DEVELOPMENT SERVICES ATTACHMENTS
ORDINARY MEETING OF COUNCIL
WEDNESDAY 18 NOVEMBER 2026

REPORT NUMBER	REPORT TITLE AND ATTACHMENT DESCRIPTION	PAGE NUMBER(S)
DS01 – 11/26	**LOT 301 (NO. 88) CALADENIA CLOSE, LOWER CHITTERING – INDUSTRY: EXTRACTIVE** **Attachments** 1. Extractive Industry Management Plan - Kep Djalam (Muchea 5) - March 2026 2. Schedule of Submissions	1 – 101

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9th March 2026

Melinda Prinsloo
Chief Executive Officer
Shire of Chittering
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Bindoon WA 6502

Muchea 5 (Kep Djalam) Quarry
Development Approval and Extractive Industry Licence Application

Dear Melinda,

Midland Brick Pty Ltd operates an extractive industry on a portion of Lot 301 Wandena Road, Lower Chittering referred to as the "Muchea 5 (Kep Djalam) Quarry". The quarry is located at the central western side of Lot 301. We are seeking Development Approval and an Extractive Industry Licence from the Shire to continue existing clay extraction operations and to authorise the expansion of quarrying activities as indicated in the attached "Excavation Plan".

Attached to this letter is a supporting report which provides the planning and environmental context to support the Development Approval and Extractive Industry Licence applications. This report includes a detailed description of the operation, the planning and environmental regulatory context, environmental risk assessment and various environmental/operational management plans. Also attached is a copy of the Certificate of Title and the application forms, signed by both the applicant and the landowner.

We thank the Shire of Chittering for the consideration of this application and look forward to hearing back in due course. We would be grateful if the Shire is able to please forward an invoice for the planning application fee and we will arrange payment.

If you have any queries regarding the application or require further information, please do not hesitate to contact me.

Sincerely,

Sharee Rasmussen
Principal Environmental Advisor

ATTACHMENT 1 –

APPLICATION REPORT

DEVELOPMENT APPLICATION

EXTRACTIVE INDUSTRY LICENCE APPLICATION

Kep Djalam (Muchea 5)

LOT 301 WANDENA ROAD, LOWER CHITTERING

PREPARED FOR
MIDLAND BRICK PTY LTD

March 2026

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March-26	Rev2b	AA	Final	March-26

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Executive summary

This document forms the basis of a Development Application and Extractive Industry Licence for the proposed extension of existing operations at the Muchea 5 (Kep Djalam) clay quarry located at Lot 301 Wandena Road, Lower Chittering, within the Shire of Chittering.

The clay quarry is located on a 161.44ha lot and has been in operation for approximately 25-30 years. This application seeks to remove additional clay resources from the site within the existing quarry area and a proposed extension of the current operations comprising approximately 3.5ha (total operational area is 9ha). The site is approximately 5km to the east of the townsite of Muchea.

The document provides detailed information on the project's scope, operations, and compliance with regulations to ensure a comprehensive understanding of the proposed quarry development, with a summary provided below:

ELEMENT	DESCRIPTION
Operating times	The hours of operation will be from 07:00 to 18:00 hours from Monday to Saturday. No operation will occur on Sundays or Public Holidays.
Life of project	10+ years.
Volume extracted	Approximately 60,000 tonnes annually.
Site preparation	Limited site preparation is required as the site is already established for clay extraction. Some removal of trees is required, and this will form part of a separate application for a clearing permit with DWER. The planned expansion will be partially obscured by a row of mature trees, which were intentionally planted by Midland Brick several decades ago to serve as a visual barrier once the current excavation progressed to this area. Drainage systems are already in place. New drainage management will be established as the excavation progresses or moves into new areas. Road access, signage and fencing have already been established.
Operation Area	The operation area (encompassing the existing quarry and proposed expansion) is approximately 9ha. The proposed excavation area (expansion area) is approximately 3.5 hectares to the east.
Depth	The depth of excavation will be approximately 10m.

ELEMENT	DESCRIPTION
Excavation process	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), **Carting Campaign** (transport of clay directly to the factories) and **Rehabilitation**. In general, the steps will involve the following: • Overburden and topsoil will be removed from excavation area. It will be stockpiled in bunds around the perimeter of the pit to be used as part of land recontouring during rehabilitation. • Excavation will take either one of two methods. The first method is direct loading of excavated clay into road trucks. The second method will be excavating and loading into dump trucks, then placing into road trucks working within the already-excavated area. • Excavation will generally progress west to east across the newly proposed site area. • It is not intended that long term stockpiling of clay will be required for this operation. However, any short-term stockpiles required will be located within the excavation area and not visible form surrounding properties. • Previously excavated areas will be utilised as water detention basins for drainage management, to access other parts of the quarry. • Clay will be transported off-site during a carting campaign.
Access	Access to the site will continue to be from the existing access off Wandena Road.
Workforce	2-6 people on site during the earthworks and carting campaigns.
Vehicle movements	It is expected that there will be a maximum of 60 truck movements per day when carting is occurring. Carting will take place for approximately 4 days each month throughout the year. This equates to approximately 1,430 truck loads each year. Truck numbers may vary slightly from this depending on demand.
Refuelling	The operation will use mobile refuelling for excavation equipment only (not cartage trucks). There will be no storage of fuel on site.
Environmental management	The proposed excavation operation has been subject to an environmental risk assessment (this is presented in Chapter 5). This has considered ways to avoid, reduce and mitigate environmental impact.
Water Management	All rainwater is retained within the operation area and is collected in the drainage basin and at the base of the pit.
Structures	A temporary portable toilet will be used when the site is operational.
Decommissioning	The pit will be recontoured to a safe and stable condition and the site will be returned to pasture utilising clean fill that will be deposited by the landowner as excavation progresses.

The proposed Muchea 5 (Kep Djalam) site is intended to replace the nearly exhausted Muchea 3 (Njimarak) quarry in Midland Brick's clay supply chain. This new quarry will operate on a much smaller scale than Muchea 3. While Muchea 3, located south of the new site, is allowed 130 carting days, Muchea 5 will run at about 48 carting days—a significantly less intensive operation.

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1 Introduction

1.1 Background

Land Insights act on behalf of Midland Brick Pty Ltd (the Applicant) in lodging this Development Application (DA) and Extractive Industry Licence (EIL) application for the "Muchea 5" (Kep Djalam) clay quarry, located at Lot 301 Wandena Road, Lower Chittering.

The application seeks approval to continue existing clay extraction operations and to authorise the expansion of quarrying activities within the approved extraction footprint. The proposal relates to the existing quarry area and the proposed expansion area, collectively defined as the "Operation Area" on the accompanying Excavation Plan.

1.2 Purpose of this report

The purpose of this report is to provide the planning and environmental context to support the Development Approval and Extractive Industry Licence application, including the requirements from State Planning Policy 2.4 – Planning for Basic Raw Materials (WAPC, 2021) and the Shire of Chittering Extractive Industry Local Law 2014.

1.3 Location and Context

Lot 301 is located on Wandena Road, Muchea within the Shire of Chittering. As shown on the map below the site is located directly south of the Muchea Landfill site and is surrounded by agricultural land. Other land uses within the vicinity of the site are other extractive industries along with industrial uses and the Muchea livestock centre. A rural residential area is located to the east of the site with dwellings located outside of the 500m separation distance (buffer).

Lot 301 is 161.44ha in area and predominantly cleared with the extractive industry taking up a small portion of the site on the western fringe.

Figure 1.1 provides an overview of the location and context of the site in relation to surrounding development and features.

1.4 Tenure

Table 1.1 provides details on the title and tenure of Lot 301.

Table 1.1 – Ownership Details

Lot #	Plan	Volume	Folio	Owner
301	427146	4056	155	Demo Investment 3 Pty Ltd

The owner of the property has signed the Development Application and Extractive Industry Forms and consequently supports the proposal.

Prior to July 2024, Lot 301 was known as Lot 9001.

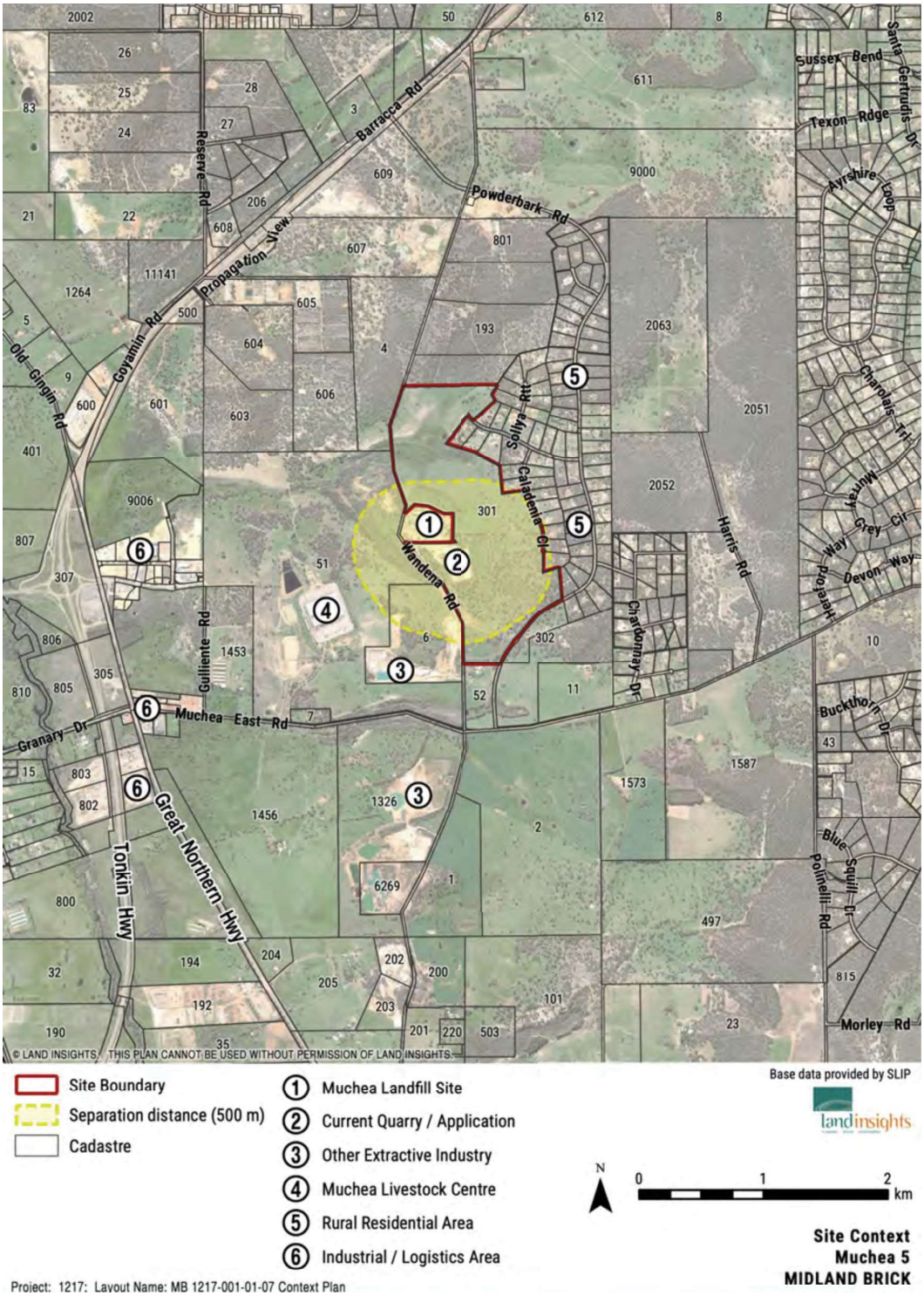


Figure 1.1 – Location and Context

1.5 Other approvals

The Shire of Chittering considered an application for landfill and rehabilitation of a portion of the existing quarry on Lot 9001 (now Lot 301) at its Ordinary Meeting held on 15 November 2023. The proposal called for the use of clean landfill to rehabilitate the existing clay pit so that it can be returned to agricultural purposes (submitted by another entity).

Inert building material is used in the rehabilitation of the clay pit and includes concrete, bricks, limestone, rock, rubble, road making materials and sand. No other types of landfill, such as hazardous or putrescible waste, is permitted.

After considering the application, Council resolved to grant development approval for a period of 20 years and subject to a range of conditions intended to protect the amenity of the locality and ensure the landfill operation is operated appropriately.

Whilst this approval relates to the existing excavated areas, it is intended that the new excavation will be similarly rehabilitated at a later date (subject to a future application).

1.6 Significance of the resource

Clay is an essential basic raw material used in the manufacture of roof tiles, 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 Perth housing industry is almost entirely reliant on the supply of economic and quality bricks and Midland Brick has provided the bricks for over 60% of all homes in Perth. This resource is a critical part of the production of these bricks and therefore homes for Western Australians.

The proposed expansion of the Muchea 5 (Kep Djalam) quarry is required to ensure the ongoing availability of locally sourced clay to support continued brick production and meet current and forecast demand from the Perth metropolitan housing market. Without the expansion of the quarry, the long-term supply of this essential resource would be constrained, potentially impacting the availability and affordability of construction materials.

The site is located in close proximity to the Perth Metropolitan Area and comprises important clay resources that will continue to supply the Midland Brick manufacturing facilities. Clay has been excavated from the Muchea area for many years, demonstrating the long-established suitability of the area for extractive industry operations.

The importance of clay to the community is reflected in *State Planning Policy 2.4: Basic Raw Materials* (WAPC, 2021). This site is mapped as a "Significant Geological Supply" in State Planning Policy 2.4.

1.7 Environmental considerations

The proposed excavation has undergone an environmental assessment to identify measures that prevent or lessen its impact. This aligns with State Planning Policy 2.4 Objective (e), which requires extraction activities to avoid, minimise, or mitigate harm to the community, water resources, and biodiversity.

Chapter 5 contains an environmental risk assessment, followed by a series of environmental management plans.

2 Operations

2.1 Extension to existing pit

Operations have been occurring on the site for a significant period of time (over 25 years). The resource has been extracted based on a "Use not Listed" with the site being rehabilitated as the excavation takes place. The Shire of Chittering has advised that should an extension to the existing operations be required, a Development Application and an Extractive Industry Licence will need to be lodged with the Shire for determination. This DA/EIL application has been prepared to seek approval for the extension of current operations as shown on excavation plan (refer to Figure 2.1).

2.2 Site preparation

Since the site is already used for extractive industry, only minimal additional preparation will be needed. Existing infrastructure—including signage, fencing, gates, security measures, site access, bunding, internal access roads, and drainage management—is already established. Some vegetation will need to be cleared in the planned extension area; this will be addressed through a separate Clearing Permit application to DWER. As excavation continues, drainage management, bunding, and internal access roads will be maintained and adjusted as necessary throughout the site.

2.3 Access arrangements

Access to the site will continue to be from Wandena Road. Once on the property, an existing haul road will be used to access the pit area.

Unauthorised access to the site is restricted by a locked gate at the entrance to the property and the property is fenced around the boundary.

2.4 Hours of Operation

It is expected that the hours of operation for the site will be from 07:00 to 18:00 hours from Monday to Saturday. No operation will occur on Sundays or Public Holidays.

2.5 Overview of extraction process

The methods of extraction will be the same as the operations that take place within the current existing clay pit. Excavation of clay takes place in a sequence of steps which can be broadly broken down into the following:

- Earthworks Campaign (i.e., removal of topsoil and overburden, excavation of clay to short term stockpile if required)
- Cartage Campaign (transport of clay from the excavation area or stockpiles to the factories)
- Rehabilitation.

It should be noted that the extraction and carting operations follow different patterns. Extraction (earthworks) usually occurs during dry conditions and takes place in campaigns for the equivalent of 4 to 5 months per year, with the site remaining dormant for extraction activities for 7 to 8 months. In contrast, carting occurs throughout the year on an intermittent basis (approximately 4 days per month) as clay is transported from stockpiles to factories based on demand.

2.6 Earthworks Campaign

The "Earthworks Campaign" involves excavating and stockpiling materials, such as removing topsoil and overburden, and digging resource. Topsoil and overburden are removed from the underlying clay resource and stockpiled on the site. Overburden is usually stockpiled around the perimeter of the pit to provide screening. The Operation Area covers all excavation and stockpiling sites, as outlined in Figure 2.1.

An earthworks campaign will take place for the equivalent of approximately 4 to 5 months each year, spread across multiple campaigns. During each campaign excavation will generally take place for six days a week during the approved operation times.

There will be no processing of resource (screening and crushing) and no blasting will be required.

Machinery and vehicles used for the excavation campaign includes:

- Excavator
- Dozer
- Dump truck
- Wheel loader
- Water cart
- Haul trucks.

2.7 Cartage and Truck Movements

The "Cartage Campaign" refers to the removal or transport of clay from the site where it is taken to brickmaking factories located in the Perth Metropolitan area. Carting occurs throughout the year on an intermittent basis.

Carting will take place for approximately 4 days each month throughout the year, equating to approximately 48 carting days annually. It is expected that there will be a maximum of 60 truck movements per day when carting is occurring, resulting in approximately 1,430 truck loads each year. Each truck can carry 42 tonnes of clay (RAV 2 truck and dog combination), resulting in an average annual tonnage of approximately 60,000 tonnes. Truck numbers may vary slightly depending on market demand and clay requirements at the factories.

The stockpile area will be located within the Operation Area. The stockpile area will also be used to blend clays. Blending and loading of clay in the stockpile area will use a front-end loader.

All trucks exit the site onto Wandena Road, travel south to Great Northern Highway, and then continue to Perth Metropolitan Region factories. Midland Brick operates two other clay quarries on Wandena Road, currently focusing on "Muchea 3 (Njimarak)" and "Muchea 6 (Wardan Boya)". Clay truck traffic now serves these sites via Wandena Road and Great Northern Highway.

Muchea 3 (Nyimarak) is nearing closure. While truck movements will shift to Muchea 5 quarry, there will be no net increase in clay truck traffic on Wandena Road, and total truck movements are expected to decrease as annual tonnage and cartage days for Muchea 5 will likely be lower than Muchea 3.

