, priority and Declared Rare Flora and riparian vegetation, in accordance with the City's LBS.</p>	<p>No rare or priority flora, poorly represented vegetation or riparian vegetation is located on the property. The site was historically cleared for agricultural use.</p>
<p>c) To retain the natural character and visual amenity of the rural landscape, retaining remnant vegetation and topography through the appropriate location and design of buildings and considering land uses and developments that do not require extensive clearing for the purposes of bushfire mitigation.</p>	<p>The extraction site is existing and this application is for the continuation of this use. No clearing of native vegetation will be required. Visual landscaping (including bund walls and vegetation) is already established around the site. The land use will not have a detrimental impact on natural character and visual amenity.</p>



OBJECTIVE	COMMENT
<i>d) To minimise risk to life and property by considering the prevailing threat of bushfire hazard in determining planning applications, ensuring development is in accordance with current best practice for bushfire protection and mitigation.</i>	Vegetation on site is limited to the perimeter of the site. Therefore, the bushfire hazard is low. The application will not result in an increase to bushfire risk.
<i>e) To facilitate low impact land uses and development at a scale that is compatible with environmental and landscape values, considering the cumulative impact of clearing requirements under the Bush Fires Act 1954 (as amended).</i>	The extraction site is existing and this application is for the continuation of this use. No clearing of native vegetation will be required. Visual landscaping (including bund walls and vegetation) is already established around the site. The land use will not have a detrimental impact on environmental and landscape values.

### **3.7 EPA Guidance Statement 3 – Separation Distances between Industrial and Sensitive Land Uses**

The EPA's Guidance Statement No. 3 provides a guideline on the separation distances and buffers for a range of industrial land uses to sensitive land uses (such as residential dwellings). The distances stated in the policy assume the land use is not managed and, should best practice environmental management take place, these distances can be reduced.

The operations on site fit into the category *Clay extraction or processing*. The potential impacts are listed as noise and dust. The separation distance is given as *500-1000 metres, depending on size and processing*, however this can be less with appropriate environmental management. In addition, no processing takes place on site which reduces the potential for impact. It should be noted that in the EPA's *Draft Environmental Assessment Guideline for Separation distances between industrial and sensitive land uses* the separation distance is 300-500 metres.

The closest occupied residences are located to the east of the site within the *Landscape* zone. The house to the north-east is located 450m from the existing extraction area and 400m from the expansion area. This is the closest residence to the extraction site. The other two houses located to the east were built recently (2015) and therefore they were not present when the existing application was approved. These houses are located approximately 550m and 500m from the extraction area respectively.

The site is approximately 850m from the residential properties on Station Street to the south-west and 600m from the dwelling/Apple Street Kennels to the west of the site.

The extraction area meets the minimum separation distance recommended by EPA Guidance Statement No. 3, except for the dwelling to the north-east. This house was existing when the previous application was approved. As a result of the reduced separation distance, a tree buffer was established along the north-eastern boundary of the site. This vegetation buffer is approximately 50m wide and has been extended further south to provide a vegetation screen to the next house. Further information on separation distances is provided in Chapter 5.7 and a detailed Environmental Management Plan is provided in Chapter 5.

### **3.8 Environmental Approvals**

Environmental Approval was granted under Part IV of the *Environmental Protection Act 1986* in 1992 (Ministerial Statement 658). An amendment to the approval under Section 46 of the Act was finalised in September 2004.

Condition 5-2 of the approval indicates that, from an environmental management perspective, the proponent *may excavate clay indefinitely, subject to the acceptability of performance review reports which shall be submitted every five years...*

The performance review report needs to satisfactorily address a range of environmental issues. Other conditions on the approval relate to issues such as:

- Drainage management
- Buffers from the Wildlife Sanctuary at Ellenbrook Nature Reserve
- Adopting an operational Environmental Management Program
- Regional Development, Drainage and Rehabilitation
- Decommissioning/Closure Plans

A majority of the environmental management plans (including drainage management, dust and noise management and rehabilitation) have already been considered and approved in accordance with the Ministerial Statement. This application for Development Approval and Extraction Licence has been prepared to complement the environmental approval issued by the Minister for the Environment.

A copy of the Ministerial Statement is provided in Appendix E

## **4 Works and excavation program**

### **4.1 Background**

Land Insights acts for Austral Bricks WA Pty Ltd and lodge this application on their behalf for Lot 201 Great Northern Highway, Upper Swan. This application is for Planning Approval and Extractive Industry Licence for a duration of 10 years. The works and excavation program is described below. Excavations have taken place on site for the last 25 years.

### **4.2 Controls**

Excavation activities on site will be conducted in accordance with the *Mines Safety and Inspection Act (1994) and Regulations (1995)*. Operations are managed by a licenced Quarry Manager and inspections occur on a daily basis during the excavation campaign.

Operation inspections are regularly carried out by the Resources Safety division of the Department of Mines, Industry Regulation and Safety who inspect safety, operational procedures and workplace health such as dust and noise.

Austral Bricks have procedures in place to manage safety, health, environmental impact, site completion and rehabilitation. Full personal protection is required for all persons on site at all times. All workers are required to wear full protective safety and high visibility gear when on site. All vehicles have two-way radio capability. All light vehicles will be required to register at the transportable building on site. The site is within mobile phone contact and all vehicles are equipped with two-way radios.

It is anticipated that the deepest excavation will be approximately 7 metres below natural ground level. Fences and warning signs required by the Department of Mines, Industry Regulation and Safety and the City of Swan will be maintained.

### **4.3 Excavation procedure**

This application is for the continued extraction of clay on Lot 201. Excavation of clay takes place in a sequence of steps which can be broadly broken down into the Earthworks Campaign (i.e. removal of topsoil and overburden, excavation of clay to stockpile) and Carting Campaign (transport of clay from the pit or stockpiles to the factories).

#### **Earthworks campaigns**

An earthworks campaign refers to the excavation and stockpiling of material. No processing will take place on the site. This operational procedure has been determined to help minimise disturbance to the neighbouring residents and other locals. An Earthworks campaign will take place for 6 weeks every 3 years during the summer months, over this time overburden will be removed and clay excavated and stockpiled. Excavation activities last only for a short time and for a majority of the year there will be no extraction taking place. Excavation generally takes place during the drier months, anytime between September and April when conditions are appropriate.

## **Cartage campaigns**

The cartage campaign refers to removal of material from the site. Loading and carting from the site depends on the market demand for bricks. As a result, truck movements can vary depending on demand for clay at a particular time. There will be some weeks when truck movements will be significantly higher than others. There will also be many occasions where there will be no trucks visiting the site for many weeks at a time. It is expected that most truck movements will be over a 3-4 week period.

## **Summary**

In general the steps will involve the following:

- Topsoil will be removed and stockpiled for later use at the decommissioning stage. Topsoil stockpiles will be 0.5-1.5 metres in height.
- Overburden will be removed from the pit area to a depth of approximately 2-5 metres (the depth varies across the site). It will be transferred to the bund wall located on the eastern side of the pit area. The overburden bunds will be located adjacent to the pit area for readiness to push into the pit as part of land rehabilitation.
- Clay will be excavated by a bulldozer, scraper or excavator.
- The depth of excavation will vary depending on the availability of the resource, however the pits are expected to reach depths of up to 7 metres.
- Excavation will take place from south to north. Stage 1 has already been excavated at the southern end of the site. These pits are now used as water detention basins. Stage 2 has already commenced and this application relates to the continuation of this stage.
- Clay will be moved by dump trucks from the pit area to the stockpile area.
- Material is likely to be stockpiled over the earthworks campaign and carted from the site when required, generally over one cartage campaign lasting from 3-4 weeks during the summer months.
- It is estimated that there will be approximately 700 combined truck movements (in and out of the site) each year.

## **Hours of operation**

The hours of operation will be from 06:00-18:00 hours from Monday to Saturday. No operation will occur on Sundays or Public Holidays.

### **4.4 Stages and timing**

Two stages have been identified which essentially comprise the old pit areas at the southern end of the site (which are now used as detention basins and the stockpiling area) and the pit at Stage 2. Excavation has already commenced across the southern section of the Stage 2 area and will continue to move progressively north as demand requires. The rate of extraction will vary depending on the demand for clay and other external factors.