It is important to note that the clay supply chain is finite in that only a certain tonnage can be accommodated at the factory at any given time. This limitation, as well as distance to factory, in

turn sets the total number of truck movements that can be made each carting day. The need to keep as small a fleet as busy as possible means that trucks are allocated to different quarries at different times rather than more trucks being operated.

2.8 Depth of excavation

The proposed extraction depth will be similar to the current pit, around 10–12 metres, though the exact depth may vary in different parts of the quarry due to variations in geology, overburden thickness, and the resource itself. Despite detailed planning and site investigations, minor differences from the mapped areas may occur. Importantly, the extraction activities will not intersect the groundwater table.

2.9 Topsoil and overburden

Topsoil and overburden, consisting of gravel, sand with lateritic clays is removed prior to excavation commencing in new areas. The depth of overburden is up to 3 metres in depth, depending on the location.

Topsoil is scraped from the top of the area to be excavated to a depth of approximately 0.5 metres. Topsoil stripping occurs progressively as required. This approach allows topsoil to remain in place as long as possible, maintaining soil health and minimising erosion. Once stripped, topsoil is pushed to form low stockpiles of approximately 1 to 2 metres in height for later use in rehabilitation.

Overburden is scraped from the surface and used to create bunds along the perimeter of the excavation/pit area. This practice will continue as the excavation progresses. Overburden bunds assist with drainage management and noise and dust reduction. It is generally placed around the perimeter of the excavation area, so it is ready to be pushed back into the excavation area for future recontouring.

2.10 Plant and on-site equipment

Permanent structures are not required for operations. Self-contained, temporary ablution facilities will be available as needed.

Excavation equipment, including a dozer, excavator, water truck, haul trucks, dump truck, and front-end loader, will be mobilized on an as-needed basis and demobilized at the conclusion of each earthworks campaign.

Bulk storage of fuel, oil, or chemicals will not be maintained on site. All supplies will be delivered as required. Rubbish bins will be provided for use by site personnel.

2.11 Workforce

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

2.12 Other Controls

Excavation activities on site will be conducted in accordance with the Mines Safety and Inspection Act 1994 and the Mines and Safety and Inspection Act Regulations 1995. Operation inspections are

regularly carried out by the Department of Local Government, Industry Regulation and Safety (DLGIRS) who inspect safety, operational procedures and workplace health such as dust and noise.

Operations are managed by a licenced Quarry Manager and inspections occur on a daily basis during the excavation and cartage campaigns. Midland Brick has procedures in place to manage safety, health, environmental impact, site completion and rehabilitation.

In terms of occupational health and safety, Midland Brick requires full personal protection be 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. There is a site entry "call up" procedure in place. The site is within mobile phone contact and all vehicles are equipped with two-way radios.

Site closure and decommissioning will also be regulated by the DLGIRS. DLGIRS will require Midland Brick to prepare a Mine Closure Plan once they have completed site rehabilitation and they will inspect the site to ensure it is safe and stable (as required by the Mines Safety and Inspection Act 1994). Similarly, should the quarry be temporarily unused for a period of time, the excavation will be made safe to comply with the Act such as maintaining pit faces in a stable manner and ensuring surface water runoff continues to be retained on site within detention basins.

Fences, gates and warning signs required by DLGIRS, and the Shire of Chittering will be maintained and have been maintained over the life of the current extractive operations.

2.13 Public Safety

Public access to the site is restricted and appropriate warning signs are located at the entrance regarding quarrying and restricted entrance. The site has locked gates when it is not being worked. As part of the recent approval granted by the Shire in relation to fill and rehabilitation on the site a new boundary fence has been installed to maintain public safety. When the site is not operational, the Quarry Manager periodically checks to ensure the site is secure and safe.

2.14 Bushfire

The quarry is located within a Bushfire Prone Area as mapped by the DPLH. The applicability of the Planning for Bushfire Guidelines is discussed at section 3.6 of this report.

The greatest risk of starting a fire from operations on site are during clearing of vegetation and stripping of topsoil, particularly during hot and windy conditions. This type of work in summer can generate sparks which when combined with dry grasses and leaves may lead to fire. To minimise this risk, topsoil is only stripped progressively as required, immediately before excavation of each new section, rather than clearing large areas at once.

Standard Operating Practices

There are a range of activities documented (known as "Standard Operating Practices" – SOP) within Midland Brick to assist staff in carrying out work in a safe and efficient manner.

Many SOP's linked with mobile equipment have actions for operators to check around and under the machine for sources of fuel that could be a problem. All staff are trained to carry out daily pre-start checks on their machinery. One of the checks is for hydrocarbon leaks. Staff are trained on how to contain a hydrocarbon leak.

Each year in spring, the company uses a grader to cut fire breaks around all properties used for mining or buffers. Fire breaks will be inspected during the summer to ensure the 3m x 4m rule and mineral earth rule are in place.

Machine maintenance and refuelling is carried out in areas free from fuel burdens. The mobile mining equipment is nearly always in the mine area, hence well away from dry grass and leaves.

Pre-Start Meetings

The Quarry Managers in control of Midland Brick mining and transport teams hold briefing sessions for their work crews every morning. The points of discussion will always cover:

- Safety – issues from yesterday and anything likely to be aware of today, including hazards, incidents/near misses
- Production – what we are doing, where and quality. Allocation of water trucks to sites will be discussed at this time.
- Issues for today – weather conditions and warnings, possible visitors to the site, maintenance of any plant etc.

To prepare for the next day's quarrying activities, the Quarry Manager will review forecasts from Bureau of Meteorology daily to check for temp and wind plus check warnings from DFES during extremely hot windy days. All staff are briefed at the morning pre-start meeting about likely fire dangers and the possibility of lightning developing and compliance with Lightning Procedures. Midland Brick comply with warnings prepared by DFES.

Fuel load reduction

Midland Brick encourages the owners of land used for clay mining to graze the paddocks to reduce the fuel loads from winter annual grasses. It should be noted that Midland Brick does not own the land and is not responsible for the fire control measures for the remainder of Lot 301.

Fire response

The Midland Brick team have developed an Emergency Management Plan and have trained their staff in what to do in all types of emergencies. Should there be a small fire associated with any quarrying equipment it will be treated immediately.

All mobile plant carries at least one portable fire extinguisher. Operators are trained in the correct use of various types of handheld fire extinguishers.

Stormwater is retained within the operation area in a dam for internal use. This source of water is suitable for large tankers in case of fire. Midland Brick have been in communication with the Local Bush Fire Brigade who are aware of the quarry location, access gates and water storage.

The quarry has mobile phone coverage for Emergency Procedures. The Midland Brick staff/team are briefed on what they should do in case of Fire Emergency.

2.15 Rehabilitation

The operation will eventually be rehabilitated by the landowner with the use of clean fill material and aggregate products, as currently approved for the existing excavation area. It is the intention of Midland Brick and landowner to progressively rehabilitate the site as the resource is being removed.

As each area is decommissioned and made safe and stable, it will be filled with appropriately classified inert material by the landowner. Topsoil will be placed as the top layer of the rehabilitated area which will allow pasture to be established is feasible.

It should also be noted that the closure of the quarry will be reviewed by the DLGIRS in accordance with the Mines Safety and Inspection Act 1994. Further details relating to rehabilitation is provided in the Rehabilitation Management Plan.

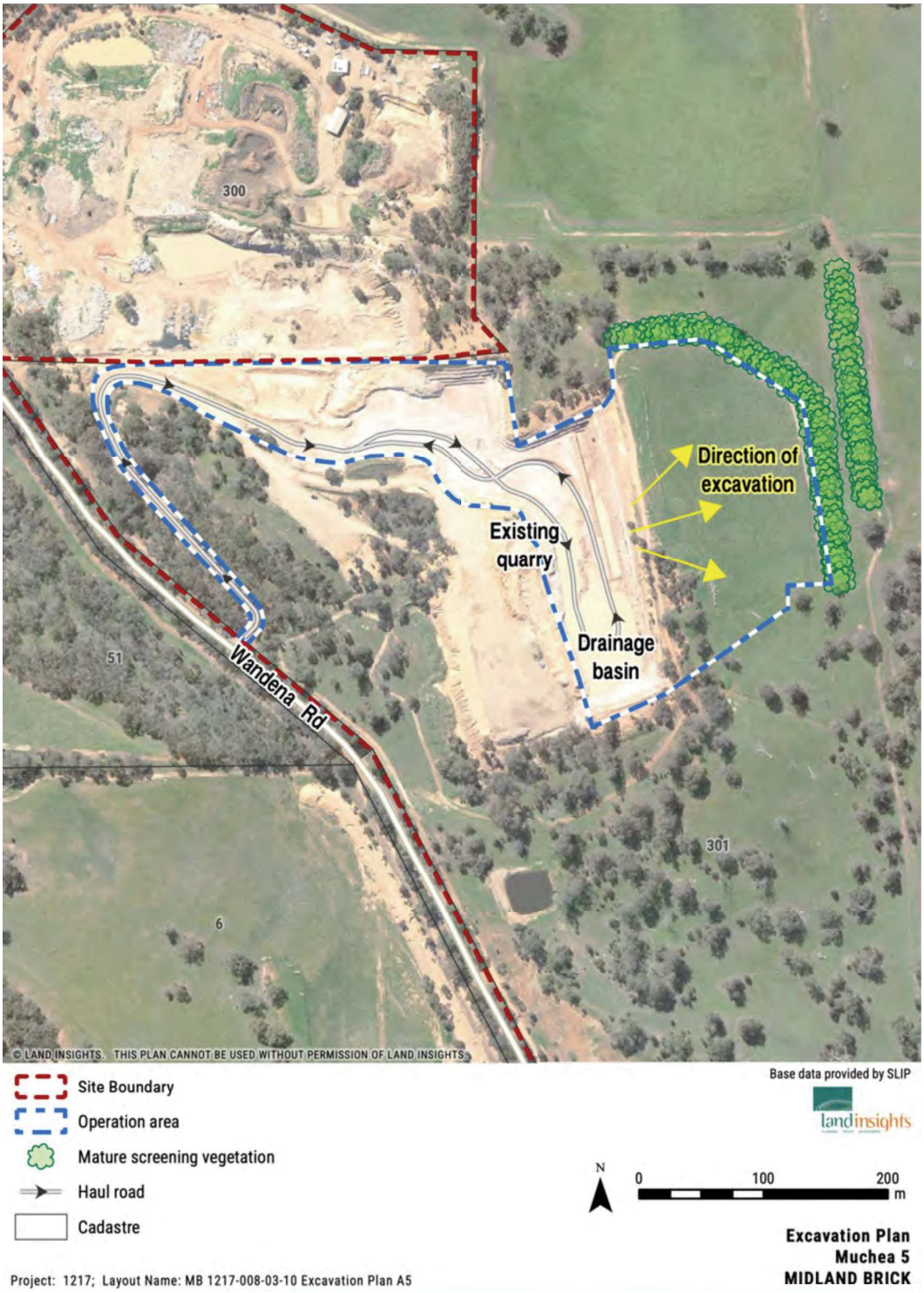


Figure 2.1 – Excavation Plan

3 Planning framework

3.1 State Planning Policy 1 – State Planning Framework

The *State Planning Framework* was prepared by the WAPC in 2017. It sets out the key principles relating to environment, community, economy, infrastructure, regional development and governance to guide the way in which future planning decisions are made. More specifically, the Framework identifies relevant policies and strategies used by the Commission in making decisions.

State Planning Policy 2.4 – Planning for Basic Raw Materials is recognised under the Framework. This is discussed further below.

3.2 State Planning Policy 2 – Environment and Natural Resources Policy

State Planning Policy 2 was prepared by the WAPC in 2003. It aims to integrate environment and natural resource management with broader land use planning and to protect, conserve and enhance the natural environment.

Basic Raw Materials is included within Policy Measure 5.7 that states "mineral resources, petroleum resources and basic raw materials are important natural resource assets and are a vital part of the economy". The Policy states that "a ready supply of basic raw materials close to developing areas is required in order to keep down the cost of land development and the price of housing."

The Policy sets out a list of principles that should be considered by decision-makers including the following relating to basic raw materials. The principles from the Policy are below:

- "the identification and protection of important and economic mineral resources to enable mineral exploration and mining in accordance with acceptable environmental standards;
- the identification and protection of important basic raw material resources and provide for their extraction and use;
- Support sequencing of uses where appropriate to maximise options and resultant benefits to community and the environment; and
- Support, where possible, improved efficiencies in the production and consumption of mineral and basic raw material resources to ensure their availability for future environmental and human uses."

SPP 2 supports the identification, protection and extraction of basic raw materials. The extraction of basic raw materials is the basis of this application.

3.3 State Planning Policy 2.4 – Basic Raw Materials

State Planning Policy 2.4 – Planning for Basic Raw Materials was gazetted in July 2021. It "enables the responsible extraction of BRM, while ensuring the protection of people and the environment". The Policy provides guidance to operators and decision makers regarding applications for BRM extraction, as well as other types of planning applications that can potentially impact on extraction sites or significant geological supplies. The associated Planning for Basic Raw Materials Guidelines (WAPC, 2021) provide further information on the specific requirements that need to be met for extractive industry (including operational and environmental protection requirements).

The site is identified under SPP2.4 as a Significant Geological Supply (refer Figure 3.1 below).

This application for extractive industry is consistent with the principles and objectives of the Policy as is demonstrated in Table 3.1 below.

Table 3.1 - Objectives of Basic Raw Materials SPP 2.4

Policy Objectives	Comment
Ensure BRM and its regional importance is considered at the earliest stages of the planning process.	The Shire of Chittering Local Planning Strategy recognises the economic importance of BRM extraction and mining opportunities and identifies significant geological supplies.
Protect BRM in Significant Geological Supply areas and ES by avoiding encroachment from incompatible land uses.	There is no intensification of land uses proposed in the Shire of Chittering Scheme or Strategy. The site is zoned "Rural" by the Scheme with the site recognised by SPP2.4 as being a Significant Geological Supply.
Ensure BRM resources are used efficiently in land use planning and development.	This application is consistent with this objective by ensuring that basic raw materials are utilised.
Identify BRM extraction opportunities through sequential land use without compromising the final intended land use.	The final landform will be recontoured and filled by the landowner with inert materials (subject to a separate approval)
Ensure the extraction of BRM avoids, minimises or mitigates any adverse impacts on the community, water resources and biodiversity values.	This application complies with this objective by providing a number of detailed management plans.

The *SPP 2.4 Planning for Basic Raw Materials Guidelines* (WAPC, 2021) provide support for decision-making authorities, proponents and referral agencies to implement SPP 2.4. Section 4 of the Guidelines provides advice on the assessment of proposals for extractive industries.

The Guidelines suggest the type and content of information to be submitted with an application for extractive industry including operational information, separation distances, environmental management, surface and groundwater, noise, dust, landscaping, access and rehabilitation. The information recommended by the Guidelines is included in this application.

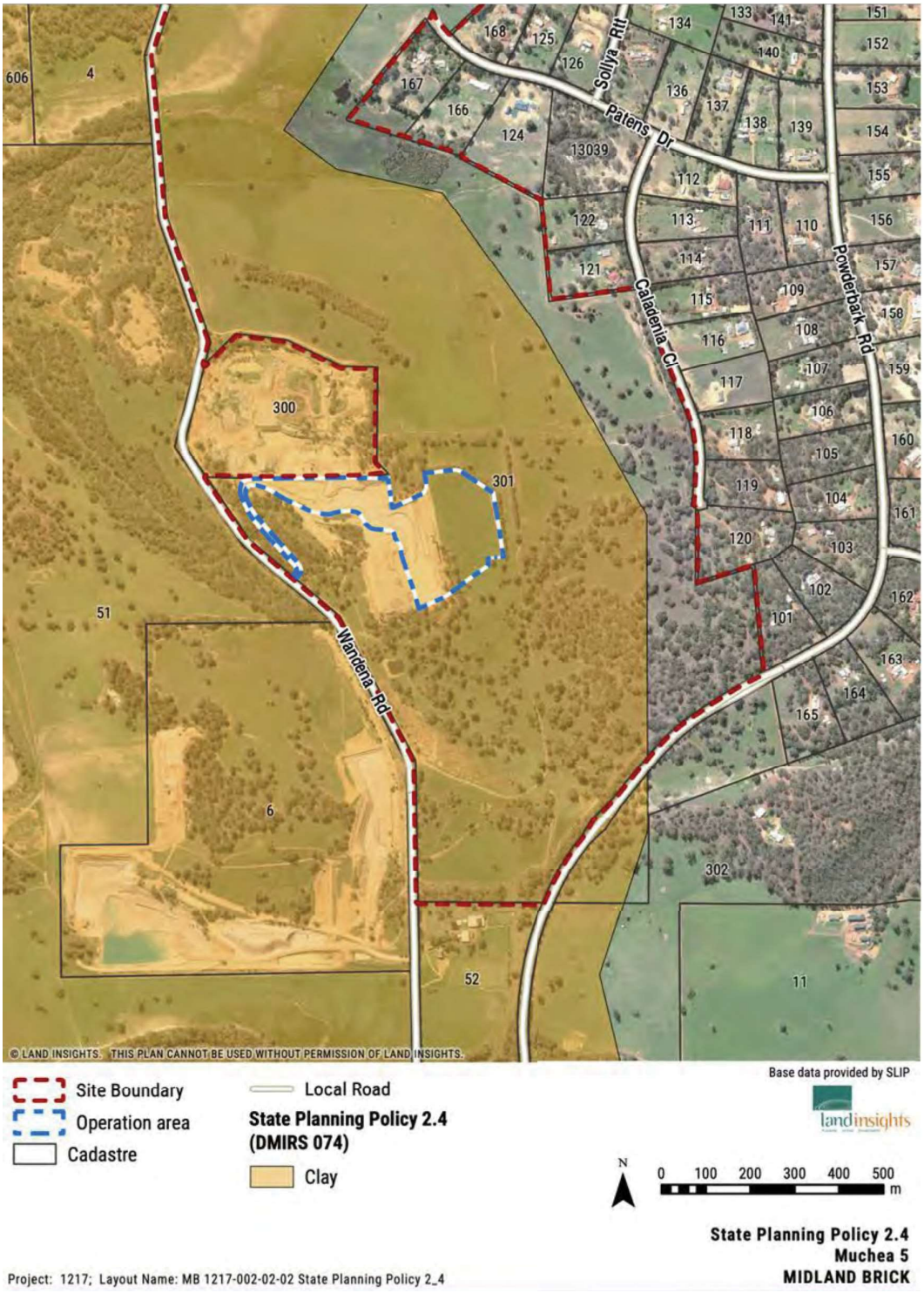


Figure 3.1 - Significant Geological Supply Extent

3.4 State Planning Policy 2.9 – Water Resources

The objectives of the Policy are to:

- protect, conserve and enhance water resources that are identified as having significant economic, social, cultural and/or environmental values;
- assist in ensuring the availability of suitable water resources to maintain essential requirements for human and all other biological life with attention to maintaining or improving the quality and quantity of water resources; and
- promote and assist in the management and sustainable use of water resources.

The Policy provides a range of policy measures to guide and assist decision-makers in the consideration of water resources. Policy Measures are provided for surface water, groundwater, wetlands, waterways, estuaries and total water cycle management.

In general, SPP 2.9 provides for a response to the potential impact of development on water resources that is proportionate to the significance of the water resource concerned with a particular focus on those resources considered 'significant'. For example, Policy Measure (i) is to "protect significant environmental, recreational and cultural values of water resources". In addition, the language throughout the Policy is aspirational with a focus on aiming to prevent or ameliorate impact where appropriate.

The Policy makes specific reference to decision-making and advises that "where there is demonstratable adverse and unacceptable impact on the quality and quantity of significant water resources, planning decisions-makers should ensure that planning proposals and applications either do not proceed or are modified so that significant water resources are protected, conserved and enhanced". In accordance with the general goals and aims of this Policy, it is important that significant water resources and potential threats are identified.

The proposed extension of the current clay quarry will not have any effects on any surrounding water bodies and manages water onsite in the same manner that it currently does so as to not affect its surrounds.

3.5 Draft State Planning Policy 2.9 – Planning for Water

The "draft State Planning Policy 2.9 – Planning for Water" was prepared by the WAPC in 2021. The intent of the draft Policy is "ensure that planning and development considers water resource management and includes appropriate water management measures to achieve optimal water resource outcomes". It provides guidance for the consideration of water resources for planning applications and decision-makers. The Policy Measures include consideration of environmental values, social and cultural values, riverine flooding, infrastructure and supply.

The associated SPP 2.9 Guidelines provide further detail as to how the Policy Measures can be considered and the information to be provided in an application. It should be noted that no "important environments" (including "Sensitive Water Resource Areas") are mapped on the site under the draft Policy.

There are no sensitive water resource areas or public drinking water supply areas identified in the vicinity of the extraction site.

3.6 State Planning Policy 3.7 – Planning in Bushfire Prone Areas

"State Planning Policy 3.7 – Planning in Bushfire Prone Areas" and associated Guidelines were released by the WAPC in November 2024. These documents provide the foundation for land use planning to address bushfire risk management in Western Australia and to inform and guide decision-makers, referral agencies and landowners to help achieve acceptable bushfire protection outcomes. They apply to development in designated bushfire prone areas.

The latest DPLH mapping (2024) identifies "Bushfire Prone Areas" over the entire extraction site and surrounds (refer to Figure 3.2 below). In most cases, the Guidelines apply including the need for a Bushfire Management Plan. However, in this case, it is suggested that this can be exempted as the proposal falls outside the applicability criteria outlined in section 1.2 of the Guidelines. Namely, the proposal will **not**:

- result in the intensification of development (or land use);
- result in an increase in visitors, residents or employees; or
- adversely impact or increase the bushfire risk to the subject or surrounding sites.

The areas identified as bush fire prone are shown in Figure 3.2 below.

In this instance, the operation will be located on cleared land and will not increase the level of bushfire risk. Further, there will be no habitable buildings located at the site and operation within the extended portion will remain the same as those that have existed on site for a significant period of time without posing a bushfire threat. Therefore, the requirement for a bushfire management plan could be waived by the Shire of Chittering.

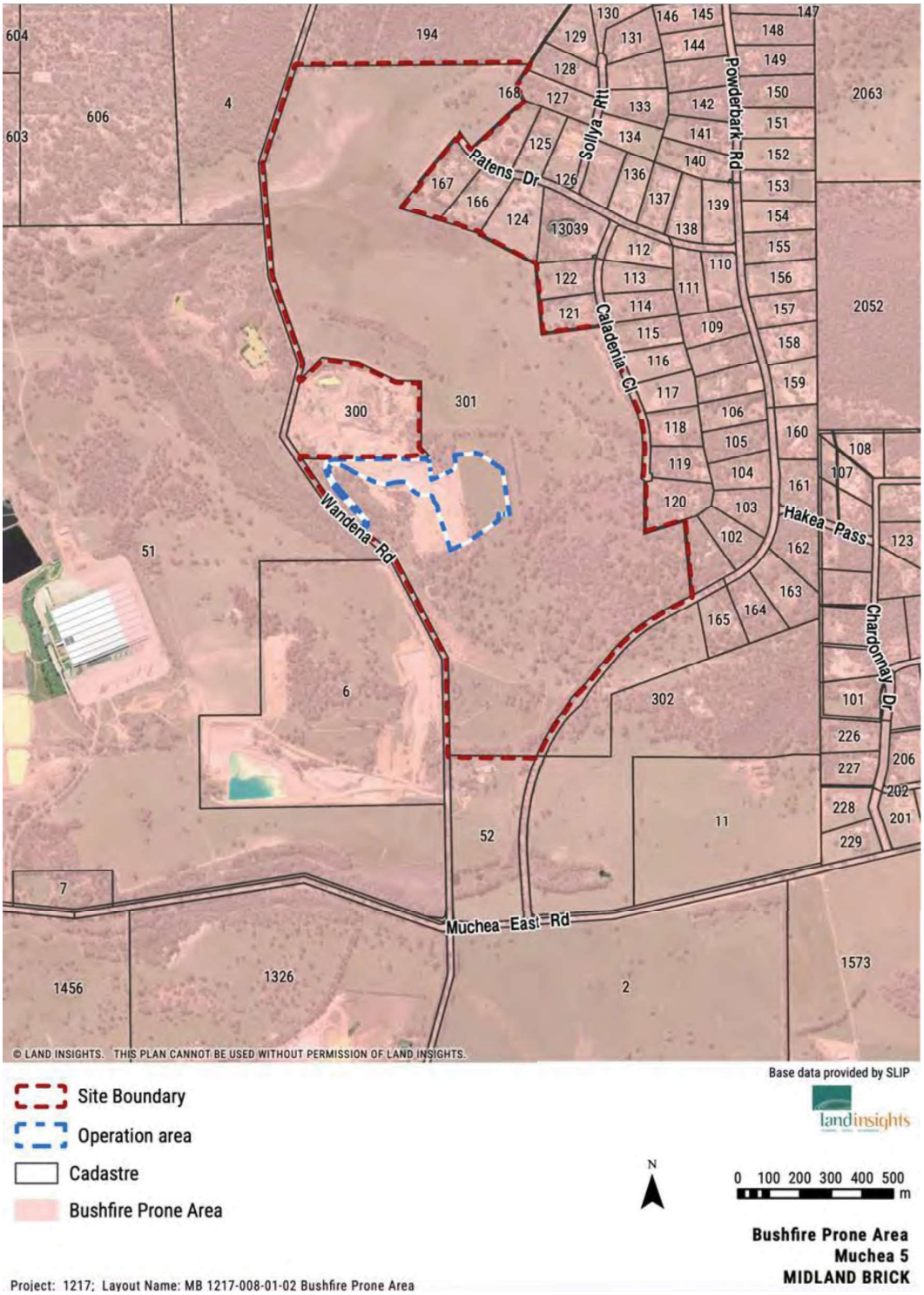


Figure 3.2 - Bushfire Prone Areas

3.7 Shire of Chittering Local Planning Strategy

The Shire of Chittering's Local Planning Strategy was endorsed by the Western Australian Planning Commission in 2019. The purpose of the Strategy is to set out the long-term planning directions for the Shire, apply any relevant state planning policy and provide the rationale for zoning and reservations in the local planning scheme.

The Strategy states that:

At present the Shire's Local Planning Scheme provides for the extraction of BRM on rural and industrial land.

The site is zoned Rural by the Local Planning Scheme and therefore the extraction of clay is suitable at the site. Further, this application seeks an extension to an existing clay quarry.

The Strategy further states that:

BRM requires protection from forms of development which would potentially sterilise their extraction. Sequential land use planning, whereby extraction and appropriate rehabilitation can take place on a programmed basis in advance of longer-term use and development is supported. Figure 9 identifies "Significant Geological Supplies', which are State Significant resources. The Shire maintains the position that this land is not to be developed for other purposes until the resource is extracted, is demonstrated to be of insignificant quality, or unless development is compatible with the future extraction of the resource.

3.8 Shire of Chittering Local Planning Scheme No.6 (LPS6)

Shire of Chittering Local Planning Scheme No.6 (LPS6) was gazetted in November 2004 and remains in operation. Lot 301 and its surrounds are zoned 'Agricultural Resource' by LPS6 with a buffer imposed for extractive industries. There are three Special Control Areas that recognise existing landfill use, the importance of the clay Significant Geological Supply, and the adjoining Muchea Employment node.

The land is zoned Agricultural Resource, which recognises the importance of protecting productive rural land while allowing basic raw material extraction, such as clay, where it is environmentally and socially acceptable. The land is also affected by Special Control Areas that acknowledge the strategic importance of the clay resource, protect the operation of existing landfill uses through buffers, and support coordinated planning of the adjoining Muchea Employment node while restricting sensitive land uses. Overall, these provisions are supportive of the proposed clay quarry extension, subject to approval.

Figure 3.3 outlines the zones and reservations over the site and surrounds, as well as the special control areas in place.

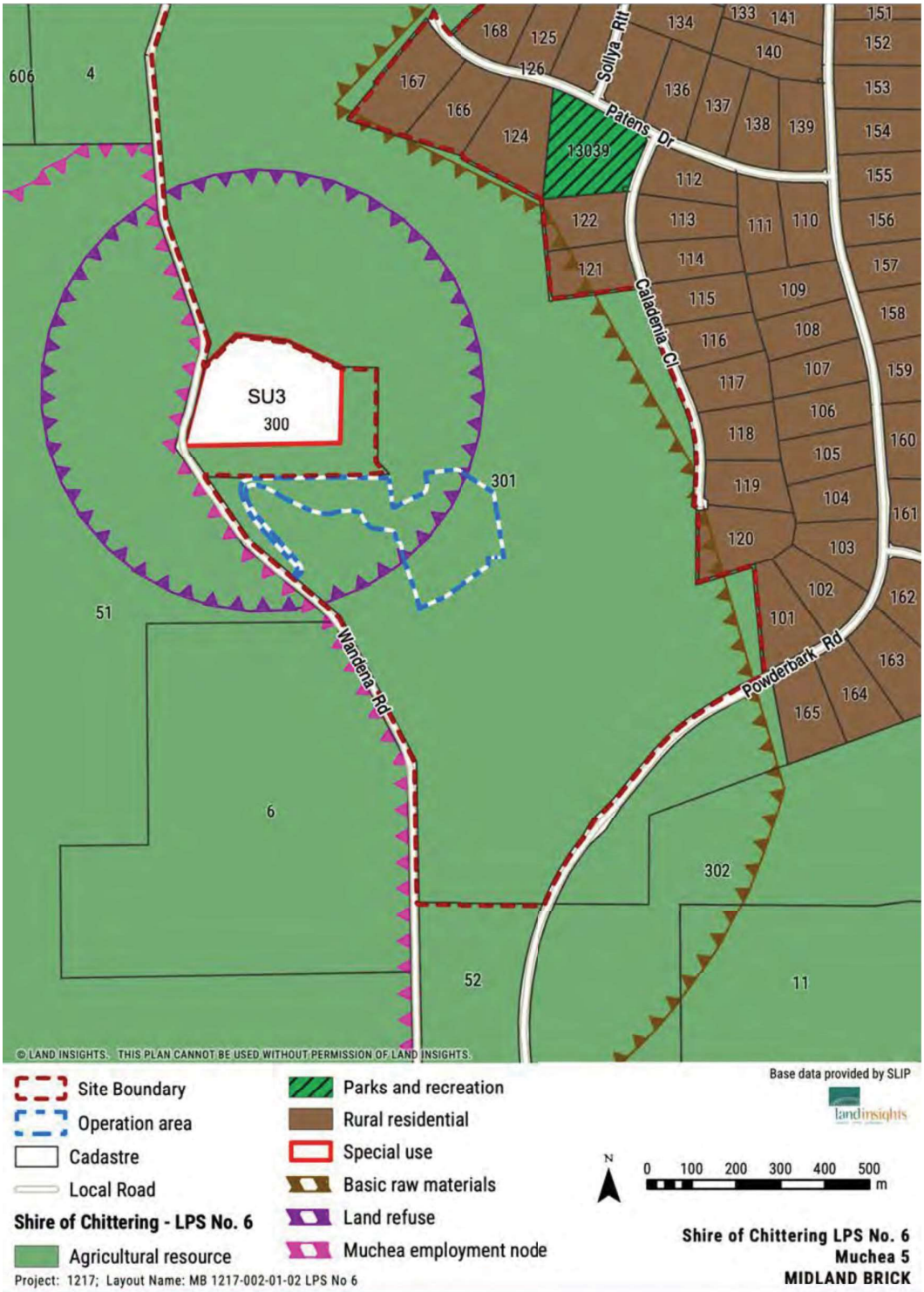


Figure 3.3 – Local Planning Scheme Zones and Reservations

The objectives of the Agricultural Resource Zone are:

a) preserve productive land suitable for grazing, cropping and intensive horticulture and other compatible productive rural uses in a sustainable manner;
b) protect the landform and landscape values of the district against despoliation and land degradation;
c) encourage intensive agriculture and associated tourist facilities, where appropriate;
d) allow for the extraction of basic raw materials where it is environmentally and socially acceptable.

This proposal meets objective d) as it will allow for the extraction of a basic raw material where it is environmentally and socially acceptable.

The Zoning Table in LPS6 identifies "Industry – Extractive" as an 'A' use within the Agricultural Resource zone which means that the use is not permitted unless the local government has used its discretion by granting development approval after giving special notice in accordance with clause 64 of the deemed provisions. The Shire will be able to use its discretion as this application is seeking an extension of an already operating facility, with the area being identified for extractive industry under LPS6, the Strategy and SPP2.4.

3.9 Local Planning Policies

There are no current local planning policies that relate to the operation of extractive industry in the Shire of Chittering.

3.10 Local Laws

The Shire has an Extractive Industry Local Law gazetted in 2014 that affects the proposal. The purpose and effect of the Local Law is to:

(1) Establish requirements and conditions with which extractive industries, within the district, must comply.

(2) Provide for the regulation, control and management of extractive industries.

This report outlines the various operational arrangements for the clay quarry. These address the relevant requirements of the Local Law as appropriate.

3.11 Water Quality Protection Note No. 15 – Basic Raw Materials Extraction

Water Quality Protection Note (WQPN) No. 15 was prepared by DWER in 2019. It provides recommendations to operators on how to limit the impacts of their operations to the environment and water resources. Recommendations relate to location, construction, operation, management, closure and rehabilitation. Requirements of WQPN15 have been considered in the risk assessment (Chapter 5) and the Water Management section (Chapter 11).

4 Site description

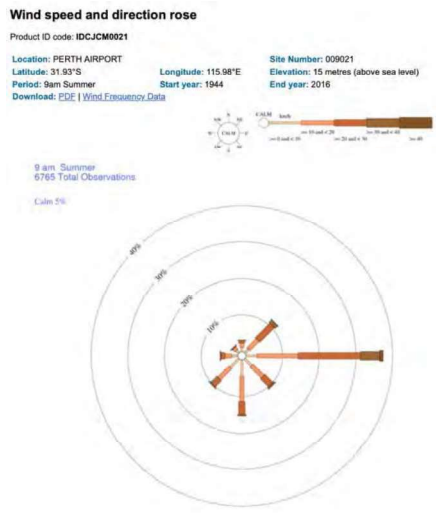
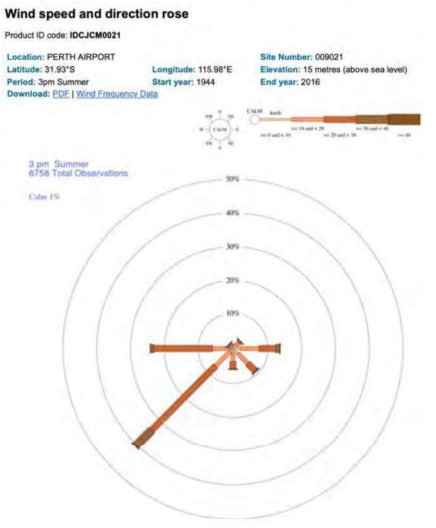
4.1 Climatic conditions

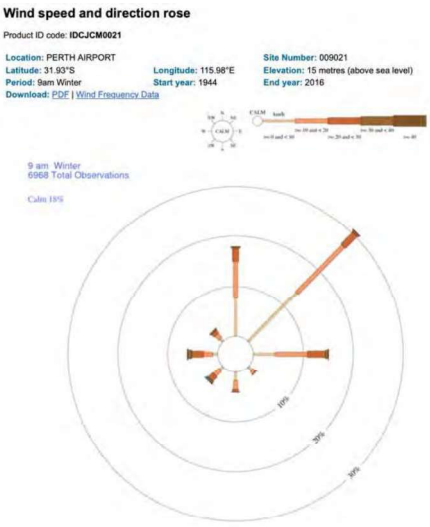
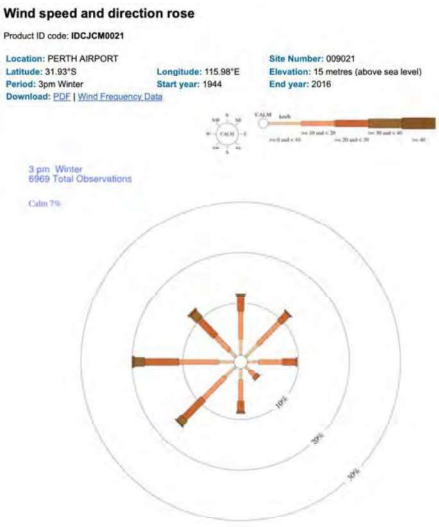
The rainfall and temperature data for the region has been obtained from the Bureau of Meteorology "Climate Data Online" services. The average annual rainfall from the closest station (Muchea) is 642.7mm. A majority of rainfall is from May to August.