### **4.5 Depths and extent of excavation**

The pit area will generally follow the pit outline as indicated in the plan at Appendix B. The pit is located across the southern and central portion of Lot 201 and is expected to move north. Stage 1 is approximately 20 hectares and stage 2 is expected to reach approximately 19 hectares in size (equalling a total area of approximately 39 hectares).

Clay will be excavated to a depth of approximately 7 metres. It is expected that the pit will remain in operation for the duration of the licence (10 years) and possibly beyond that time period depending on the demand for clay, the rate of excavation and other external factors.

#### **4.6 Depth, description and quantity of overburden**

Overburden, consisting of sand with lateritic clays and with minimal topsoil will be removed prior to excavation commencing in new areas. The depth of overburden across unexcavated areas is generally about 4 meters. Overburden is used to create bunds along the perimeter of the site and around the pit to provide visual screening and to assist in drainage management (i.e. to prevent water runoff from the site). It will be used for site recontouring once the site is decommissioned.

Topsoil is stored in accordance with Agriculture WA soil conservation guidelines.

#### **4.7 Site preparation**

As the site has been used for clay extraction for the past 25 years, minimal site preparation is required to continue extraction.

The site has already been previously cleared for agriculture and therefore no clearing will be required to facilitate extraction. Established vegetation screening exists along the western and eastern boundaries of the site. This is particularly important for the dwelling to the north-east. Vegetation was planted along the boundary to provide visual screening as required by the previous approval. Overburden bunds have been established around the pit. Site drainage procedures are already in place.

Safety measures such as fencing, signage and gates are already in place. Access to the site is already established and a crossover is located at the south-west corner of the property which provides access onto the Highway and internal access tracks are established.

#### **4.8 Access arrangements**

The existing access from Great Northern Highway will be used to gain access to the extraction area. This access is located at the south-western corner of the pit. Access around the site is provided via a network of internal tracks which lead around the perimeter of the extraction area and provide access to the pits and stockpiling areas. The access road has been designed and constructed for all year operation and the crossover point to Great Northern Highway has been sealed. Trucks generally enter the site from the south and exit towards the south.

Unauthorised access to the site is restricted by a locked gate at the entrance to the property.

#### **4.9 Truck movements**

Trucks will access the site throughout the year on an 'as required' basis to access the stockpiles created during the excavation program. It is estimated that there will be 700 truck movements in and out of the site per year. It should be noted that this is substantially less than the 4400 truck movements from the previous application 2013 when demand for material was much higher.

The carting regime and the specific number of truck movements will vary depending on the weather and demand for a particular type of clay. As a result, truck movements can vary depending on demand for clay at a particular time. There will be some weeks when truck movements will be significantly higher

than others. There will also be many occasions where there will be no trucks visiting the site for many weeks at a time. It is expected that most truck movements will be over a 3-4 week period.

Trucks used for the extraction are 8 wheel truck and dog combinations with gross weight of 64 tons and payload of 42 tons or road trains with a pay load of 50 tons. It is important to note that the carting regime will vary depending on the weather and demand for a particular type of clay, therefore there may be slight variations in the above figures.

#### **4.10 Plant and on-site equipment**

No permanent structures associated with the clay pit will be situated on the site.

The equipment required for excavation will be brought in on a seasonal basis and will include scrapers, a bulldozer, a front-end loader, a water cart and a grader. This equipment is removed at the end of each 'earthworks campaign'.

No storage of fuel and oil is required on site. Vehicles are refuelled on the floor of the excavation or operational area, as currently occurs. No chemicals are stored on site. A Refuelling Management Plan is at Chapter 5.5.

No processing, crushing, screening or blasting will occur on site.

All supplies will be delivered and rubbish will be stored in large bins which will be emptied at an appropriate rubbish tip.

A small transportable lunch room will be located on site during the earthworks campaign and for the cartage campaign. A portable chemical toilet system will be used and serviced on a weekly basis by the supplier when the site is operational. These temporary structures will only be required during the earthworks campaign and cartage campaigns.

#### **4.11 Public safety**

Public access to the site is restricted and appropriate warning signs are placed at the entrance regarding quarrying and restricted entrance. The site has locked gates when it is not being worked.

Work on site (excavation and cartage) will be discontinuous for most of the year and there will be periods of time throughout the year when no activity will take place on site. The excavation campaign will be approximately 6 weeks duration every 3-4 years and a majority of the carting/truck movements are expected to be over a 3-4 week period. This reduces the risk to public safety from machinery and truck movements.

#### **4.12 Workforce**

Workers will be on site primarily during earthworks campaign or carting campaigns. At such times the workforce will vary from 1-6 workers in addition to the truck drivers who enter and leave the site.

#### **4.13 Fire management**

Fire risk associated with extractive industries is generally less than the risk from general farming as the open area of excavation forms a natural firebreak. The pit area can be used for the emergency muster

area. Fire safety is incorporated into safety management for the site. It is located within mobile phone range which will assist in the event of an emergency.

Water contained within the detention basin can be available for firefighting if required. Earth moving equipment and the water tanker are also available for firefighting (if located on site).

Perimeter fire breaks are maintained around the site.

## **5 Environmental Management Plan**

### **5.1 Introduction**

The Environmental Management Plan contains information and management actions to ensure the clay extraction activities have minimal environmental impacts and to help return the land to an appropriate end use. This chapter includes the following individual management plans:

- Dust Management Plan
- Noise and Vibration Management Plan
- Drainage Management Plan
- Separation distances and buffers
- Visual management
- Waste management
- Rehabilitation Management Plan
- Final Site Clean-up.

### **5.2 Dust Management Plan**

This Dust Management Plan aims to describe the measures that will be used by Austral Bricks to reduce the creation and effect of dust. These actions are described further below.

Excessive dust has the potential to impact on both the on-site workers and adjoining landowners by travelling off-site. Dust can originate from activities on site, most likely to be generated by traffic moving across the site and the excavation area. Potential impacts are addressed by reducing the dust generation from quarrying, transporting around the site and onto trucks. Clay resources are found to stay relatively moist, even during summer. Experience with the existing operation is that dust can be managed through implementation of appropriate dust management procedures. Management actions to reduce dust impacts are described below.

#### **Complaints Procedure**

The complaints procedure is described below. It is also important that all complaints are recorded. The following activities will be conducted:

- Complaints made to the operator will be documented and dealt with expeditiously.
- Complaints received either directly from the complainant or via the City of Swan will be reviewed by the operator and interested parties to assess:
  - (i) the legitimacy of the complaint;
  - (ii) the aspects of the operation that triggered the complaint;
  - (iii) management actions required to address the issues raised to bring operations into line with conditions imposed on the extractive operation by the City of Swan under the Extractive Industries Licence.
- Actions deemed necessary to bring operations into line with relevant legislation, regulation and license conditions will be undertaken immediately and before works are recommenced.
- Summaries of complaints and actions taken to address each specific issue will be recorded in the Complaints Register (See Appendix E).



Complainants and the City of Swan will be notified in writing of the date, time and nature of the complaint received, results of the investigation, remedial actions undertaken and date and time of recommencement of works. If any complaints are received, necessary action will take place to help rectify the issue.

### Watering

Dust suppression is generally achieved through the use of a 'dust suppression agent', most commonly water. The application of water over areas prone to the generation of dust helps to reduce the likelihood that small dust particles which will be picked up by the wind. Dust problems can also be reduced by covering trucks with tarpaulin and watering stockpiles and access tracks.

Watering will be undertaken as required utilising a water cart. This will depend on the amount of dust being produced and the weather conditions. It is most likely that watering will occur during summer months rather than winter months owing to the increased moisture content of the material during winter.

Water will be available from the detention basins located within the extraction area. The frequency and amount of water applied will be dependent upon local conditions and observable dust generation. The quantity of water to be used will vary as conditions will change from day to day.

### Other dust management procedures

All trucks will be covered by Enviro-tarp prior to leaving the site and access roads within the site are watered during earthworks or cartage campaigns. The Resource Manager will also make random checks at the site to ensure that dust suppression is adequate.

If weather conditions are adverse (i.e. particularly strong winds are making dust management difficult), then operations will stop until the weather improves.

Machinery and vehicles will be maintained in good working condition. The bunds and screening vegetation will be maintained to provide a physical barrier to the movement of dust.

POTENTIAL IMPACT	MANAGEMENT/ACTION	COMMITTMENT	TIMING
Potential impact on adjoining sensitive land uses.	1. Maintain adequate separation distances to sensitive land uses on adjoining properties.	Impact to surrounding areas from dust will be minimised by complying with the Excavation Management Plan.	Ongoing
	2. Excavate from the pit floor which will generally be below natural ground level.		Ongoing
	3. Create and maintain screening barriers with overburden.		Ongoing
	4. Maintain screening vegetation on the property.		Ongoing
	5. Maintain all equipment in good condition.		Ongoing
	6. Maintain internal access roads in good condition.		Ongoing
	7. Wet down access roads and pit areas with water as required.		Ongoing
	8. Wet down and cover loads on trucks as required.		Ongoing

POTENTIAL IMPACT	MANAGEMENT/ACTION	COMMITTMENT	TIMING
	9. Schedule activities such as removal of top soil and overburden at times when materials are less likely to blow or during suitable wind conditions.		Ongoing
	10. When winds are sufficiently strong to negate the effects of dust management, operations will cease until conditions improve and compliance can be achieved.		Ongoing
	11. All non-conformances and noise and vibration related complaints immediately reported to the Quarry Manager.		Ongoing
	12. Following complaints, the source of any excessive noise or vibration will be identified and work practices will be modified or re-scheduled to reduce or eliminate the risk of future events.		Ongoing
	13. Continue training programmes on dust control requirements to all workers and contractors.		Ongoing

### 5.3 Noise & Vibration Management Plan

This Noise Management Plan aims to provide the measures that will be used by Austral Bricks to reduce the creation and effect of noise producing activities. The clay extraction process does not involve blasting or major noise-generating practices. Noise generated from work on site is largely from trucks and earthmoving equipment. It has the potential to impact on site workers and nearby sensitive land uses (such as residential dwellings). This can be addressed by reducing the noise generated by the operations and ensuring adequate separation distances.

The operator of the site makes the following commitments in relation to noise:

1. Manage noise levels in accordance with the *Environmental Protection (Noise) Regulations 1997*.
2. Monitor noise levels upon instruction from the Department of Water and Environmental Regulation.
3. Manage vibration in accordance with *Australian Standard AS 2670.2 – Evaluation of Human Exposure to Whole Body Vibration (1990)*
4. Manage noise levels to workers on site in accordance with the *Mines Safety and Inspection Act 1994 and Regulations 1995*.

#### Noise mitigation and management

Noise can potentially generate from vehicle movements within the pit area and when transporting clay from the stockpile area. The closest occupied residence is located to the north-east and is currently 450m from the extraction area. All other residences are 500m or more from the extraction area which meets the minimum separation distance recommended by EPA Guidance Statement No. 3.

Normal clay excavation is a relatively quiet operation (as no blasting or processing takes place on site). Excavation will be approximately 7 metres below the natural ground level and the site is surrounded by screening vegetation to provide additional noise buffers. As extraction progresses the ground level will

lower, resulting in the operation of machinery at levels below the surrounding ground level. This will act as a noise insulator and significantly reduce any residual noise associated with the operation of machinery on site. Occasionally an excavator or bulldozer may be required to work from natural ground level to increase efficiency or safety. Ripping or pushing by a bulldozer on the natural ground level has the potential to be the noisiest part of the operation.

All equipment used for excavation is relatively new and well maintained which aims to minimise noise generation. All vehicles use broadband reversing beepers to reduce noise emissions. Noise levels will be governed by the *Environmental Protection (Noise) Regulations 1997*. The noise emitted by the main excavation equipment on site (i.e. excavator and loader) is similar to that of farm machinery.

Operations will only take place during the approved hours of operation, which is in compliance with the noise regulations.

All workers will be supplied with noise protection equipment and noise management will be in accordance with the *Mines Safety and Inspection Act 1994 and Regulations 1995*. Regular site audits are undertaken by the Department of Mines, Industry Regulation and Safety.

Noise management procedures are set out in the table below.

### **Complaints Procedure**

The complaints procedure is described below. It is essential that any complaints relating to the creation of excessive noise are recorded, further investigated and acted on. The following activities will be conducted:

- Complaints made to the operator will be documented and dealt with expeditiously.
- Complaints received either directly from the complainant or via the City of Swan will be reviewed by the operator and interested parties to assess:
  - (i) the legitimacy of the complaint;
  - (ii) the aspects of the operation that triggered the complaint;
  - (iii) management actions required to address the issues raised to bring operations into line with conditions imposed on the extractive operation by the City of Swan under the Extractive Industries Licence.
- Actions deemed necessary to bring operations into line with relevant legislation, regulation and license conditions will be undertaken immediately and before works are recommenced.
- Summaries of complaints and actions taken to address each specific issue will be recorded in the Complaints Register (See Appendix E).

Complainants and the City of Swan will be notified in writing of the date, time and nature of the complaint received, results of the investigation, remedial actions undertaken and date and time of recommencement of works. If any complaints are received, necessary action will take place to help rectify the issue.

### Vibration management

Vibration is not expected to be an issue due to the relatively small nature of machinery on site, and the lack of blasting. The operator will comply with the *Australian Standard AS 2670.2 – Evaluation of Human Exposure to Whole Body Vibration (1990)*.

Noise management is set out in the table below.

POTENTIAL IMPACT	MANAGEMENT/ACTION	COMMITTMENT	TIMING
Noise may impact on adjoining sensitive land uses.	1. Maintain adequate separation distances to sensitive land uses on adjoining properties.	Impact to surrounding areas from noise will be minimised by complying with the Excavation Management Plan.	Ongoing
	2. Excavate from the floor of the pit which will generally be below natural ground level.		Ongoing
	3. Create and maintain screening barriers (bund walls) with overburden.		Ongoing
	4. Maintain screening vegetation on the property.		Ongoing
	5. Adhering to the hours of normal operation, with work conducted in the hours identified in the application.	Comply with the <i>Environmental Protection (Noise) Regulations 1997</i> and the <i>Mines Safety and Inspection Act 1994 and Regulations 1995</i> .	Ongoing
	6. All plant equipment and vehicles being fitted with appropriate noise suppression equipment to reduce noise levels so far as is practicable, with machines the quietest reasonably available.		Ongoing
	7. Maintain all equipment in good condition.		Ongoing
	8. All non-conformances and noise and vibration related complaints immediately reported to the Quarry Manager.		Ongoing
	9. Following complaints, the source of any excessive noise or vibration will be identified and work practices will be modified or re-scheduled to reduce or eliminate the risk of future events.		Ongoing
	10. Continue training programmes on noise control requirements to all workers and contractors.		Ongoing

### 5.4 Drainage Management Plan

A Drainage Management Plan already exists for the site as required by Ministerial Statement 658. The following reports are already in existence:

- *Upper Swan Clay Excavations Regional Development, Drainage and Rehabilitation Strategy* (Bowman, Bishaw and Gorham, 2001)
- *Environmental Management Program Clay Excavations Lot 201 Great Northern Highway, Upper Swan* (RPS, Bowman Bishaw and Gorham, 2006). Please note that this report also includes a Drainage Management Plan for the site.

As the site has been used for extractive industry for the past 25 years, water management procedures are already in place.

Drainage diversions are described in the Upper Swan Clay Excavations Regional Development, Drainage and Rehabilitation Strategy. The main outcomes was to divert all drainage from the existing and future clay excavations away from the Ellen Brook nature Reserve catchment. This resulted in the diversion of all drainage in a northerly direction past the tortoise habitat so it is discharged into the Ellen Brook (it is noted in the Strategy that the Ellen Brook is hydrologically separated from the tortoise habitat).

The Drainage Management Plan (contained within the Environmental Management Program) contains actions to ensure the retention of all turbid run-off from areas disturbed during excavation within the clay pit area and to divert 'clean' run-off from peripheral areas away from the operational area to join with the natural drainage downstream of the excavations. The following actions have been undertaken in accordance with Ministerial Statement 658:

- A 100m buffer has been from the Ellenbrook Nature Reserve from the extractive industry operations.
- Excavation will not intercept the groundwater
- All drainage waters from the eastern side of Great Northern Highway are diverted from entering the tortoise habitat west of the highway via the installation of a Diversion Drain which is still in operation
- Run-off generated from rainfall on the site is contained within the parameter bunds and does not connect with the Diversion Drain.

Monitoring of the water on site in the early years of operation took place to ensure the success of run-off containment on site and the drainage diversion. This condition was cleared by the EPA in 2000. All bunds, pits and drains were inspected during the compliance review by Coterra Environment and were found to be maintained appropriately.