The warmest month on average at Pearce RAAF is January with an average maximum of 33.6 °C. August is the coldest month on average with a mean minimum temperature of 8.3 °C.

The prevailing winds in the mornings are from the east in summer and northeast in winter (see Table 4.1). In the afternoons, the winds are predominantly from the southwest in summer and west/southwest in winter. (Accessed from Bureau of Meteorology 2025 for Perth Airport station).

Table 4.1 – Wind Roses for 9am and 3pm, Summer and Winter – Perth Airport

Summer 9am	Summer 3pm
	

Winter 9am	Winter 3pm
	

4.2 Topography and landform

The topography of the proposed new extraction area is relatively flat, with a slight upwards gradient from east (148m AHD) to west (154m AHD). The extraction area is located over this slight slope and will be managed as extraction takes place from east to west.

Figure 4.1 shows the topography of the property and surrounds.



Figure 4.1 – Contours and Topography

4.3 Geology and Soils

Geology

The surrounding geology is predominantly identified as Coolyena Group: chalk, greensand, glauconitic sandstone, siltstone, marl: characteristically glauconitic (State interpreted bedrock geology, DMIRS-014, SLIP 2024) (see Figure 4.2).

The Coolyena Group comprises the Osborne Formation, Molecap Greensand, Gingin Chalk and Poison Hill Greensand and this site is part of the Osborne Formation. The lithology of the Osborne Formation is described as "interbedded sandstone (in part calcareous), siltstone, shale and claystone". The formation is exposed at numerous locations along the Scarp near Bullsbrook, along Ellen Brook (Upper Swan) and along the Moore River. The sediments are horizontally bedded, shallow marine shales that are white when oxidised. Below the excavation the sediments can be dark grey, organic and slightly pyritic at depth below the water table.

The location of the "Significant Geological Supplies" is also recognised in the Shire's Local Planning Scheme No. 6 which shows the site is located within the "Basic Raw Materials Special Control Area (SCA)". The purpose of the SCA is "to secure known basic raw materials resources and protect future resources".

Soils

Soils have been mapped by the Department of Primary Industries and Regional Development (DPIRD). The soil landscape on the area proposed for the extension to the existing operations is identified as Reagan 10 subsystem as is the majority of its surrounds.

Figure 4.3 shows the soil landscape units for the property.

Acid Sulphate Soils

The Department of Water and Environmental Regulation (DWER) Acid Sulphate Soils Risk Mapping indicates that the site is located within an area where Acid Sulphate Soils may occur at depth. This regional mapping reflects the presence of clay-rich sediments within the broader geological sequence rather than confirmed Acid Sulphate Soils within the proposed expansion area.

Midland Brick has previously commissioned an Acid Sulphate Soil Investigation and Management Plan (ASSIMP 2016) for its clay extraction operations within the local area. The investigation identified that Actual and Potential Acid Sulphate Soils may occur at depth, predominantly below the groundwater table, and that excavation activities do not extend into these materials.

The ASSIMP concluded that the risk of adverse impacts to groundwater was low due to the depth to groundwater and the low permeability of underlying clay materials.

The proposed expansion area is consistent with previously approved extraction areas in terms of geology, depth of excavation and operational methodology. Excavation will remain well above the groundwater table and is not expected to disturb sulfidic materials.

Based on the continuation of existing management measures and monitoring programs, the proposed expansion is not expected to result in the mobilisation of acidity or adverse impacts to surface water or groundwater.

4.4 Vegetation

Vegetation Complex

The vegetation complex over the proposed expansion area is shown as Mogumber Complex South as shown in Figure 4.4.

Remaining native vegetation

The site has been historically cleared for rural and extractive purposes, with the exception of a number of mature trees that have been retained. Established tree lines along the eastern boundary of the proposed expansion area will be maintained to preserve existing landscape screening. A small pocket of parkland-cleared trees and vegetation (approximately 0.3 ha) within the extraction area is proposed to be removed, subject to the granting of a Native Vegetation Clearing Permit by the Department of Water and Environmental Regulation (DWER).

Pre-European Vegetation

The vegetation complex mapped by the Department of Biodiversity, Conservation and Attractions (DBCA) is "Reagan Complex" across the southern part of the site and "Mogumber Complex – South" across the northern part of the site. Described as:

- Mogumber South– Open Woodland of *Corymbia calophylla* with some mixtures of *Eucalyptus marginata* subsp. *thalassica* and a second storey of *Eucalyptus todtiana-Banksia attenuata-Banksia menziesii-Banksia ilicifolia* on sandy-gravels on the uplands in arid and per-arid zones.

According to the data in the Shire of Chittering Local Planning Strategy (Shire of Chittering, 2010), the percentage of Mogumber Complex South" remaining regionally is 40%. Neither of these vegetation complexes are identified as being "locally significant" in the Biodiversity Strategy.

Threatened species

There are no records of threatened or priority flora, fauna or ecological communities on the site.

The closest TEC adjoins the south-west of the site.

Environmentally sensitive areas

There are no Environmentally Sensitive Areas mapped by DWER on the site.

4.5 Hydrology

The site is located within the Ellen Brook surface water sub-area, as shown in Figure 4.6. No mapped watercourses or drainage lines occur within the proposed expansion area.

A minor drainage line is mapped approximately 250–300 metres from the pit area. This feature functions as an ephemeral drainage line, conveying surface water during seasonal rainfall events, and forms part of the local tributary network of the Ellen Brook catchment. The drainage line flows generally west to north-west before discharging to downstream tributaries that ultimately connect with Ellen Brook, which is located several kilometres to the west of the operation. Ellen Brook flows in a southerly direction and discharges into the Swan River.

A small Multiple Use category wetland (Figure 4.8), as mapped under the Geomorphic Wetlands of the Swan Coastal Plain dataset, is located to the north of the site. No direct surface water connection exists between the proposed expansion area and this wetland, and no excavation is proposed within or adjacent to mapped wetland areas.

The operation is not located within a mapped flood fringe, floodway or Floodplain Development Control Area, and no Public Drinking Water Source Areas are present on or near the site.

Groundwater beneath the site occurs within the Perth groundwater system and includes the Perth–Yarragadee North aquifer (Chandala Confined groundwater subarea), the Perth–Leederville–Parmelia aquifer (Cowalla Confined groundwater subarea), and the Perth Surficial aquifer (Eclipse Hill groundwater subarea).

The Perth Groundwater Map (DWER, 2022) indicates minimum groundwater levels in the area are between approximately 55 and 60 metres AHD. Maximum groundwater contours are not available for the site.

However, regional groundwater flow is generally in a south-westerly direction, consistent with regional hydrogeological mapping (Water and Rivers Commission, 2002).

Given the depth to groundwater and the separation distances to mapped surface water features, excavation activities are not expected to intersect groundwater or adversely affect surface water flows within the Ellen Brook catchment.

4.6 Surrounding land uses

There are a variety of land uses surrounding the site including farmland and other extractive industries along with industrial sites and the Muchea livestock centre. There is a band of rural residential development to the east of the expansion area. However, the houses on these lots fall outside of the 500m separation distance for the development.

4.7 Heritage

The site falls within the Ellen Brook Upper Swan cultural heritage area (ID 3525) which is described as a "creation/dreaming narrative" site. It is mapped across the broader area as shown in Figure 4.8.

No heritage sites listed by the Heritage Council of WA, or the Shire of Chittering are located on the site.