Two detention basins are located at the southern end of the site. Water is retained on site in these basins. At the commencement of excavation in summer, the water in the existing pit is pumped into one of the detention basins to result in a dry surface for machinery. All water is retained within the bunded area and there is no discharge to the local drainage system.

Water management procedures are set out in the table below.

POTENTIAL IMPACT	MANAGEMENT/ACTION	COMMITMENT	TIMING
Impact on surface and groundwater	1. Ensure compliance with the <i>Upper Swan Clay Excavations Regional Development, Drainage and Rehabilitation Strategy</i> and the <i>Environmental Management Program Clay Excavations Lot 201 Great Northern Highway, Upper Swan</i> .	Compliance with the <i>Upper Swan Clay Excavations Regional Development, Drainage and Rehabilitation Strategy</i> (Bowman, Bishaw and Gorham, 2001),	Ongoing
	2. Ensure groundwater table is not intercepted throughout excavation.		Ongoing
	3. Maintain the final land surface at least 2 metres above the groundwater table.		Ongoing

POTENTIAL IMPACT	MANAGEMENT/ACTION	COMMITTMENT	TIMING
	4. Ensure that there is capacity in the detention basins for high rainfall events.	<i>Environmental Management Program Clay Excavations Lot 201 Great Northern Highway, Upper Swan (RPS, Bowman Bishaw and Gorham, 2006)</i>	Ongoing
	5. Maintain all machinery in good condition to minimise risk of leaks and spills.		Ongoing
	6. Maintain the internal access road in good condition.		Ongoing
	7. Avoid spillages on roads and clean up promptly.		Ongoing
	8. Ensure rubbish is disposed of appropriately.		Ongoing
	9. Remove any illegal rubbish promptly.		Ongoing
	10. Provide an appropriately serviced portable toilet for on-site workers.		Ongoing
	11. Continue training programmes on water management requirements to all workers and contractors.		Ongoing
	12. Any significant adverse impacts to be recorded, investigated and remediated.		Ongoing
	13. Water retained on site can be used for dust suppression and tree watering if required (particularly during the summer months). Water is also likely to be lost through evaporation during summer.		Ongoing

### 5.5 Refuelling Management Plan

Protection of water resources from fuels and other chemicals will be managed through the Refuelling Management Plan.

Refuelling from mobile tankers will take place. This method is used on most mine and construction sites and used at other Austral Bricks operations. No fuel or chemicals or lubricants will be stored on site. Refuelling will be undertaken in the active pit area to allow for containment if a spill does occur. Loaders and bulldozers will be refuelled on site to the Department of Mines, Industry Regulation and Safety and Department of Water and Environmental Regulation's standards.

The main risk of contamination is the minor drips that occur during removal of the hoses etc. These minor spills are quickly degraded by soil microbial matter. Soil and resource should quickly be placed around a spill to contain it. Any drips or minor spills should be scooped up with the clay resource and sent to the works site where they are burnt with the clay during the firing process. Large spills should be removed from the site to an approved disposal area.

Impermeable liners will be used for any top-up oils.

The clay extraction process is a chemically free operation.

POTENTIAL IMPACT	MANAGEMENT/ACTION	COMMITTMENT	TIMING
Impact on surface and groundwater	1. No fuels, lubricants or chemicals will be stored on site. They are brought to the site as required.	Compliance with DWER and DMIRS regulations and this Excavation Management Plan.	Ongoing
	2. Major servicing of all machinery is to be done off site.		Ongoing
	3. Service all machinery and equipment in accordance with the maintenance schedule prescribed.		Ongoing
	4. Use an accidental spill containment and cleanup protocol.		Ongoing
	5. Regularly inspect fuel, oil and hydraulic fluids on machinery for wear or faults.		Ongoing
	6. Ensure refuelling and lubricating occurs in designated areas and equipment for the containment and clean-up of spills is provided.		Ongoing
	7. Contain spillages in working areas by shutting down equipment.		Ongoing
	8. Transport chemicals in accordance with the 'Australian Code for the Transport of Dangerous Goods by Road and Rail'.		Ongoing
	9. Any drips or minor spills should be scooped up with the clay resource and sent to the works site and burnt with the clay during the firing process.		Ongoing
	10. Any large spills should be removed from the site to an approved disposal area.		Ongoing
	11. Maintain the site in a tidy manner.		Ongoing
	12. All significant incidents are to be recorded, investigated and remediated.		Ongoing

### 5.6 Separation Distances & Visual Management

Separation distances and buffers serve the function of providing distance to sensitive land uses (such as residential dwellings). Implementation of separation distances and buffers should be used in conjunction with other management procedures (such as noise, dust and visual management). Visual impact can occur if the operation is set too high in the landscape, has insufficient visual protection or is too close to dwellings.

'EPA Guidance Statement No. 3' provides guidance on the separation distances and buffers for a range of industrial land uses to sensitive land uses. The distances stated in the policy assume the land use is not managed and, should best practice environmental management take place, these distances can be reduced. The operations on site fit into the category *Clay extraction or processing*. The separation distance is given as *500-1000 metres, depending on size and processing*, however this can be less with appropriate environmental management. In addition, no processing takes place on site which reduces the potential for impact. It should be noted that in the EPA's *Draft Environmental Assessment Guideline*



for Separation distances between industrial and sensitive land uses the separation distance is 300-500 metres.

The potential impacts listed in the Guidance Statement are noise and dust. These are managed through the Noise Management Plan and Dust Management Plan contained in this report. Austral Bricks adheres to best management practices to reduce the potential for noise and dust impact. The potential for noise and dust impacts can come from either extraction in the pit area or the transport of clay from the stockpile area.

The closest occupied residence is located to the north-east and is currently 450m from the extraction area. All other residences are 500m or more from the extraction area which meets the minimum separation distance recommended by EPA Guidance Statement No. 3.

Bund walls and screening vegetation is well-established on the site. Vegetation screening exists along the highway and a new vegetation belt has been planted on the eastern side of the property. This is particularly important for the dwelling to the north-east. Vegetation was planted along the boundary to provide visual screening as required by the previous approval. A bund wall is placed around the perimeter of the site. The overburden bund and topsoil stockpiles on the eastern side in particular assist in providing visual screening to the residences to the east.

The management actions in place to address separation distances are outlined below.

POTENTIAL IMPACT	MANAGEMENT/ACTION	COMMITMENT	TIMING
	1. Vegetation screening exists around the site to protect visual amenity and to prevent surrounding areas from dust impact.	Impact to surrounding areas from noise, dust or visual amenity will be minimised by complying with the Excavation Management Plan.	Already well established.
	2. Establish and maintain screening bunds using overburden.		Ongoing
	3. No processing of clay occurs on site which greatly reduces the potential for impact. Noise will generally be limited to sound made by trucks and machinery (which aren't generally much louder than farm vehicles).		Ongoing
	4. Excavations for most of the time will be below ground level. The walls of the pit will help screen it from surrounding properties.		Ongoing
	5. Locate transportable buildings, plant and stockpiles in areas of low visual impact.		Ongoing
	6. The operation complies with all Shire and State Government planning policies.		Ongoing



## 5.7 Waste Management

### Unauthorised access dumping of rubbish

The potential for illegal dumping of rubbish occurs from trespassers entering the site illegally. The site is currently fenced around the perimeter, gates are locked and signs are present which warn the public that the site is an open pit. This is to prevent and deter trespassers from entering the site.

Any illegally dumped material will be removed promptly and removed to an approved landfill site.

### Solid domestic waste and light industrial waste

The site will only be operational intermittently throughout the year so the potential for creating waste is small. Solid waste and light industrial waste will be stored in appropriate containers and removed from the site frequently to an approved landfill site.

### Wastewater disposal

Workers will only be present on site for a few weeks each year. During these times a transportable office/lunchroom and a portable toilet will be located on site. Wastewater will be disposed of from these facilities appropriately.

POTENTIAL IMPACT	MANAGEMENT/ACTION	COMMITMENT	TIMING
	1. Keep the site tidy and remove rubbish from the site to an approved waste disposal facility as required.	Compliance with this Excavation Management Plan	Ongoing
	2. Recycle waste where possible.		Ongoing
	3. Gates will be locked at all times when the site is not being operated on.		Ongoing
	4. Fences will be maintained around the site.		Ongoing
	5. Maintain the portable toilet facilities as required.		Ongoing

## 5.8 Rehabilitation Management Plan

### Introduction

Rehabilitation and Decommissioning Management Plans are required by Ministerial Statement 658. The following reports already outline rehabilitation for the site and have been approved:

- *Upper Swan Clay Excavations Regional Development, Drainage and Rehabilitation Strategy* (Bowman, Bishaw and Gorham, 2001)
- *Environmental Management Program Clay Excavations Lot 201 Great Northern Highway, Upper Swan* (RPS, Bowman Bishaw and Gorham, 2006).
- *Environmental Management Program Rehabilitation Addendum* (RPS, 2008)

These reports provide for the rehabilitation of the site to a stable landform comprising amenity lakes and grazing land. The *Upper Swan Clay Excavations Regional Development, Drainage and Rehabilitation Strategy* states that the excavation on this site includes a 'lakes concept' which 'could form the basis of

future development options, including progressive residential development provided the issue of land use compatibility can be satisfactorily resolved'. The Strategy states the following:

*Given the extent of clay excavation which is proposed for land on the eastern side of Great Northern Highway, and the fact that a new landform will be created, there is obvious potential for new initiatives in this area. For example, residential development is under consideration as a long-term use...Another option is development of a major tourist/recreational facility. This would have a water focus, based on the large area of lakes which would remain.*

The objective of rehabilitation as stated in the *Environmental Management Program Rehabilitation Addendum* is to 'restore the site to a stable landform that is aesthetically acceptable and capable of supporting a viable end use comprising amenity lakes and grazing land'.

The City of Swan Local Rural Planning Strategy identifies the site as *Rural Landscape*. The subdivision criteria for this area provides for a lot area range 20-50 hectares in the *Landscape* zone.

Rehabilitation steps and procedures are outlined below. An updated Rehabilitation Plan is provided at Appendix B.

POTENTIAL IMPACT	MANAGEMENT/ACTION	COMMITMENT	TIMING
Unsuccessful rehabilitation	1. Use overburden to re-contour slopes to a safe and stable condition.	Compliance with the <i>Upper Swan Clay Excavations Regional Development, Drainage and Rehabilitation Strategy</i> (Bowman, Bishaw and Gorham, 2001), <i>Environmental Management Program Clay Excavations Lot 201 Great Northern Highway, Upper Swan</i> (RPS, Bowman Bishaw and Gorham, 2006) and <i>Environmental Management Program Rehabilitation Addendum</i> (RPS, 2008).	During rehabilitation
	2. Maintain water drainage throughout the site.		Ongoing
	3. Plant the site in accordance with the <i>Environmental Management Program Rehabilitation Addendum</i> (RPS, 2008).		During rehabilitation
	4. Vehicles are to keep to tracks and the operational areas.		Ongoing
	5. No weed contaminated or suspect soil or plant particles will be brought on site		Ongoing
	6. The site is kept secure with perimeter fencing, signs and locked gates to avoid rubbish dumping from trespassers		Ongoing
	7. All rubbish is removed promptly from the site		Ongoing
	8. The site is monitored for the presence of weeds that pose a significant environmental risk		Ongoing
	9. Weed management will be integrated with usual rural weed management practices.		Ongoing
	10. Assess the success of rehabilitation and undertake additional planting of pasture species the following year if necessary.		The year following rehabilitation

### **5.9 Final site clean-up**

Site decommissioning and completion criteria are provided in the *Environmental Management Program Rehabilitation Addendum* (RPS, 2008).

All wastes on site will be appropriately managed during and after operation of the site in order to avoid environmental degradation. They will either be recycled or taken to an approved waste disposal site. Rubbish will be stored in large bins, which will be emptied at an appropriate rubbish tip. Clay excavation activities do not require the use of chemicals apart from lubrication materials and fuel.

After clay extraction activities have ceased, all equipment will be removed from the site and the final stages of rehabilitation and revegetation will occur.

## APPENDIX A

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### Application Forms



# Metropolitan Region Scheme Form 1 Application for Planning Approval



## Owner/s details

Registered proprietor/s (landowner/s) or the authorised agent's details **must** be provided in this section. If there are more than two landowners please provide all relevant information on a separate page. Signature/s must be provided by all registered proprietors or by an authorised agent. **Alternatively**, a letter of consent, which is signed by all registered proprietors or by the authorised agent, can be provided.

Full name  
Company/agency (if applicable) International Brick & Tile Pty Ltd  
ACN/ABN (if applicable) 31 003 281 123  
Postal address Group Administration Office, 738-780 Wallgrove road  
Town/suburb Horsley Park NSW Postcode 2175  
Signature The landowner/s or authorised agent consents to the applicant submitting this application  
Print name and position ROBERT BAKEWELL GRANT DOUGLAS (DIRECTORS)  
(if signing on behalf of a company or agency)

## Applicant details

Name/company Austral Bricks WA Pty Ltd  
Contact person Matthew Gordon  
Postal address Locked Bag 100  
Town/suburb Midland Postcode 6936  
Phone 9250 0530 Email matthew.gordon@australbricks.com.au  
Applicant signature  
Print name and position Matthew Gordon Resources & Transport Manager.  
(if signing on behalf of a company or agency) Date 25-1-18

## Property details

Certificate of title description of land:	Lot No	Location No
Plan or diagram D96431	201	
	Vol 2225	Folio 737

Certificate of title description of land:	Lot No	Location No
Plan or diagram	Vol	Folio

Title encumbrances (e.g. easements, restrictive covenants)	
Locality of development (house no., street name, suburb, etc)	1528 Great Northern Highway, Upper Swan
Nearest street intersection	Coondaree Parade
Existing building/land use	Extractive industries
Description of proposed development and/or use	Continuation of clay extraction
Nature of any existing buildings and/or use	Extractive industries
Approximate cost of proposed development (excl. gst) \$	
Estimated time of completion	10 years

## Office use only

Acceptance officer's initials  
Local government reference No.  
Date received  
Commission reference No.


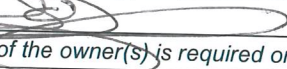
The information and plans provided with this application may be made available by the WAPC for public viewing in connection with the application.

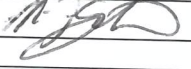


# SCHEDULE 6 — FORM OF APPLICATION FOR PLANNING APPROVAL

[cl. 9.1.1]

## Application for Planning Approval

<b>Owner details</b>			
Name: International Brick & Tile Pty Ltd			
Address: Group Administration Office, 738-780 Wallgrove Rd, Horsley Park NSW			
Postcode: 2175			
Phone: (work): (02) 9830 7800	Fax:	E-mail:	
(mobile):			
Contact person: Robert Bakewell/Grant Douglas			
Signature: 		Date: 20/11/17	
Signature: 		Date: 20/11/17	
The signature of the owner(s) is required on all applications. This application will not proceed without that signature.			

<b>Applicant details</b>			
Name: Austral Bricks WA Pty Ltd			
Address: Locked Bag 100 Midland WA			
Postcode: 6936			
Phone: 92500530 (work): (home): (mobile): 0404817773	Fax:	E-mail: matthew.gordon@australbricks.com.au	
Contact person for correspondence: Matthew Gordon			
Signature: 		Date: 25-1-18	

<b>Property details</b>			
Lot No: 201	House/Street No: 1528	Location No:	
Diagram or Plan No: D96431	Certificate of Title Vol. No: 2225	Folio: 737	
Diagram or Plan No:	Certificate of Title Vol. No:	Folio:	
Title encumbrances (e.g. easements, restrictive covenants):			
Street name: Great Northern Highway		Suburb: Upper Swan	
Nearest street intersection: Coondaree Parade			

<b>Existing building/land use:</b>
Description of proposed development and/or use: Continuation of clay extraction
Nature of any existing buildings and/or use: Extractive industries - clay extraction
Approximate cost of proposed development:
Estimated time of completion: 10 years

<b>OFFICE USE ONLY</b>	
Acceptance Officer's initials:	Date received:
Local government reference no:	

(The content of the form of application must conform to Schedule 6 but minor variations may be permitted to the format.)



LOCAL GOVERNMENT ACT 1960-1982.

City of Swan.

**By-law Relating to Extractive Industries.  
APPLICATION FOR EXCAVATION LICENCE**

**First Schedule.**

Name: Austral Bricks WA Pty Ltd

Address: Locked Bag 100 Midland WA

Telephone No. 92500530 Mobile No. 0404817773 Fax No.