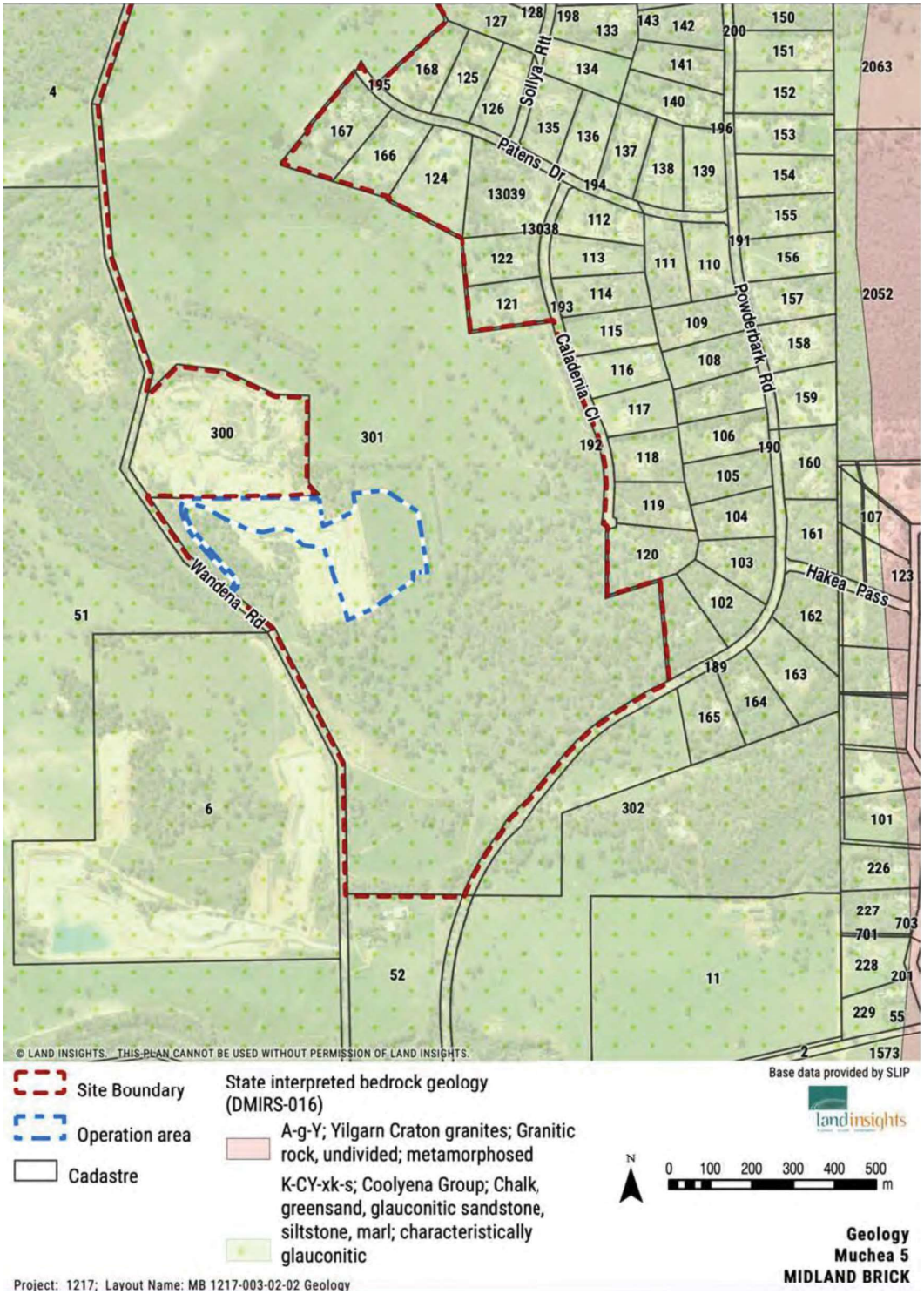


Figure 4.2 - Geology

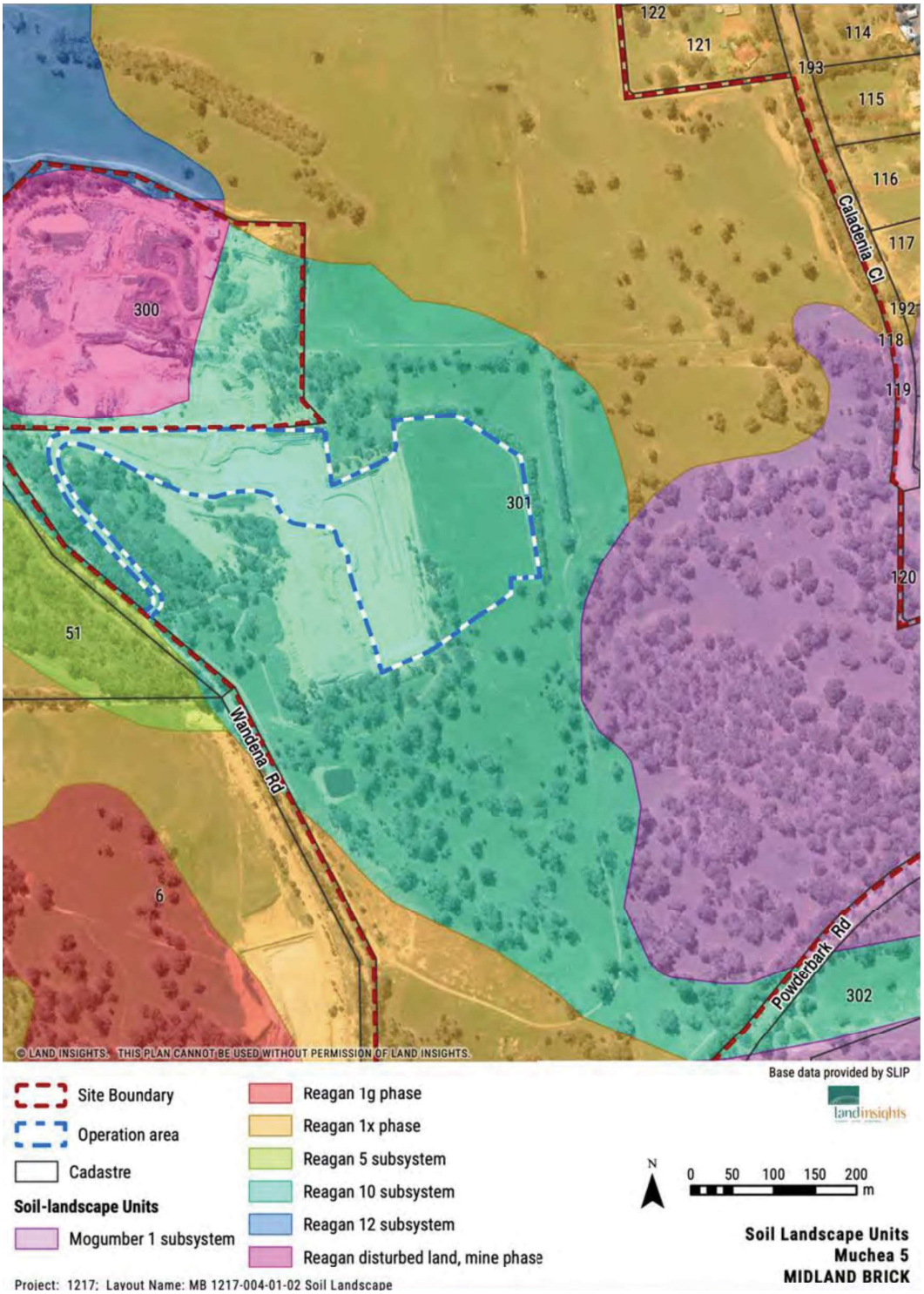


Figure 4.3 – Soil Landscape Units

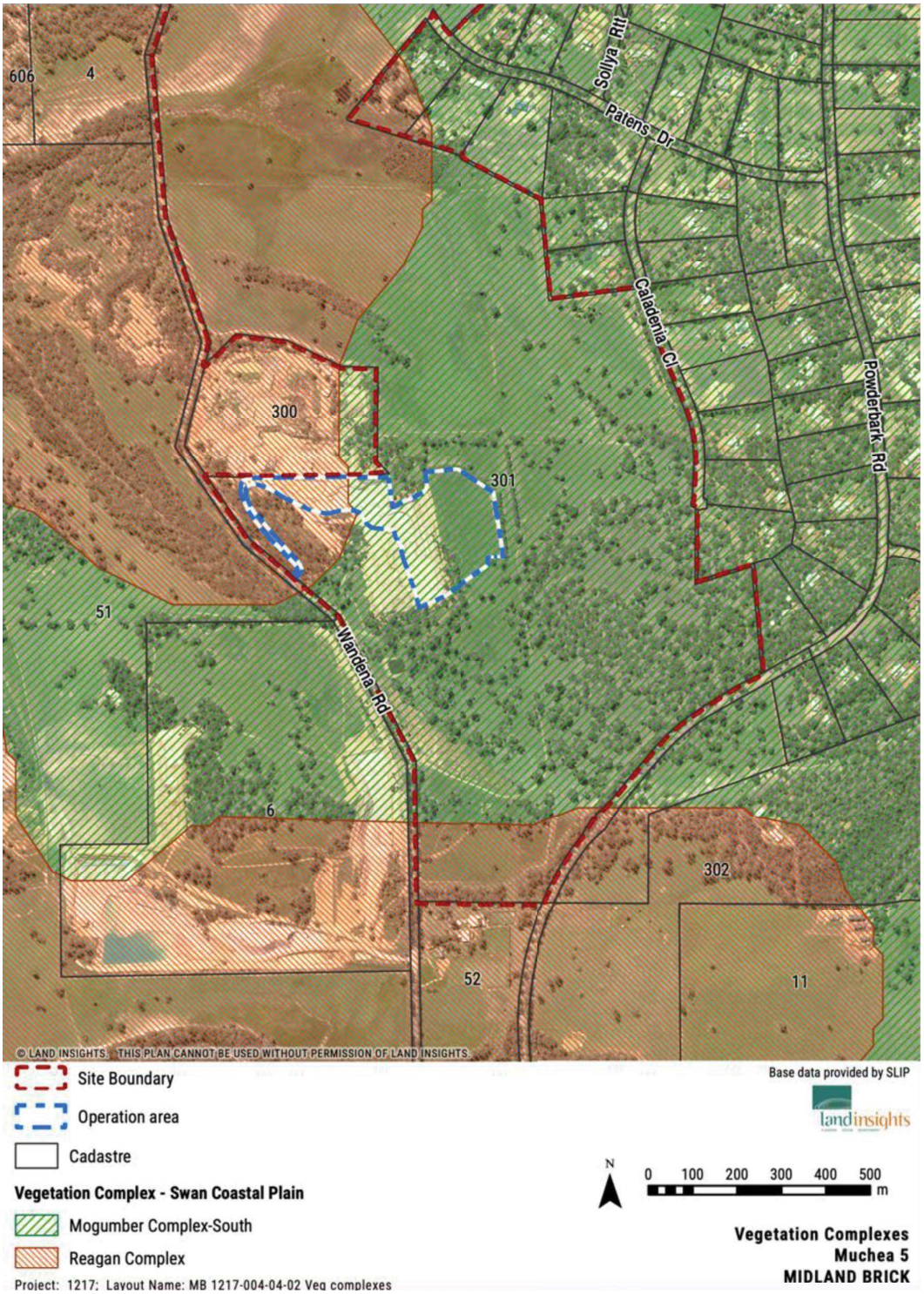


Figure 4.4 – Vegetation Complexes

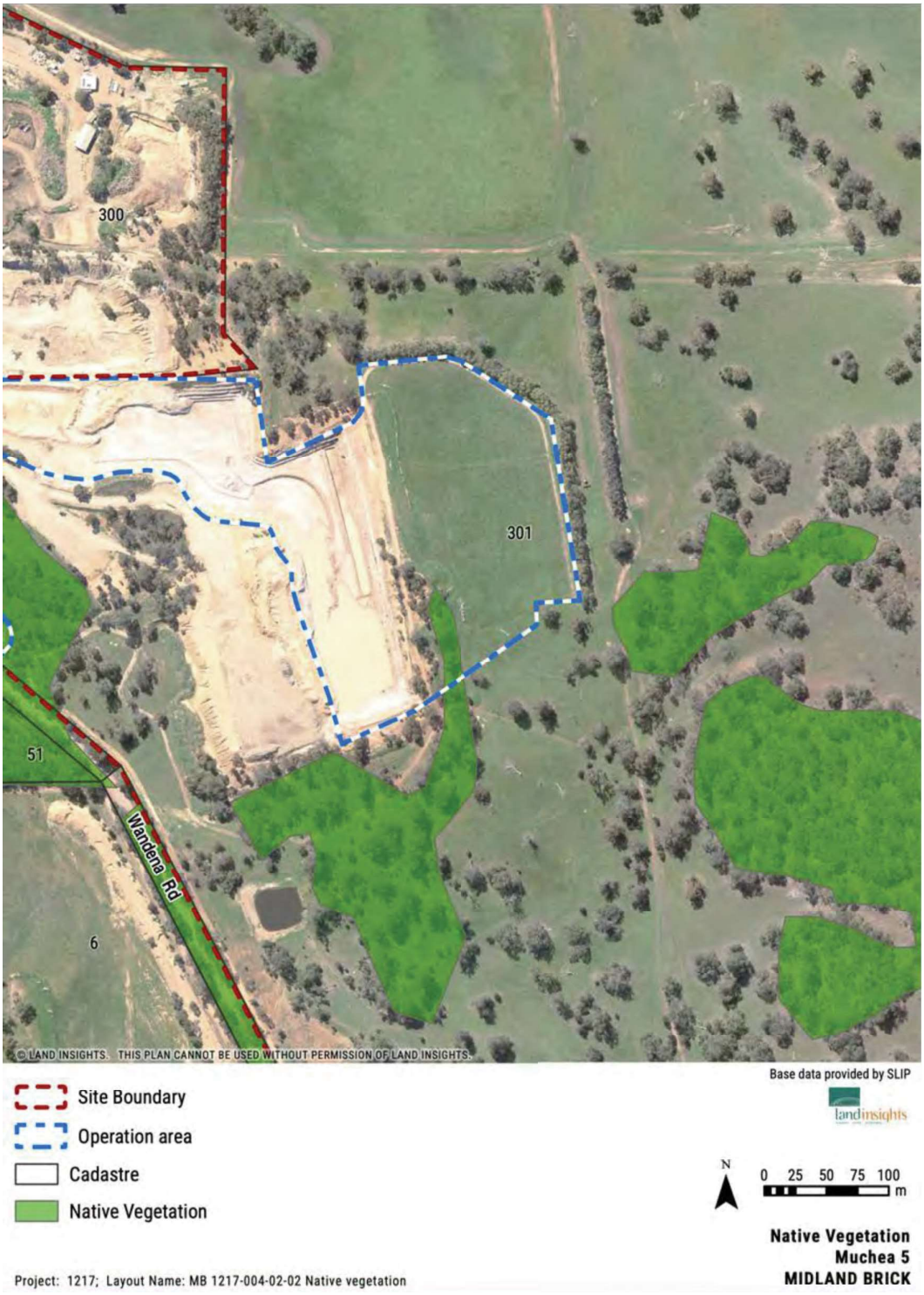


Figure 4.5 – Native Vegetation

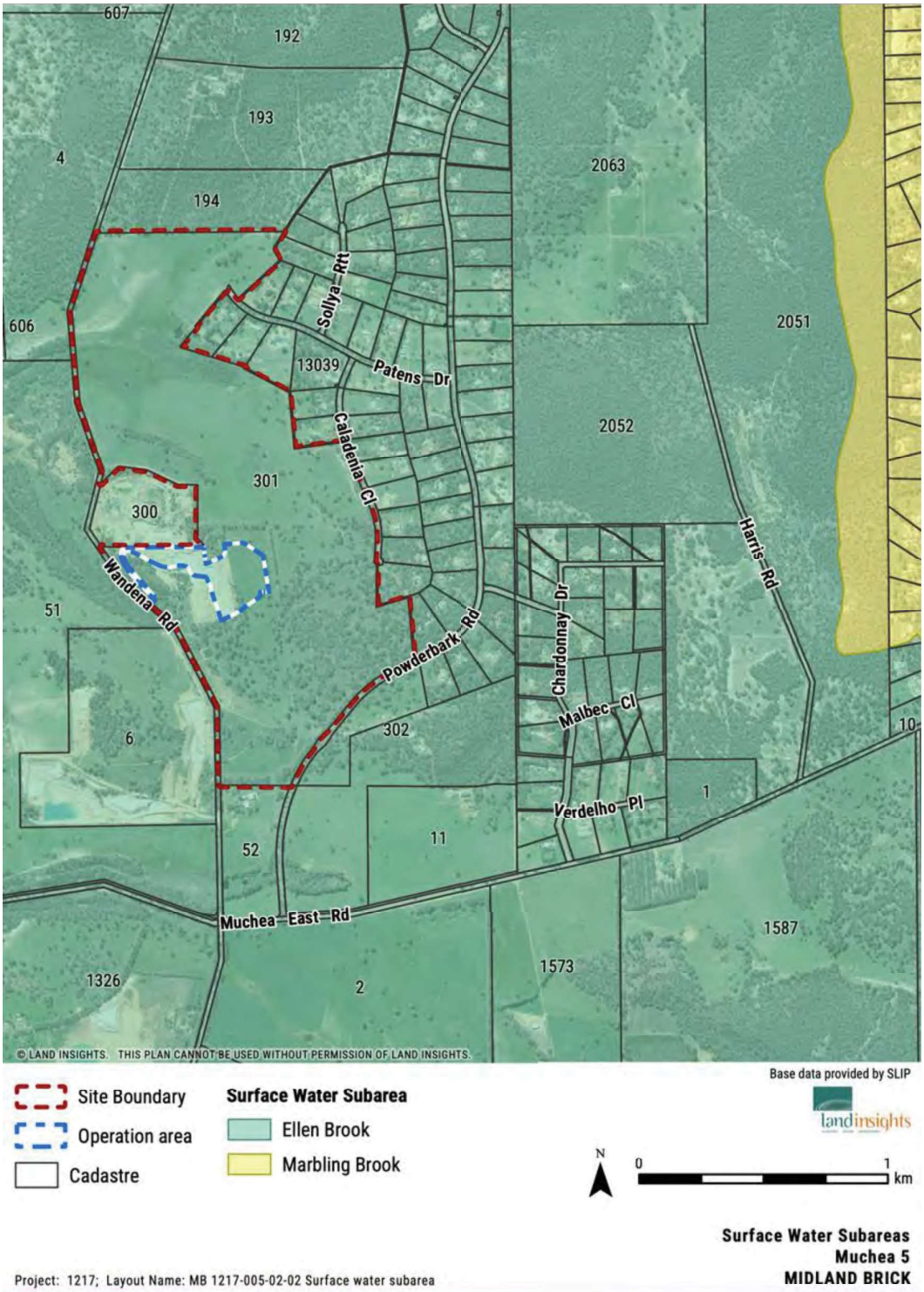


Figure 4.6 – Surface Water Subareas

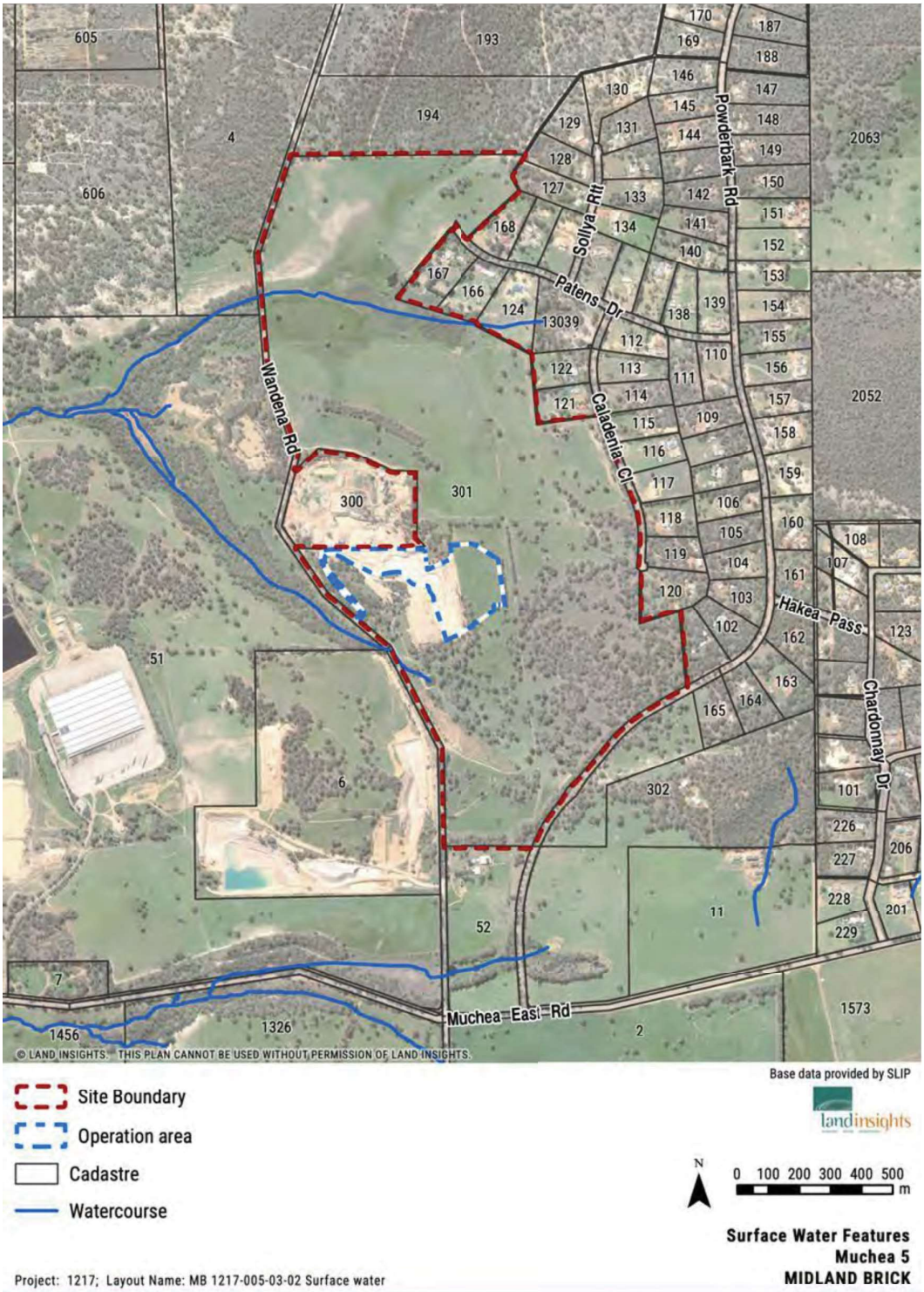


Figure 4.7 – Surface Water Subareas

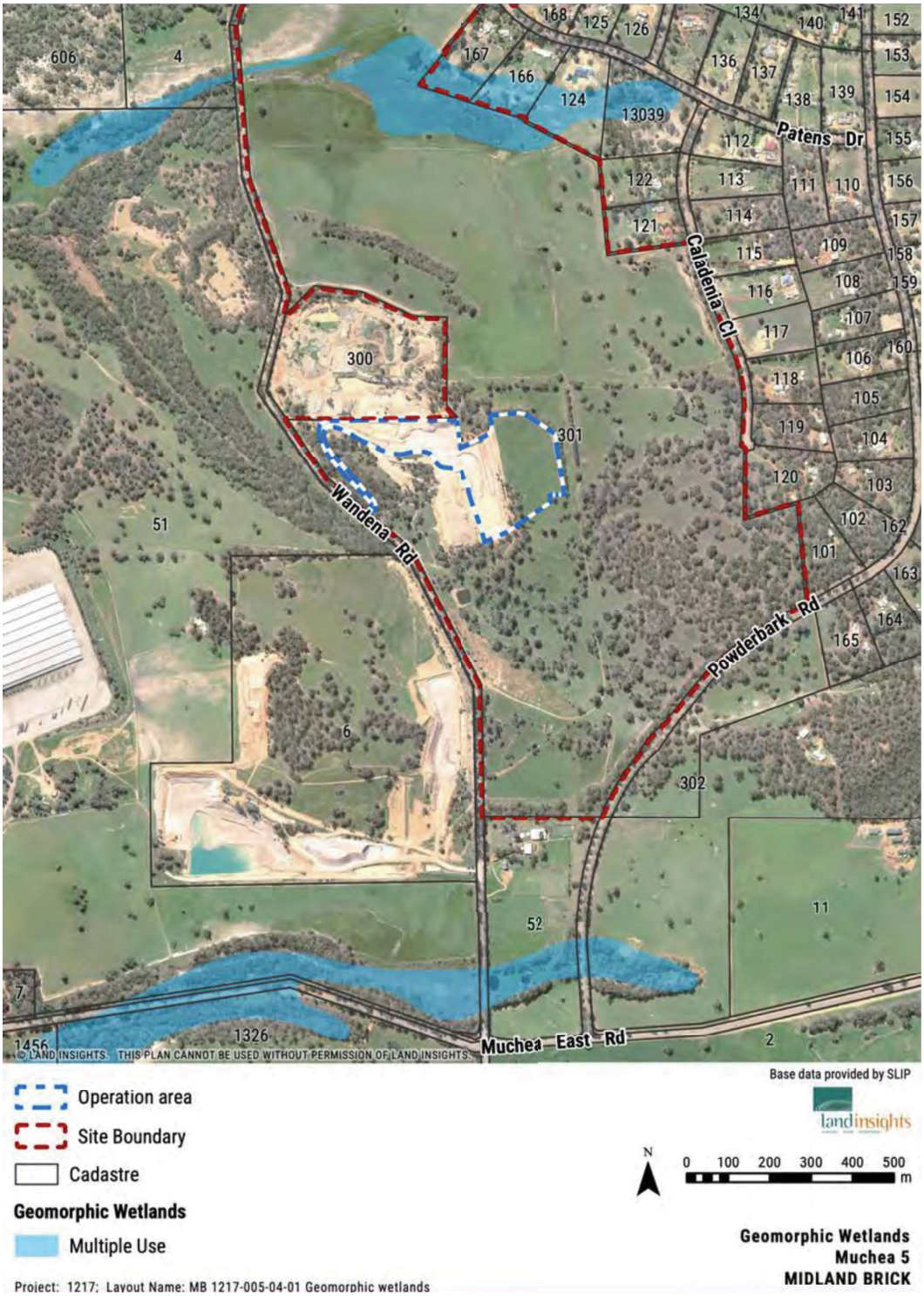


Figure 4.8 - Wetlands

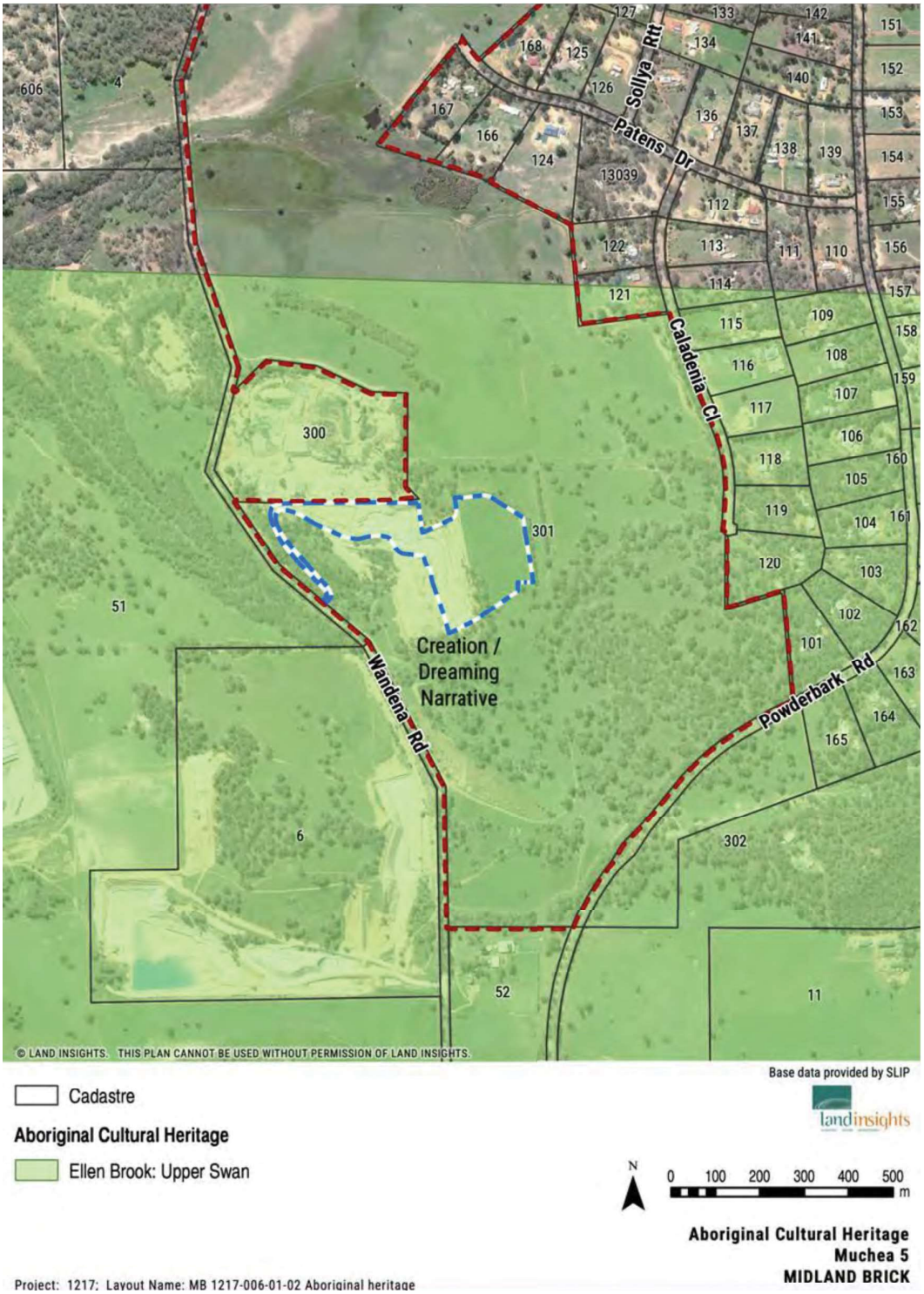


Figure 4.8 – Aboriginal Cultural Heritage

4.8 Separation distances

There are no identified sensitive receptors within the identified separation distance, as shown on Figure 4.9.

The EPA's *Guidance Statement No. 3 – Separation Distances between Industrial and Sensitive Land Uses* provides a guideline on the separation distances and buffers for a range of industrial land uses to sensitive land uses (such as residential dwellings). It should be noted that the distances 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 "500-1000 metres, depending on size and processing", however this can be less with appropriate environmental management.

All surrounding sensitive land uses are over 500 metres from the operations.

It should also be noted that operational management, including dust and noise management and protection of visual amenity, are provided for this operation to support the continued operation of the site.

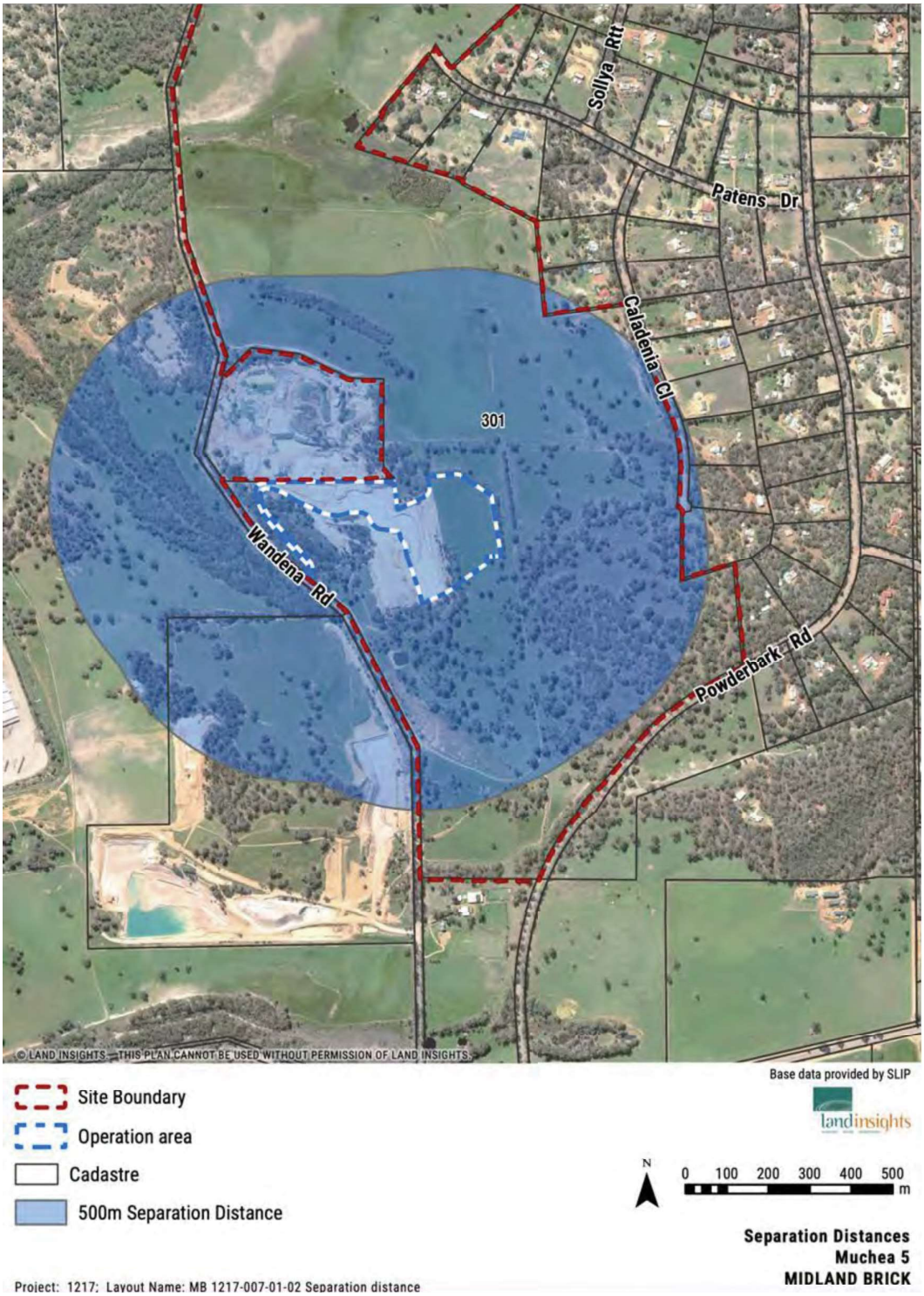


Figure 4.9 – Separation Distances

5 Risk assessment

5.1 Risk assessment methodology

The risk assessment methodology is based on the Department of Water and Environmental Regulation's Guidance Statement: Risk Assessments (2017). Environmental and amenity factors considered are based on EPA environmental factors and objectives as listed in Statement of Environmental Principles, Factors, Objectives and Aims of EIA (EPA, 2021).

Risk ratings are determined by considering both the likelihood and consequence of potential environmental and amenity impacts. The risk matrix criteria are set out in Table 5.1, with likelihood and consequence criteria defined in Table 5.2.

Table 5.1 – Risk Matrix

Likelihood	Consequence				
	Slight	*Minor*	*Moderate*	*Major*	*Severe*
Almost certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	Extreme
Unlikely	Low	Medium	Medium	Medium	High
Rare	Low	Low	Medium	Medium	High

Source: DWER, 2017

The following criteria has been used to determine the likelihood and consequence of the risk occurring.

Table 5.2 – Likelihood and consequence

Likelihood		Consequence	
Almost certain	The risk event is expected to occur in most circumstances.	Severe	On-site impacts: catastrophic (significant impact to the environment) Off-site impacts local scale: high level or above Off-site impacts wider scale: mid-level or above Mid to long term or permanent impact to an area of high conservation value or special significance^ Significant long-term damage/loss of ecosystem function and loss of individuals of species locally
Likely	The risk event will probably occur in most circumstances.	Major	On-site impacts: high level (moderate impact to the environment) Off-site impacts local scale: mid-level Off-site impacts wider scale: low level Short term impact to an area of high conservation value or special significance^ Moderate damage to ecosystem function and major loss of individuals of species locally.
Possible	The risk event could occur at some time.	Moderate	On-site impacts: mid-level (Minor adverse effect to the environment) Off-site impacts local scale: low level

Likelihood		Consequence	
			Off-site impacts wider scale: minimal Moderate loss of individuals of species locally.
Unlikely	The risk event will probably not occur in most circumstances.	Minor	Off-site impacts local scale: minimal Off-site impacts wider scale: not detectable Minor number of individuals of species may be affected locally.
Rare	The risk event may only occur in exceptional circumstances.	Slight	On-site impact: minimal (No discernible adverse impact).

Source: DWER, 2017

^ Determination of areas of high conservation value or special significance should be informed by the Guidance Statement: Environmental Siting.

*'onsite' means within the Lot boundary.

5.2 *Operational Risk Assessment*

The risk assessment for the operation is summarised in Table 5.3 below. It identifies environmental and amenity features, assesses the inherent risk if unmanaged, and determines the residual risk after avoidance, mitigation and management measures are applied.

Table 5.3 presents the risk assessment in two parts:

- Inherent risk (first part) - assumes no management, avoidance or mitigation measures are in place
- Residual risk (second part) - considers the operation managed in accordance with applicable management actions and approvals

The assessment demonstrates that all identified risks can be effectively managed. No environmental or amenity factor presents an inherent risk greater than "medium". With appropriate management measures in place, all residual risks are reduced to "low".

Where residual risks remain, these are managed through either separate statutory approvals processes (such as clearing permits) or through specific environmental management actions detailed following Table 5.3.

Table 5.3 – Risk Assessment

Potential Impact Without Management	Inherent Risk			Managed Risk Assessment	Residual Risk		
	L	C	RISK		L	C	RISK
Native vegetation may be significantly impacted by the development. The "unmanaged risk" entails no avoidance or mitigation of impact to native vegetation (i.e. it is not clearly defined, mapped and assessed).	Possible	Minor	**Med**	It is not considered that there will be a significant impact on native vegetation. The existing line of trees along the eastern side of the extraction area will be retained. The environmental significance of the 0.3ha pocket of parkland cleared trees and vegetation within the extraction site will be assessed through a clearing permit application to be submitted to DWER.	Rare	Minor	**Low**
Threatened Ecological Communities may be impacted if present on the site.	Rare	Moderate	**Med**	There are no registered TECs located on the proposed extraction site, although there are some nearby. Existing vegetation within the site is parkland cleared and not likely to be a TEC.	NA	NA	**NA**
Threatened and Priority flora species may be impacted if present on the site.	Rare	Moderate	**Med**	There are no threatened or priority flora species are likely to be located on the site.	NA	NA	**NA**
Declared Weeds/Weeds of National Significance may be introduced to the site.	Possible	Moderate	**Med**	Weed hygiene methods will be employed. Refer to the Section 'Weed Management'	Unlikely	Moderate	**Low**
Dieback may be introduced and impact on native vegetation.	Possible	Moderate	**Med**	Excavation of the site will take place within a defined area and the movement of vehicles and people restricted within this area. There is minimal vegetation on the extraction site.	Rare	Minor	**Low**

Potential Impact Without Management	Inherent Risk			Managed Risk Assessment	Residual Risk		
	L	C	RISK		L	C	RISK
Fragmentation to vegetation and ecological linkages.	Unlikely	Minor	**Low**	The potential impact on native vegetation is limited to a relatively small pocket of trees that forms the extremity of a larger vegetation band. The proposal will not cause any fragmentation.	Rare	Slight	**Low**
Native fauna (individuals and communities) can potentially be significantly impacted through clearing of habitat, introduction of weeds and disease and activities on site.	Possible	Moderate	**Med**	The majority of the site is already cleared and used for agricultural or extractive industry purposes and Midland Brick has avoided proposing extraction in vegetated areas where possible. The environmental significance of the 0.3ha pocket of parkland cleared trees and vegetation within the extraction site will be assessed through a clearing permit application to be submitted to DWER.	Unlikely	Minor	**Med**
Impact to hydrological regimes such as groundwater level changes, flooding, modification of watercourses etc.	Possible	Minor	**Low**	There will be no modifications to watercourses, no interception of groundwater and other hydrological regimes. Water will be managed on site through the use and/or construction of new ponds throughout the site. The likelihood of significant impact is "rare" as the event will only occur in exceptional circumstances and the consequence of impact is considered to be "minor" as the on-site impacts are low-level and offsite local impacts are minimal. Refer to the **Water Management Actions** for more specific management actions.	Rare	Minor	**Low**

Potential Impact Without Management	Inherent Risk			Managed Risk Assessment	Residual Risk		
	L	C	RISK		L	C	RISK
Intersection with the groundwater table (confined aquifer) which could potentially lead to dewatering requirements and contamination.	Unlikely	Minor	**Med**	There will be no interception with the groundwater (confined aquifer). There are no expressions of groundwater within the operational area. The likelihood of significant impact is "rare" as the event will only occur in exceptional circumstances and the consequence of impact is considered to be "minor" as the on-site impacts are low-level and offsite local impacts are minimal. Refer to the **Water Management Actions** for more specific management actions.	Rare	Minor	**Low**
Impact to surface water quality due to erosion and transport of sediment to watercourses and wetlands. Sedimentation can result in higher turbidity levels and suspended solids.	Possible	Moderate	**Med**	Refer to the **Water Management Actions.** The likelihood of impact with management is "rare" and the consequence of impact is considered to be "minor" as the on-site impacts are low-level and offsite local impacts are minimal.	Rare	Minor	**Low**
Impact to surface water and groundwater from hydrocarbons (fuel and oil) and chemicals as a result of spills and leaks from equipment and machinery used.	Unlikely	Minor	**Med**	Midland Brick will operate in accordance with its Standard Operating Procedure for management and maintenance of machinery and training of staff. Refer to the **Refuelling Management Actions** (which addresses management of hydrocarbon spills and leaks. The likelihood of impact with management is "rare" and the consequence of impact is considered to be "minor" as the on-site impacts are low-level and offsite local impacts are minimal.	Rare	Minor	**Low**

Potential Impact Without Management	Inherent Risk			Managed Risk Assessment	Residual Risk		
	L	C	RISK		L	C	RISK
Pathogens from staff amenities posing a risk to water quality and public health.	Unlikely	Minor	**Med**	Staff amenities are managed in accordance with the manufacturer's instructions. Amenities will be serviced regularly and removed when the quarry is not in operation. The likelihood of impact with management is "rare" and the consequence of impact is considered to be "minor" as the on-site impacts are low-level and offsite local impacts are minimal.	Rare	Minor	**Low**
Soils subject to significant water and wind erosion.	Possibl e	Minor	**Med**	Wind erosion can be managed through the **Dust Management Actions**. The likelihood of impact is "rare" and the consequence of impact is considered to be "minor" as the on-site impacts are low-level and offsite local impacts are minimal.	Rare	Minor	**Low**
Risk of acid sulphate soils forming or being intercepted.	Unlikely	Modera te	**Med**	State government mapping does not show the site as located in an acid sulphate soils risk area. However, Midland Brick has undertaken an *Acid Sulphate Soil Investigation and Management Plan* for its operations in the broader local area, which found that any potential for ASS would be at depth below the groundwater table, which will not be intersected as part of this operation (and has not to date in the existing pit).	Rare	Minor	**Low**

Potential Impact Without Management	Inherent Risk			Managed Risk Assessment	Residual Risk		
	L	C	RISK		L	C	RISK
Impact to Aboriginal Heritage Sites.	Unlikely	Minor	**Med**	The site falls within the Ellen Brook Upper Swan cultural heritage area (ID 3525) which is described as a creative/dreaming site. It is mapped across the broader area as shown in Figure 4.8. The likelihood of significant impact with management is "rare" as the event will only occur in exceptional circumstances and the consequence of impact is considered to be "minor" as the on-site impacts are low-level and offsite local impacts are minimal. Midland Brick is undertaking due diligence of the quarry in accordance with the Aboriginal Heritage Act 1972.	Rare	Minor	**Low**
Impact to sites of European heritage.	N/A			No registered European heritage sites are located on or surrounding the site.	N/A		
Noise levels exceed the assigned noise levels as prescribed by the Noise Regulations to noise sensitive premises.	Unlikely	Minor	**Med**	Refer to the management provided in the **Noise Management chapter**. The likelihood of significant impact with noise management is "rare" as the event will only occur in exceptional circumstances and the consequence of impact is considered to be "minor" as the on-site impacts are minimal and offsite local impacts are minimal.	Rare	Minor	**Low**
Dust emissions leave the property boundary and have off-site impact on sensitive premises.	Unlikely	Minor	**Med**	Refer to the management provided in the **Dust Management Actions**. The likelihood of significant impact with dust management is "rare" as the event will only occur in exceptional circumstances and the consequence of impact is considered to be "minor" as the on-site impacts are minimal and offsite local impacts are minimal.	Rare	Minor	**Low**

Potential Impact Without Management	Inherent Risk			Managed Risk Assessment	Residual Risk		
	L	C	RISK		L	C	RISK
Separation distances are not adequate enough to reduce impact on sensitive land uses.	N/A			Separation distances to sensitive land uses are greater than the recommended distance of 500-1000 metres as recommended by EPA Guidance Statement No. 3. The closest sensitive residence sits outside of the prescribed 500m buffer.	N/A		
Impact of truck use on local and regional roads and traffic.	Unlikely	Minor	**Med**	The proposal is an expansion to an existing clay quarry. It is expected that truck movements to and from the site will not increase. The likelihood of impact to local roads is therefore considered to be "rare" as the road contributions will be made by the operator and the consequence of impact is "minor" as any impact is likely to be low-level.	Rare	Minor	**Low**
Impact of the operation on visual amenity and that the pit area can be seen from the public realm.	Unlikely	Minor	**Med**	The site already has established mature screening vegetation to provide visual screening. It will be management in accordance with the **Visual and Amenity Management Actions**. The likelihood of visual impact from unsuccessful rehabilitation is "rare" and the consequence of impact is considered to be "minor".	Rare	Minor	**Low**

6 Dust Management

6.1 Introduction

A dust risk assessment has been undertaken for the Muchea 5 Quarry to evaluate the potential for dust generation and its potential impacts beyond the site boundary. This assessment considers the full range of operational activities that may contribute to dust emissions, the associated environmental and receptor-related risk factors, and the control measures proposed to mitigate those risks. The assessment has been informed by site-specific characteristics and aligns with the Department of Water and Environmental Regulation's Draft Guideline: Dust Emissions (2021) and A Guideline for Managing the Impacts of Dust and Associated Contaminants from Land Development Sites, Contaminated Sites, Remediation and Other Related Activities (Department of Environment and Conservation, 2011).