**Address and locality of proposed excavation site:**

Lot 201 (No. 1528) Great Northern Highway, Upper Swan

**Particular land description:**

Lot No. 201 Location No.

Plan or Diagram No. D96431


Certificate of Title Volume 2225 Folio 737

Registered Owner of Land: International Brick & Tile Pty Ltd

Address of Owner: Locked Bag 100 Midland WA 6936

Material to be excavated: Clay

Term of licence sought: 10 years

Signed: 

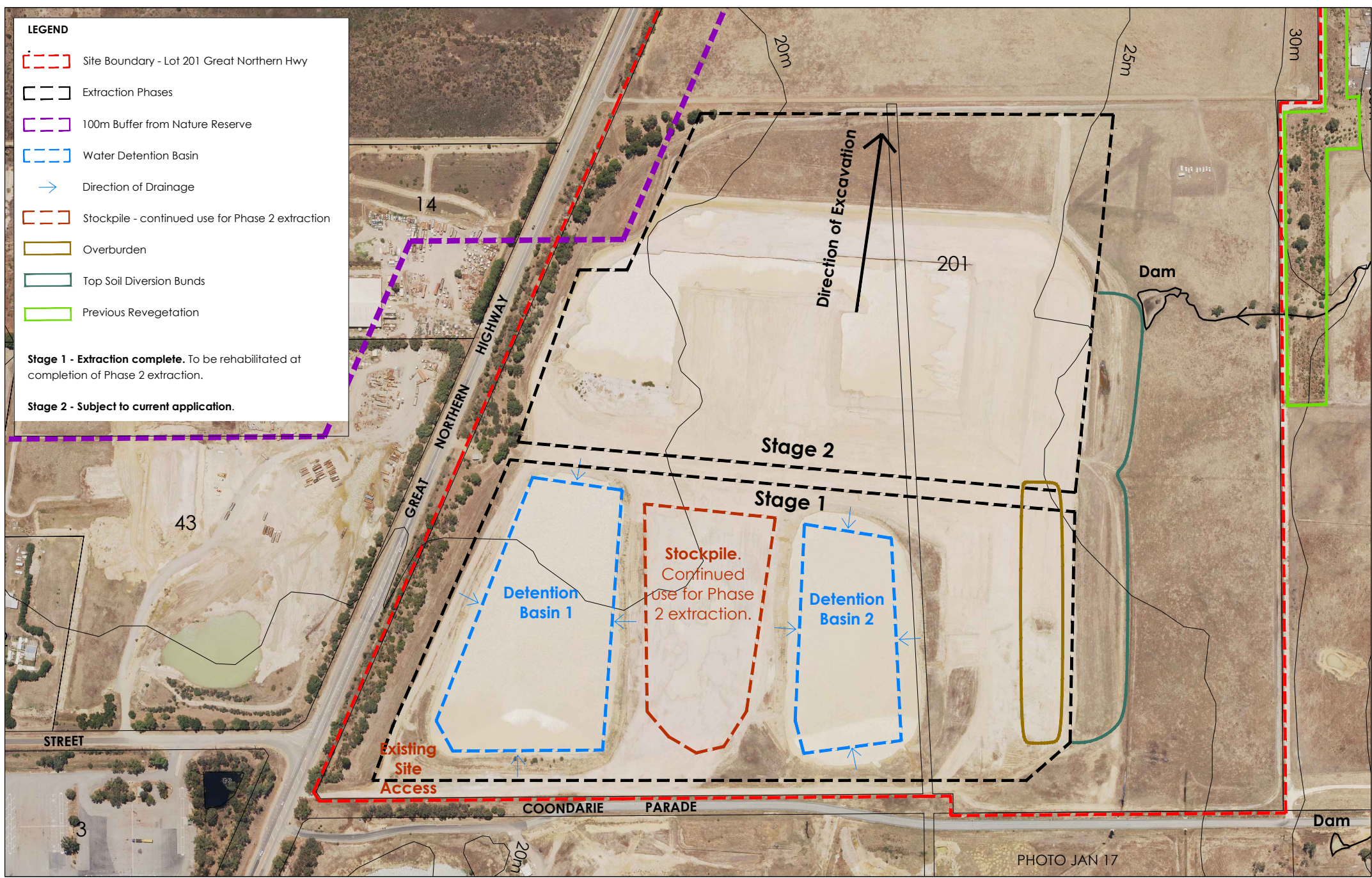
Date: 20/11/17

## APPENDIX B

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### Plans





**LEGEND**

- Site Boundary - Lot 201 Great Northern Hwy
- Extraction Phases
- 100m Buffer from Nature Reserve
- Water Detention Basin
- Direction of Drainage
- Stockpile - continued use for Phase 2 extraction
- Overburden
- Top Soil Diversion Bunds
- Previous Revegetation

**Stage 1 - Extraction complete.** To be rehabilitated at completion of Phase 2 extraction.

**Stage 2 - Subject to current application.**





## APPENDIX C

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### Certificate of Title



WESTERN



AUSTRALIA

**RECORD OF CERTIFICATE OF TITLE**  
UNDER THE TRANSFER OF LAND ACT 1893

REGISTER NUMBER	
<b>201/D96431</b>	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
<b>N/A</b>	<b>N/A</b>

VOLUME  
**2225**FOLIO  
**737**

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.



REGISTRAR OF TITLES

**LAND DESCRIPTION:**

LOT 201 ON DIAGRAM 96431

**REGISTERED PROPRIETOR:**  
(FIRST SCHEDULE)

INTERNATIONAL BRICK & TILE PTY LTD OF 1ST FLOOR, 66 KINGS PARK ROAD, WEST PERTH  
(A 1543623 ) REGISTERED 9/7/2003

**LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:**  
(SECOND SCHEDULE)

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.  
\* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.  
Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF TITLE-----

**STATEMENTS:**

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: D96431  
PREVIOUS TITLE: 1778-136, 2022-33  
PROPERTY STREET ADDRESS: 1528 GREAT NORTHERN HWY, UPPER SWAN.  
LOCAL GOVERNMENT AUTHORITY: CITY OF SWAN

## APPENDIX D

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### Complaints Register

## ENVIRONMENTAL COMPLAINTS FORM – Complaint No XX

PLAINTIFF:

POSITION:

COMPANY

ADDRESS

PHONE NO:

MOBILE NO:

DATE:

TIME:

PLANT:

KILN SPEED:

WIND SPEED:

WIND DIR:

PRODUCT IN DRYER:

PRODUCT IN KILN:

EXTERNAL TEMP:

---

COMPLAINT

---

INVESTIGATION

---

OUTCOMES & RECOMMENDATIONS

## APPENDIX E

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### Ministerial Environmental Approval



**OFFICE OF THE MINISTER FOR THE ENVIRONMENT**

General Manager  
Metro Brick Bristle Clay Tiles Pty Ltd  
Harper Street  
CAVERSHAM WA 6055

Dear Sir/Madam

**CHANGES TO ENVIRONMENTAL CONDITIONS FOR CLAY EXCAVATION PROPOSALS AT UPPER SWAN:**

**[1] Lots 10, 11 & Pt Lot 36 Great Northern Highway (Assessment No. 1431)**

The Minister for the Environment has issued a statement amending the conditions for the above proposal (copy attached). The statement does not remove requirements for you to obtain other statutory approvals.

As proponent you have the right to appeal against the amended conditions set in the statement within fourteen days of the date of publication.

Following that period and determination of any appeal, and at the request of the Minister, I will advise the decision-making authorities that they may exercise their decision-making powers.

At the request of the Minister, I will issue that advice earlier on receiving written confirmation that you accept the amended conditions and waive your right of appeal.

I note your additional commitment on cultural deposits on the site and liaison with the Department of Indigenous Affairs on the possible need to conduct archaeological studies.

Yours faithfully

Darren Walsh  
APPEALS CONVENOR for the  
**ENVIRONMENTAL PROTECTION ACT (1986)**

Att **17 SEP 2004**





MINISTER FOR THE ENVIRONMENT

Statement No.