6.2 Objectives

The objective of Dust Management Plan are:

- To manage the potential for dust generation
- To minimise the likelihood of any dust created dispersing past the lot boundaries
- To provide a process in the event of a dust-related complaint.

6.3 Review of Dust Risk Factors

This assessment begins with a review of site-specific dust risk factors, informed by relevant guidance documents, including the *Draft Guideline: Dust Emissions* (DWER, 2021). This high-level review provides context for the types of considerations that inform dust emission risk assessments and underpins the subsequent site classification and risk evaluation.

Site Classification

The site has been classified using the criteria outlined in *A Guideline for Managing the Impacts of Dust and Associated Contaminants from Land Development Sites, Contaminated Sites, Remediation and Other Related Activities* (Department of Environment and Conservation, 2011). While this guideline provides a general framework for dust management and is not specific to extractive industries, it offers an appropriate basis for assessing dust risk in the absence of quarry-specific classification tools.

Based on site-specific factors including the scale of operations, distance to sensitive receptors and local topography, the Muchea 5 Quarry is considered to present a low dust risk. Accordingly, this chapter adopts a proportionate and site-specific dust management approach tailored to the quarry's operational context.

Dust Emission Factors

The "Draft Guideline: Dust Emissions" (DWER, 2021) provides information on the factors to be considered in a dust emission assessment. Commentary on the operation against these factors is provided in the table below.

Table 6.1 - Dust emission factors

FACTOR	COMMENT	CONCLUSION
Location and proximity to sensitive receptors.	The nearest sensitive receptor (residence) is approximately 540 metres east of the site, beyond the EPA's minimum separation distance of 500m for clay extraction. The pit is located in a rural setting with no sensitive land uses within the immediate vicinity.	Low sensitivity – Adequate separation
Management of dust sources and activities.	Dust is managed through a comprehensive set of proactive measures including watercarts, vehicle speed controls, scheduling of activities in moist seasons, bunding, and operator training. Dust suppression is responsive to weather conditions and visual inspections are routine.	Best practice controls in place
Characteristics of the dust.	The dust is primarily composed of fine clay and lateritic particles. Freshly excavated clay is typically damp and non-dusty. Minimal risk of hazardous particulate emissions.	Non-hazardous, coarse particulate matter
Potential dust impacts from other nearby sources.	Other sources of dust in the area include nearby extractive industries and the Shire's landfill facility. However, cumulative impacts are considered low due to the isolated and spread-out nature of operations. The landfill located on the site is likely to be operational at different times to the quarry a majority of the time, meaning that cumulative dust impacts are not likely.	No significant cumulative impact
Topography and complexity of terrain.	Natural topography and constructed bunds provide wind shielding, limiting the potential for dust to travel off-site.	Favourable – low complexity terrain
Size and/or complexity of the facility.	The facility is a small to medium-scale clay quarry, operating intermittently (approx. 3–4 months/year for excavation). Limited stockpiling and carting. Controlled, low-complexity operations.	Low to moderate complexity
Whether the proposal is in a Strategic Industrial Area.	The site is not located within a designated Strategic Industrial Area. It is a rural-based clay quarry.	Not applicable
Whether the proposal is in an area that has an established risk-based approach and regulatory context.	Standard regulatory requirements apply.	Regulatory framework in place
Compliance history of existing premises.	Midland Brick has a strong compliance record and has received no dust complaints for this site to date. Existing dust management procedures have proven effective across other operational sites.	Good compliance history
Other considerations	Dust is also mitigated through progressive rehabilitation, use of existing vegetation and bunding, and seasonal scheduling of excavation. There is no on-site processing.	Additional natural and operational buffers in place

Site classification

The site classification has been prepared for the site in accordance with the Department of Environment and Conservation's A Guideline for Managing the Impacts of Dust and Associated Contaminants from Land Development Sites, Contaminated Sites, Remediation and Other Related Activities (2011). The classification is provided in the table below, which is reproduced from Appendix 1 of the Guidelines.

Table 6.2 - Site classification scoring

ITEM	SCORE	ELEMENT
PART A – Nature of site		
Nuisance potential of soil, when disturbed	4 (Medium)	The activities on site that will likely "disturb" the soil are excavation activities, loading trucks with clay, recontouring and vehicles moving across the site. For the remainder of the time (when the site is not operational) the soil will not be disturbed.
Topography and protection provided by undisturbed vegetation	1	Site is located within a deep pit, with retained vegetation to the east providing effective windbreaks.
Area of site disturbed by the works	6 (Between 5 and 10ha)	The operational area is approximately 10ha in size.
Type of work being done	12 (bulk earthworks)	Intermittent excavation and carting of clay. No crushing or screening occurs on site. Moderate intensity extractive works.
PART B – Proximity of site to other land uses		
Distance of other land uses from site	6 (between 500m and 1km)	Nearest sensitive receptor is 540m away, exceeding EPA's recommended separation distance.
Effect of prevailing wind direction on other land uses	6 (Isolated land uses affected by one wind direction)	Eastern receptors are in line with morning easterly winds in summer and northeast winds in winter, but significant separation and controls reduce risk.

Source: *A Guideline for Managing the Impacts of Dust and Associated Contaminants from Land Development Sites, Contaminated Sites, Remediation and Other Related Activities* (Department of Environment and Conservation, 2011).

Calculation: Part A total × Part B total = **276**

The score places the site within Site Classification 2, reflecting a low risk of dust impact. Under the Guidelines, this classification recommends management actions as set out in this Management Plan.

6.4 Dust management actions

It is noted that the nearest sensitive receptor (residence) is approximately 540 metres east of the site. Therefore, the focus of dust suppression will be on preventing off-site impacts, particularly during transport and earthworks activities.

The risk assessment at Chapter 5 identifies dust-related inherent risks is Medium. With the management actions detailed below, all managed risks are reduced to Low.

Water Supply for Dust Suppression

Dust suppression is generally achieved using water as a dust suppressing agent. The application of water over areas prone to the generation of dust helps to reduce the likelihood that small dust particles will be picked up by the wind. Water will be used as a dust suppressing agent on days where excavation and carting take place and monitored as required in accordance with climate conditions (such as hot and dry periods).

Water will be available from the detention basins located at the base of the pit area. There is a substantial amount of water available in the basins and significant water reserves are located across the road at Muchea 6 clay pit. Watering will be undertaken as required utilising a water cart. The water cart will have a capacity of at least 12,000 litres. The frequency and amount of water applied will be dependent upon local conditions and observable dust generation and will vary as the conditions will change from day to day.

Dust Management Table

Table 6.3 below sets out the specific dust management actions that will be implemented for different operational activities and circumstances.

Table 6.3- Dust Management / Actions

Note: QM = Quarry Manager RMM = Raw Materials Manager EM = Environmental Manager

ACTIVITY	MANAGEMENT/ ACTION	RESPONSIBILITY	TIMING
General	QM to review the Bureau of Meteorology forecast regarding wind and temperature at the pre-start team meeting and discuss the likely weather impacts (and to decide whether the conditions mean that operations should not commence for the day or should be monitored for worsening conditions). QM's use the latest weather technology apps to review weather conditions, particularly wind.	QM	Ongoing
	When winds are sufficiently strong to negate the effects of dust management, operations will cease until conditions improve and compliance can be achieved. The team have authority to stop work if they see visible dust issues, especially if wind conditions deteriorate.	QM, Team	Ongoing
	Maintain all equipment in good condition.	RMM, QM	Ongoing
	Keep vehicle speed limits low throughout the site.	QM, Team	Ongoing
	Continue training programmes on dust control requirements to all workers and contractors.	QM, EM	Ongoing
	All non-conformances and dust related complaints immediately reported to the QM.	QM, EM	Ongoing
	Always Comply with the "Complaints Procedure".	QM, EM	Ongoing

ACTIVITY	MANAGEMENT/ ACTION	RESPONSIBILITY	TIMING
	Following complaints, the source of any excessive dust will be identified, and work practices will be modified or re-scheduled to reduce or eliminate the risk of future events.	QM, EM	Ongoing
	A notice is placed on site with contact details of the QM and details as to where dust complaints are to be directed. It will be displayed at all times.	QM	Ongoing
	Maintain regular communication with the owners of the nearest sensitive receptors.	QM	Ongoing
	Ensure that all site operators are trained to observe whether dust is leaving the property boundary or if adverse weather conditions are present.	QM, EM	Ongoing
	Ensure that all site operators are trained in procedures should dust be observed leaving the boundary or if there are adverse weather conditions such as when to stop operations or when to increase dust management measures (such as wetting down areas etc.)	RMM, QM, EM, Team	Ongoing
	Should dust visibly cross the site boundary at any time, dust suppression measures shall be increased immediately and if works are taking place they shall be modified accordingly. Should dust continue to be generated all works shall cease immediately and the site shall be sufficiently stabilised by application of water until the wind conditions are appropriate to resume works.	QM, Team	Ongoing
Vehicle and truck movements entering and exiting the site.	Vehicle and machinery exiting the site should be inspected to ensure they are not carrying clods/slurry of soil.	QM, Team	Ongoing
	Cover truck loads with a tarp before exiting the site.	QM, Team	Ongoing – during carting.
	QM to inspect the site on excavation and carting days to review dust management.	QM	Ongoing – On excavation and carting days
Machinery and vehicle movements throughout the site.	Watercarts will be utilised to wet down access tracks to prevent dust generation. Water for the carts should be obtained from the pond onsite.	QM, Team	Ongoing
	Chemical dust suppressants (such as Dustex) can be used on unsealed areas if they are planned to be unused for extended periods.	QM	Ongoing
	QM to inspect the site on excavation and carting days to review dust management.	QM	Ongoing – during operations

ACTIVITY	MANAGEMENT/ ACTION	RESPONSIBILITY	TIMING
	Train and discuss the impacts of vehicle speeds on dust generation.	QM, Team	Ongoing
Clearing of vegetation and stripping topsoil and overburden	Plan to conduct activity during late winter and spring when the soil is moist.	RMM, QM	Late winter and spring
	The team have authority to stop work if they see visible dust issues, especially if wind conditions deteriorate.	QM, Team	Ongoing
	Watercarts will be utilised at all times to wet down areas to prevent dust generation. Water for the carts should be obtained from the pond onsite.	QM, Team	Ongoing – during activities.
	QM to inspect the site to review dust management during clearing and stripping activities.	QM	Ongoing – during activities.
Excavation of clay and loading onto trucks.	Watercarts will be utilised during dry weather conditions to wet down excavation areas to prevent dust generation where required. Water for the carts should be obtained from the pond onsite.	QM, Team	Ongoing – during excavation.
	QM to inspect the excavation area to review dust management.	QM	Ongoing – during excavation.
	Train team on how to reduce dust via sensible placement of loads into trucks.	QM, Team	Ongoing
	Excavate clay behind barriers like trees and surface bunds (where possible).	QM	Ongoing
Excavation of clay.	Watercarts will be utilised during dry weather conditions to wet down areas to prevent dust generation when required. Water for the carts should be obtained from the pond onsite.	QM, Team	When excavating.
	Ensure vehicles slow down as they approach the dump zone.	QM, Team	Ongoing
	Consider wind direction when tipping and make adjustments if necessary.	QM, Team	Ongoing
Loading clay onto trucks during carting campaign.	Watercarts will be utilised during dry weather conditions to wet areas to prevent dust generation where required. Water for the carts should be obtained from the pond onsite.	QM, Team	Ongoing – during carting

ACTIVITY	MANAGEMENT/ ACTION	RESPONSIBILITY	TIMING
	Ensure operators place each load into the truck carefully by keeping the bucket low and tipping slowly in order to reduce the potential for dust generation from loading trucks.	QM, Team	Ongoing – during loading.
	Train team on how to reduce dust via sensible placement of loads into trucks.	QM, Team	Ongoing
Recontouring and rehabilitation of the operation area.	Watercarts will be utilised during dry weather conditions to wet down areas to prevent dust generation. Water for the carts should be obtained from the pond onsite.	QM, Team	Ongoing – during rehabilitation.
	QM to inspect the operation area to review dust management.	QM	Ongoing – during rehabilitation.

7 Noise Management

7.1 Introduction

This chapter outlines the noise management measures that Midland Brick will implement to minimise noise generation and associated impacts during operations at the Muchea 5 Quarry. It describes the proposed noise control measures, corrective actions, and complaints management procedures, and provides supporting information to demonstrate how these measures collectively reduce noise emissions and enhance management effectiveness.

The existing quarry floor is approximately 10 metres below the ground level. This elevation difference provides a physical barrier to noise propagation. In addition, an earthen noise bund will be established along the eastern boundary to further reduce potential noise transmission towards nearby residences, especially as the quarry is expanded to the east

Extraction is undertaken in short campaigns totalling approximately four to five months per year. For the remaining seven to eight months, the site will be dormant with respect to extraction activities. Carting will occur intermittently throughout the year, generally on an as-needed basis of around four days per month.

The noise management approach has been developed in accordance with the following documents, as well as best practice in mine/quarry management and industry experience:

- "Draft Assessment of Environmental Noise Emissions Guideline" (DWER, 2021)
- Environmental Protection (Noise) Regulations 1997
- "State Planning Policy 2.4 – Planning for Basic Raw Materials Guidelines" (WAPC, 2021).

7.2 Objectives

The objectives of the Noise Management Plan are:

- To manage the potential for noise generation to ensure compliance with the Environmental Protection (Noise) Regulations 1997
- To reduce the potential for noise to impact on noise sensitive premises
- To provide a process in the event of a noise-related complaint.

7.3 Sensitive Receptors

The recommended separation distance in EPA Guidance Statement No. 3 is 500 to 1000 metres for the extraction and processing of clay. It should be noted that there is no processing of clay proposed on this site.

The nearest sensitive receptor (residence) is approximately 540 metres east of the site, exceeding the EPA's recommended separation distance of 500m for clay extraction. There are no sensitive receptors within 500m of the outer edges of the expanded quarry. GS3 states that the minimum recommended separation distances can be reduced with site specific assessments. However, as this site already meets the recommended minimum, this means that a site specific noise assessment is probably not necessary to demonstrate compliance with the Regulations.

7.4 *Noise assessment Draft Guideline: Assessment of Environmental Noise Emissions (DWER, 2021))*

Introduction

A noise risk assessment has been undertaken for the Muchea 5 Quarry to evaluate the potential for noise generation and its potential impacts beyond the site boundary. This assessment considers the full range of operational activities that may contribute to noise emissions, the associated environmental and receptor-related risk factors, and the control measures proposed to mitigate those risks. The assessment has been informed by site-specific characteristics and aligns with the Department of Water and Environmental Regulation's Draft Guideline: Assessment of Environmental Noise Emissions (2021).

Screening Analysis

The Draft Assessment of Environmental Noise Emissions Guideline (DWER, 2021) includes a screening analysis based on Appendix A, which is used to help determine if detailed noise assessments are required for a proposed development. Given the site-specific characteristics including adequate separation distances (540m to nearest receptor), natural topography providing noise barriers, and the intermittent nature of operations, the screening analysis indicates a low risk of noise impacts.

Review of Noise Risk Factors

The Guidelines provide information on the factors to be considered in a noise emission assessment. This high-level review provides context for the types of considerations that inform noise emission risk assessments. A review of these factors is provided in Table 7.1 below.

Table 7.1– Noise emission assessment

FACTOR	COMMENT	CONCLUSION
The context of the noise emissions: • Background noise • Time of day and activity of the receiver • Distance, topography and meteorological conditions between the emitter and receivers • The types of receptors, including current and potential • Contributing and cumulative noise sources.	There are no sensitive receptors less than 500 metres from the operation. The existing quarry sits at a depth of up to 10 metres and is surrounded by high pit walls on most sides. Operation of the quarry will be between daylight hours of between 7am and 6pm Monday to Saturday. There are some current contributing or cumulative noise producing activities in the vicinity associated with the approved inert landfill on the site, and adjoining Shire landfill, however as the quarry and landfill are used intermittently, it is unlikely they will be used at the same time and contributing to cumulative noise.	It is considered that there is a low risk that noise will impact on noise sensitive receptors.