000658

**STATEMENT TO AMEND CONDITIONS APPLYING TO A PROPOSAL  
(PURSUANT TO THE PROVISIONS OF SECTION 46 OF THE  
ENVIRONMENTAL PROTECTION ACT 1986)**

**CLAY EXCAVATION  
LOTS 10, 11 & PART LOT 36 GREAT NORTHERN HIGHWAY  
UPPER SWAN**

**Proposal:** The operation of a clay excavation facility in Upper Swan, as documented in schedule 1 of this statement.

**Proponent:** Metro Brick Bristle Clay Tiles Pty Ltd

**Proponent Address:** Harper Street, Caversham WA 6055

**Assessment Number:** 1431

**Previous Assessment Number:** 0322

**Previous Statement Number:** 226 (Published on 6 March 1992)

**Report of the Environmental Protection Authority:** Bulletin 1118

**Previous Report of the Environmental Protection Authority:** Bulletin 604

The implementation of the proposal to which the above reports of the Environmental Protection Authority relate is subject to the following conditions and procedures, which replace all previous conditions and procedures:

**1 Implementation**

- 1-1 The proponent shall implement the proposal as documented in schedule 1 of this statement subject to the conditions of this statement.

**2 Proponent Commitments**

- 2-1 The proponent shall implement the environmental management commitments documented in schedule 2 of this statement.

Published on

14 SEP 2004

### **3 Proponent Nomination and Contact Details**

- 3-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal until such time as the Minister for the Environment has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person as the proponent for the proposal.
- 3-2 If the proponent wishes to relinquish the nomination, the proponent shall apply for the transfer of proponent and provide a letter with a copy of this statement endorsed by the proposed replacement proponent that the proposal will be carried out in accordance with this statement. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal shall also be provided.
- 3-3 The nominated proponent shall notify the Department of Environment of any change of contact name and address within 60 days of such change.

### **4 Commencement and Time Limit of Approval**

- 4-1 The proponent shall substantially commence the proposal within five years of the date of the statement published on 6 March 1992 or the approval granted in that statement shall lapse and be void.

Note: The Minister for the Environment will determine any dispute as to whether the proposal has been substantially commenced.

- 4-2 The proponent shall make application for any extension of approval for the substantial commencement of the proposal beyond five years from the date of the statement published on 6 March 1992 to the Minister for the Environment, prior to the expiration of the five-year period referred to in condition 4-1.

The application shall demonstrate that:

- 1 the environmental factors of the proposal have not changed significantly;
- 2 new, significant, environmental issues have not arisen; and
- 3 all relevant government authorities have been consulted.

Note: The Minister for the Environment may consider the grant of an extension of the time limit of approval not exceeding five years for the substantial commencement of the proposal.

### **5 Compliance Audit and Performance Review**

- 5-1 The proponent shall prepare an audit program and submit compliance reports to the Department of Environment which address:



- 1 the status of implementation of the proposal as defined in schedule 1 of this statement;
- 2 evidence of compliance with the conditions and commitments; and
- 3 the performance of the environmental management plans and programs.

Note: Under sections 48(1) and 47(2) of the *Environmental Protection Act 1986*, the Chief Executive Officer of the Department of Environment is empowered to audit the compliance of the proponent with the statement and should directly receive the compliance documentation, including environmental management plans, related to the conditions, procedures and commitments contained in this statement.

- 5-2 The proponent may excavate clay indefinitely, subject to the acceptability of performance review reports which shall be submitted every five years after the start of the operations phase, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The performance review reports shall address the following:

- 1 the major environmental issues associated with the project; the targets for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those targets;
- 2 the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable;
- 3 significant improvements gained in environmental management, including the use of external peer reviews;
- 4 stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; and
- 5 the proposed environmental targets over the next five years, including improvements in technology and management processes.

## **6 Drainage Management**

- 6-1 Prior to quarrying activities and in consultation with the Department of Conservation and Land Management, Main Roads WA, the Swan River Trust and the City of Swan, the proponent shall prepare a Drainage Management Plan to protect the fenced-off habitat of the Western Swamp Tortoise at Ellen Brook Nature Reserve from external surface water drainage impacts of the proposal, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

This plan shall address the following:

- 1 monitoring of drainage to detect, report on, and manage any drainage impacts on the Wildlife Sanctuary for the Western Swamp Tortoise at Ellen Brook Nature Reserve;
  - 2 remediation of any unacceptable drainage impacts on the Wildlife Sanctuary caused by this proposal;
  - 3 detention of all drainage waters on-site in the first three years of operation, so that they do not enter the Wildlife Sanctuary at the Ellen Brook Nature Reserve nor create an unacceptable impact elsewhere; and
  - 4 diversion of all drainage waters from the eastern side of the Great Northern Highway to prevent their entering the Wildlife Sanctuary area at Ellen Brook Nature Reserve within two years following the date of the statement published on 6 March 1992, and in doing so, ensuring that this action does not cause an unacceptable impact elsewhere.
- 6-2 The proponent shall make publicly available and subsequently implement the Drainage Management Plan being part of the Environmental Management Programme required by condition 8, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

## **7 Wildlife Sanctuary Buffer**

- 7-1 The proponent shall not quarry within 100 metres of the boundaries of the Wildlife Sanctuary at Ellen Brook Nature Reserve, until further investigations demonstrate, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority and the Department of Conservation and Land Management, that adverse effects upon the tortoise habitat will not occur.

## **8 Environmental Management Programme**

- 8-1 The proponent shall prepare, make publicly available and subsequently implement an Environmental Management Programme, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The plans, strategies or reports to be prepared as part of the Environmental Management Programme shall include the following:

- 1 a staged quarrying strategy;
- 2 drainage management (see condition 6);
- 3 groundwater management and protection;
- 4 progressive rehabilitation of the site;



- 5 procedures to minimise noise, dust and visual impacts associated with the quarrying and transport operations;
- 6 public safety and mosquito breeding;
- 7 periodic reporting of monitoring results; and
- 8 consequential changes to project management to remedy unacceptable impacts.

## **9 Regional Development, Drainage and Rehabilitation**

- 9-1 The proponent shall contribute to the preparation of a regional development, drainage and rehabilitation strategy for the Upper Swan Locality in consultation with the Department of Conservation and Land Management, the Department for Planning and Infrastructure, the City of Swan, and other current and known proposed clay producers in the area, such that the strategy can be prepared within two years following the date of the statement published on 6 March 1992, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

## **10 Decommissioning/Closure Plans**

- 10-1 Within two years following the date of the statement published on 6 March 1992, the proponent shall prepare a Preliminary Decommissioning/Closure Plan, which provides the framework to ensure that the site is left in an environmentally acceptable condition to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The Preliminary Decommissioning/Closure Plan shall address:

- 1 rationale for the siting and design of plant and infrastructure as relevant to environmental protection, and conceptual plans for the removal or, if appropriate, retention of plant and infrastructure;
  - 2 long-term management of ground and surface water systems;
  - 3 a conceptual rehabilitation plan for all disturbed areas and a description of a process to agree on the end land use(s) with all stakeholders;
  - 4 a conceptual plan for a care and maintenance phase; and
  - 5 management of noxious materials to avoid the creation of contaminated areas.
- 10-2 At least 12 months prior to the anticipated date of decommissioning/closure, or at a time agreed with the Environmental Protection Authority, the proponent shall prepare a Final Decommissioning/Closure Plan designed to ensure that the site is left in an environmentally acceptable condition to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The Final Decommissioning/Closure Plan shall address:

- 1 removal or, if appropriate, retention of plant and infrastructure in consultation with relevant stakeholders;
- 2 long-term management of ground and surface water systems;
- 3 rehabilitation of all disturbed areas to a standard suitable for the agreed new land use(s); and
- 4 identification of contaminated areas, including provision of evidence of notification and proposed management measures to relevant statutory authorities.

10-3 The proponent shall implement the Final Decommissioning/Closure Plan required by condition 10-2 until such time as the Minister for the Environment determines, on advice of the Environmental Protection Authority, that the proponent's decommissioning/closure responsibilities have been fulfilled.

10-4 The proponent shall make publicly available the Final Decommissioning/Closure Plan required by condition 10-2 to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

## Procedures

- 1 Where a condition states "to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority", the Environmental Protection Authority will provide that advice to the Department of Environment for the preparation of written notice to the proponent.
- 2 The Environmental Protection Authority may seek advice from other agencies or organisations, as required, in order to provide its advice to the Department of Environment.

## Notes

- 1 The Minister for the Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environment over the fulfilment of the requirements of the conditions.

*Judy Edwards*

Dr Judy Edwards MLA  
MINISTER FOR THE ENVIRONMENT

14 SEP 2004

## Schedule 1

### The Proposal (Assessment No. 1431)

This proposal is located outside the Western Swamp Tortoise Environmental Protection Policy area.

Clay excavation has proceeded in a westerly direction from the previously excavated central area of Lot 10. Future excavations will continue to the west within Lot 10 towards Great Northern Highway.

There is generally only one mining campaign per year for four to six weeks in which clay is excavated and stockpiled onsite. Clay is transported to the Malaga Works in roughly monthly intervals on an as-required basis.

The Key Proposal Characteristics are shown in Table 1.

**Table 1 – Key Proposal Characteristics**

Element	Quantities/Description
Size of Clay Body (million tonnes)	1.6
#Total Area of Disturbance (ha)	50.0
*Rate of Extraction (tonnes per year)	100,000
Major Infrastructure	nil
Overburden (million tonnes)	1.6 (1:1 ratio to clay)
Water Usage	nil

# will also be rehabilitated.

\* estimated at present usage.

### Figures (attached).

Figure 1 – Location.

Figure 2 – Proposed archaeological survey sites.



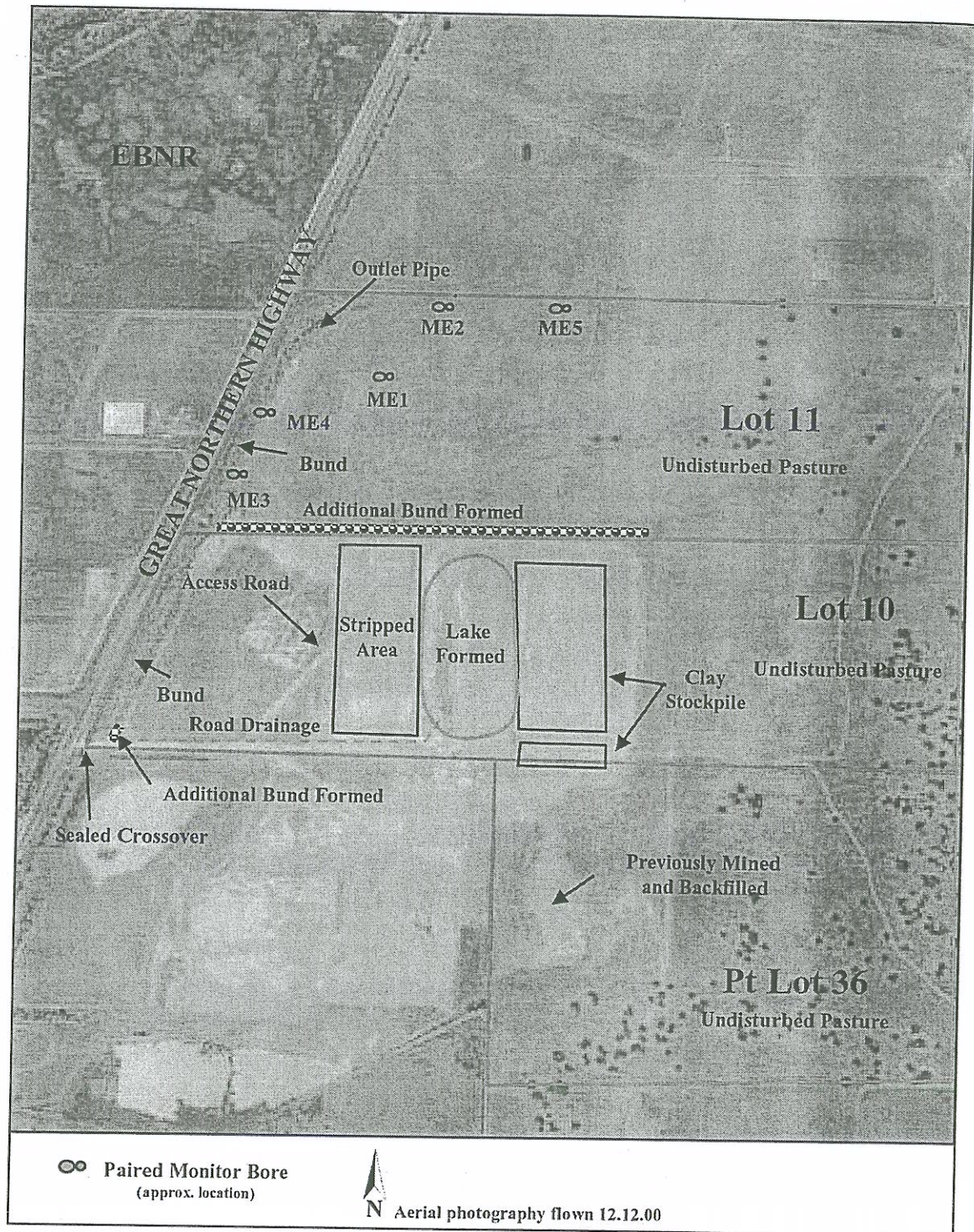


Figure 1: Location.



**Proponent's Environmental Management Commitments**

1992, as amended

**CLAY EXCAVATION  
LOTS 10, 11 & PART LOT 36  
GREAT NORTHERN HIGHWAY, UPPER SWAN**

(Assessment No. 1431)

**METRO BRICK BRISTILE CLAY TILES PTY LTD**

## Proponent's Environmental Management Commitments (consistent with commitments detailed in 1992)

### CLAY EXCAVATION LOTS 10, 11 & PART LOT 36 GREAT NORTHERN HIGHWAY UPPER SWAN (Assessment No. 1431)

The proponent is committed to the overall environmental management and rehabilitation philosophy outlined in the Consultative Environmental Review and subsequent modifications as outlined in Appendices 2 and 3 of Environmental Protection Authority Bulletin 604.

In specific terms, this means the proponent will:

- (1) Consult with the Planning Authorities to facilitate the derivation of a long-term strategic plan for the locality, which recognises and accepts the interim priority land use of clay extraction.
- (2) Establish an inter-company liaison mechanism to enable a coordinated approach between all three proponents of the nearby clay excavation projects with respect to addressing potential cumulative operational effects and overall rehabilitation goals.
- (3) Implement the management techniques described in both Sections 5 and 6 of the Consultative Environmental Review to ensure that adverse effects are not experienced in relation to:
  1. potential visual intrusion for residents at Upper Swan and through-traffic on Great Northern Highway;
  2. potential noise and dust disturbance of the residents at Upper Swan, particularly near the road junction of Apple Street and Almeria Parade;
  3. potential erosion of working areas and stockpiles and consequent silt transport to local drainage; and
  4. dewatering of accumulated rainfall and (perhaps) groundwater seepage from the working area of the pit which may be necessary to allow excavation to proceed.
- (4) Implement routine surveillance of the quarries at regular intervals throughout the year to assess critical parameters identified in the monitoring programme.
- (5) Rehabilitate previously worked areas sequentially as soon as practicable in accordance with the rehabilitation objectives developed in consultation with the Department of Conservation and Land Management, the Department for Planning and Infrastructure, the City of Swan and the landowner (ie. in respect of leasehold arrangements).
- (6) Contain any turbid water within its excavations and immediate surroundings to ensure it does not flow onto the tortoise habitat.
- (7) Not quarry within a hundred metres of the nature reserve boundary, until further investigations are able to conclusively demonstrate that no adverse effect could occur.

- (8)
  - 8.1 Prepare an Environmental Monitoring and Management Programme to the requirements of the Environmental Protection Authority prior to commencement of operations at the site.
  - 8.2 Implement the Environmental Monitoring and Management Programme outlined in 8.1 to the requirements of the Environmental Protection Authority.
- (9) Verify that no adverse effects on the Short-Necked Tortoise habitat are experienced, by appropriate staging and monitoring of excavations.
- (10) Not excavate below the permanent water table and, if the excavation did reach the water table, the area would be backfilled to maintain at least one metre of cover.
- (11) Undertake an archaeological survey in the areas currently undisturbed by clay excavation activities within the project area, prior to clay excavation in these areas. (See figure 2 attached).
- (12) In the event that Aboriginal cultural deposits are discovered during the archaeological survey referred to in commitment 11 above or uncovered as a result of clay excavation or any other activities, work in the immediate area will cease immediately and the discovery will be reported to the Department of Indigenous Affairs.