FACTOR	COMMENT	CONCLUSION
The nature of the noise emissions • The characteristics of the noise emission • Received noise/vibration levels • How the noise emission is perceived by receivers.	The noise emissions associated with extractive industry relate to use of machinery (i.e. dozer, loader, excavator etc) and haul trucks.	As there are no sensitive receptors within 500m of the operation, it is considered that there is a low risk that noise will impact on noise sensitive receptors.
The control and management of noise emissions • Whether the noise management measures set out in a detailed noise emission assessment are acceptable, reasonable and practical • Whether the noise management measures are likely to be effective in reducing noise levels to meet the Noise Regulations or other standards and noise values outlined in the guideline.	The noise management measures set out in this document are industry standard and best practice, and can realistically be implemented. It is also considered that the noise management as set out in this plan will be effective at reducing noise levels because, similar to the above, the measures are industry standard and have been demonstrated at other quarry sites to be effective.	It is considered that there is a low risk of noise affecting nearby sensitive receptors when the Noise Management Actions are implemented.
Known or demonstrated compliance: • By the occupier and premises with the provisions of the EP Act • With the Noise Regulations or other standards and noise values outlined in the guideline with the screening and detailed noise emission assessment process set out in the guideline.	The site has historically been used for extractive industry for over 20 years, and no noise complaints have been received.	The compliance history for the site is good and therefore is not a concern.

Based on site-specific factors, including the scale of operations, distance to sensitive receptors (540m), noise barriers, and the intermittent nature of operations, the Muchea 5 Quarry is considered to present a low noise risk. Accordingly, this chapter presents a proportionate, yet site specific, noise management approach tailored to the quarry's operational context.

7.5 Operational controls

Midland Brick is aware of its responsibilities to reduce potential impact from noise and currently undertakes the following:

- Carting and excavation will not be continuous throughout the year – extraction activities are dormant for the equivalent of approximately 7-8 months annually, while carting occurs intermittently (4 days per month)
- Use of earthen noise bunds
- All equipment used for excavation is well maintained which aims to minimise noise generation
- All vehicles use broadband reversing beepers to reduce noise emissions
- Operations will only take place during the approved hours of operation which are within the hours stipulated by the Regulations
- Comply with the complaints procedure.

Other operational controls as set out below will also be implemented.

7.6 Noise Management Actions

The risk assessment at Chapter 5 identifies noise-related inherent risks as Medium. With the management actions detailed below, all managed risks are reduced to Low.

The noise management actions, responsibilities and timing are presented in Table 7.2 below.

Table 7.2 – Noise Management / Actions

Note: QM = Quarry Manager RMM = Raw Materials Manager EM = Environmental Manager

MANAGEMENT/ACTION	RESPONSIBILITY	TIMING
General		
1. Adhering to the "daylight hours" as set out in the Regulations, with work conducted in the hours identified in the application or on the approval.	QM, Team	Ongoing
2. All machinery and vehicles being fitted with appropriate noise suppression equipment to reduce noise levels so far as is practicable, with machines the quietest reasonably available.	QM, EM	Ongoing
3. Maintain all equipment in good condition.	QM	Ongoing
4. Ensure that Purchasing staff have clear policy guidelines for procurement of new plant to ensure that noise levels do not increase over time.	RMM, purchasing staff	When purchasing equipment
5. Ensure that Maintenance staff implement a maintenance programme to prevent noise levels increasing over time.	RMM, maintenance staff	Ongoing
6. Continue training programmes on noise control requirements to all workers and contractors, including any new methods as proposed by this plan.	RMM, QM, EM	Ongoing
Machinery used for earthworks, loading and carting		

	MANAGEMENT/ACTION	RESPONSIBILITY	TIMING
7.	Construct noise bunds around the perimeter of the operation.	QM	When operating machinery/equipment
8.	Make use of radio communication between wheeled loader and road truck operators to allow for positioning and loading of trucks without the use of horn signals as far as practicable	QM, operators and contractors	When loading trucks
	Complaints		
9.	All noise and vibration related complaints immediately reported to the Quarry Manager and complaints procedure followed.	QM, EM, Team	Ongoing
10.	Following substantiated 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.	QM, EM	Ongoing

8 Refuelling Management

8.1 Introduction

The purpose of this chapter is to outline the procedures to follow to reduce the risk of spills and leaks and the response in the event of a hydrocarbon spill. Table 8.1 below provides the actions to be followed in the event of a hydrocarbon spill or leak. It includes actions for the following:

- General actions to maintain machinery and vehicles
- Servicing of machinery
- Actions for when a spill is identified
- Actions to manage a minor spill or leak
- Actions to manage a large spill or leak
- Reporting requirements.

While no fuel, chemicals or lubricants are stored within the operation area, machinery and vehicles used for the operation are refuelled within the quarry using mobile tankers. This Section provides a list of actions should any spills or leaks occur during refuelling and servicing.

8.2 Refuelling

Machinery and vehicles used for the operation will be refuelled on site from mobile tankers when required. As no fuel, chemicals or lubricants are stored on site, this considerably reduces the risk of spills and leaks occurring. The use of mobile fuel tanks to refuel machinery and vehicles presents a much lower risk to the environment than storing fuel on site.

Refuelling will be undertaken in the operation area to allow for containment if a spill does occur. It will not be undertaken upstream of any surface water features and will occur in the operation area as the drainage in this area is controlled and does not flow into the surrounding area.

Refuelling will also not occur within any area with dry grass. The main risk associated with refuelling is the minor drips that occur during removal of the hoses etc. The actions required to address all spills (minor and large) is provided below.

8.3 Refuelling Management Actions

The operation will use mobile refuelling exclusively for excavation equipment, with no fuel storage on-site. Refuelling activities will be conducted in designated areas following the Refuelling Management Actions to minimise spill risks. Spill kits will be readily available, and all refuelling will be supervised by trained personnel to ensure compliance with environmental best practices.

The Refuelling Management Actions, responsibilities and timing is presented in Table 8.1 below.

The risk assessment at Chapter 5 identifies refuelling and hydrocarbon-related inherent risks as ranging from Low to Medium. With the management actions detailed below, all managed risks are reduced to Low. Refer to Table 5.3 for the detailed risk assessment of specific factors.

Table 8.1 – Refuelling Management / Actions

Note: QM = Quarry Manager RMM = Raw Materials Manager EM = Environmental Manager

	MANAGEMENT/ACTION	RESPONSIBILITY	TIMING
	General		
1.	No fuels, lubricants or chemicals will be stored on site. They are brought to the site as required.	QM	Ongoing
2.	Inspect all machinery for hydrocarbon leaks at the pre-start meeting.	QM	Ongoing (at the pre-start meeting)
3.	Major repairs of machinery are done off site, where practical.	QM	Ongoing
4.	Ensure refuelling and lubricating occurs in designated areas within the pit area and free from vegetation and dry grass.	QM	Ongoing
5.	Ensure that equipment for the containment and clean-up of spills is provided on site.	QM	Ongoing
6.	Maintain the site in a tidy manner.	QM, Team	Ongoing
7.	Ensure that refuelling activities are not located upstream of watercourses and take place within the drainage-controlled operation area.	QM	Ongoing
8.	Ensure a spill kit is kept with the mobile fuel truck.	QM	Ongoing
9.	Train fuel truck operators and other site workers in Standard Operating Procedures, in the proper use of the spill kits and any other procedures in this section.	RMM, QM, EM	Ongoing
	Servicing and repairs		
10.	Service all machinery and equipment in accordance with the maintenance schedule prescribed.	RMM, QM	Ongoing
11.	Ensure that all waste fluids are evacuated into the containers located on the mobile fuel truck.	QM	Ongoing
12.	Inspect for fuel, oil and hydraulic leaks on machinery during the start of shift pre-start inspection.	QM	Ongoing
	When a Spill is identified		
13.	Isolate the spill area and identify the spilt substance.	All workers and contractors.	As soon as a spill or leak is identified.
14.	Ensure the source of the spill is restricted or stopped.	All workers and contractors.	As soon as a spill or leak is identified.
15.	The spill or leak should be contained by placing soil and clay resource around it.	All workers and contractors.	As soon as a spill or leak is identified.
16.	Contact the Quarry Manager to advise them that a spill has occurred.	All workers and contractors.	Once the spill is contained.

	MANAGEMENT/ACTION	RESPONSIBILITY	TIMING
	Minor spills		
17.	Minor spills should be scooped up with the clay resource.	QM, Team	In the event of a minor spill.
18.	The clay resource containing the spill should be sent to the brickworks site and burnt with the clay during the firing process.	QM, Team	In the event of a minor spill.
	Large spills		
19.	Large spills can be absorbed using polypropylene pads and scooped up with the clay resource.	QM, Team	In the event of a large spill.
20.	Depending on advice from DWER, soils containing large spills can be removed from the site and disposed of at an appropriate location/facility.	QM, Team	In the event of a large spill.
	Reporting		
21.	All spills and leaks incidents are to be reported to the Quarry Manager and Environmental Manager and followed up with an incident form.	QM, EM, Team	In the event of a spill or leak.
22.	The incident form is to be followed up and investigated to determine the cause of the spill and to assist with prevention of future incidents.	QM	In the event of a spill or leak.
23.	The Quarry Manager or Environmental Manager is to report large spills to DWER and follow up any additional reporting or remediation requirements.	QM, EM	In the event of a large spill or leak.

9 Visual Amenity Management

9.1 Introduction

This chapter describes the visual amenity management measures that will be used by Midland Brick to reduce the impact of the clay quarry operation from the road (public realm) and from neighbouring properties and surrounding residents. Separation distances serve the function of providing distance to sensitive land uses (such as residential dwellings).

The objectives of the visual amenity management are:

- To reduce the impact of the operation on the visual amenity from neighbouring properties and the public realm
- To reduce the potential for the clay extraction operation to have a visual impact

9.2 Visual Amenity Assessment

The site is located in an area where there are an existing clay extraction operation and two landfill operations. The visual context is therefore already characterised by industrial and extractive land uses.

Overburden bunds will be strategically placed and shaped to blend with the natural landscape. Excavations for most of the time will be below ground level, providing a visual barrier to the operation., The walls of the pit will help screen it from surrounding properties.

Midland Brick planted vegetation on the eastern and northern extent of the proposed excavation area approximately 15 years ago to assist with creating a vegetative screen to the rural residential properties further to the east. This vegetation is now mature and provides an effective visual screen. The operation is also effectively screened from Wandena Road to the west by the established vegetation between the road and the operation.

Rehabilitation of the site will take place by the landowner.

Based on the information above and discussed throughout Chapter 4 (Site Description), it can reasonably be concluded that the impact of the clay extraction operation on visual amenity from the public realm and adjoining land is low.

9.3 *Visual Amenity Management Actions*

The actions, responsibilities and timing relating to visual amenity are presented in Table 10.1 below.

Table 10.1 Visual Amenity Management / Actions

MANAGEMENT/ ACTION	Responsibility	TIMING
1. Maintain existing screening bunds around the excavation areas.	QM	Ongoing
2. Maintain mature screening vegetation to the north and east of the proposed expansion area.	RMM	Ongoing
3. Establish new visual screening bunds using overburden when moving into a new excavation.	QM	Prior to moving into a new excavation area
4. Excavations for most of the time will be below ground level. The walls of the pit will help screen it from surrounding properties.	QM	Ongoing
5. Comply with the Dust Management actions for the operation to ensure that visible dust does not pass the property boundaries.	QM, EM	Ongoing
6. Rehabilitate the site in accordance with the Rehabilitation Plan.	QM, EM	Ongoing
7. Maintain effective communication with the nearest neighbours to ensure that any visual amenity concerns are addressed.	QM	Ongoing

10 Waste Management

The purpose of this chapter is to ensure that the generation of all wastes during day-to-day operations adopts the principles of the waste hierarchy: reduction, reuse, recycling, treatment and disposal.

10.1 Unauthorised access dumping of rubbish

The potential for dumping of rubbish occurs from trespassers entering the site illegally. Security is in place throughout the site, however, the risk of trespassers entering the site is always a possibility at extractive industry operations. The site will be fenced, with the gates locked. Additionally, signs will be located around the sites perimeter to warn the public that the site is an open pit to deter trespassers from entering the site.

10.2 Solid domestic waste and light industrial waste

As the site operates with direct loading and no stockpiling, waste will be collected at the point of generation and stored in designated bins for regular removal by a licensed waste contractor. Recyclable materials will be separated where possible and sent to appropriate recycling facilities. Any hazardous or industrial waste will be handled in compliance with relevant guidelines to prevent contamination. Regular site inspections will ensure waste management practices remain effective, with corrective actions taken as needed.

10.3 Wastewater disposal

Portable toilets will be managed and cleaned in accordance with the manufacture's specifications. There will be no discharge to the environment.

10.4 Waste Management Actions

The Waste Management actions, responsibilities, and timing are presented in Table 10.1 below.

Table 11.1 - Waste Management / Actions

MANAGEMENT/ ACTION	Responsibility	TIMING
1. Recycle waste where possible.	QM	Ongoing
2. Site management: keeping areas clean, removing rubbish to the approved waste disposal facility.	QM	Ongoing
3. The site will be secured with fences and gates to reduce the potential for trespassers to enter the site for illegal dumping mitigation.	QM	Ongoing
4. Maintain public signage for awareness of the extractive industry site.	QM	Ongoing
5. Maintain fences around the site perimeter.	QM	Ongoing

MANAGEMENT/ ACTION	Responsibility	TIMING
6. Ensure any ablution facilities are maintained in accordance with the manufacture's specifications.	QM	When/ If required

11 Water Management

11.1 Introduction

This chapter describes the various drainage control and water management actions implemented at the Muchea 5 Quarry. It has been set out to provide actions which can be efficiently and effectively understood and actioned by Midland Brick staff and contractors.

It should be noted that operations have been occurring on the site for a significant period of time and water management has been adequately managed by Midland Brick to date. The water management approach described in this chapter builds on this operational history and incorporates current best practice recommendations.

All rainwater within the operation area is retained on-site and collected within the drainage basin at the base of the pit. Existing drainage infrastructure will continue to manage surface water flow, with additional drainage measures implemented as excavation progresses.

11.2 Objectives

The objectives of the Water Management Plan are to:

- Ensure that extractive industry activities do not have an adverse impact on surface water and groundwater resources
- Provide for management of water within the operation area.

11.3 State Planning Policy 2.9 – Water Resources

State Planning Policy 2.9 – Water Resources was prepared by the WAPC in 2006. The objectives of the Policy are to protect, conserve and enhance water resources, assist in ensuring the availability of suitable water resources and promote the sustainable use of water resources. It provides a range of policy measures to guide and assist decision-makers in the consideration of water resources in decision-making.

Policy Measures are provided for surface water, groundwater, wetlands, waterways, estuaries and total water cycle management. The Policy makes specific reference to decision-making and advises that "where there is demonstrable adverse and unacceptable impact on the quality and quantity of significant water resources, planning decision-makers should ensure that planning proposals and applications either do not proceed or are modified so that significant water resources are protected, conserved and enhanced".

11.4 Water Quality Protection Note 15 – Basic Raw Materials Extraction

Water Quality Protection Note No. 15 – Basic Raw Materials Extraction was prepared by DWER in 2019. The Note applies to extraction of basic raw materials and associated processing activities (stockpiling, crushing, screening etc.). It provides a comprehensive list of recommendations for a variety of situations and scenarios where protection of water resources needs to be considered for extractive industry.

The WQPN 15 provides specific recommendations relevant to the Muchea 5 Quarry operation including:

Groundwater Protection:

- Maintaining adequate vertical separation distance between the base of extraction and the highest groundwater level to protect water quality and ensure evaporation does not occur
- For non-PDWSA areas, the separation distance should be appropriate for site-specific conditions and future land use

Surface Water Management:

- Stormwater from disturbed areas should be managed to prevent turbidity via settling pits

Separation Distances:

- BRM extraction should maintain adequate buffers between waterways and their foreshore areas
- Operations should be above the 1 in 100 (1%) annual exceedance probability flood level

Operational Management:

- All machinery and vehicles must be regularly serviced and maintained, clean and free of leaks

The recommendations from WQPN 15 have been incorporated into the water management actions for the Muchea 5 Quarry as set out in this chapter.

11.5 Site Location and Separation Distances

The Muchea 5 Quarry is not located within a Public Drinking Water Source Area.

There are no major or significant watercourses within or directly adjoining the site. Minor drainage lines are located around the quarry which follow the natural sloping topography. These drainage lines are common features throughout this area of the landscape. No surface water features (watercourses or wetlands) are located within the quarry operation area.

A minor drainage line is mapped approximately 250–300 metres from the pit area. This feature functions as an ephemeral drainage line, conveying surface water during seasonal rainfall events, and forms part of the local tributary network of the Ellen Brook catchment. The drainage line flows generally west to north-west before discharging to downstream tributaries that ultimately connect with Ellen Brook, which is located several kilometres to the west of the operation. Ellen Brook flows in a southerly direction and discharges into the Swan River.

Schedule 2 of SPP 2.9 provides guidance for the determination of appropriate waterway buffers. It states that existing mechanisms for identifying foreshore management and protection areas is generally based on a setback of 30 metres for waterways. The operation is therefore considered to be sufficiently separated from the nearest minor and major surface water features, well exceeding the 30m buffer requirement.

11.6 Surface Water Runoff

All stormwater drainage will be contained within the operation area and is not permitted to flow into surrounding vegetation or watercourses. Rainwater which falls into the operation will be directed into existing pit areas and drainage basins. This method is consistent with the recommendations from WQPN No. 15.

Water detention basins already exist within the pit area to capture water runoff. These are created from previously extracted areas. As extraction progresses, the old pit areas are used as water detention basins before they are recontoured and rehabilitated.

Overburden excavated from the pit is used to create bunds around the pit area and water diversion drains (where required). These serve to prevent runoff from leaving the excavation area and to direct water to the drainage basins. The perimeter of the pit area is protected by bund walls which provide a physical barrier to water runoff. The bunds will be maintained throughout the life of the operation.

Water which lands within the excavation area flows down the batter slopes and is directed to the detention ponds at the lowest part of the pit. This ensures that rainwater which falls within the operation area is not permitted to flow into surrounding vegetation and surrounding watercourses.

11.7 Groundwater

A detailed Groundwater Management Plan is not considered necessary for Muchea 5 Quarry, as there is no intersection of aquifers through quarry operations, and no groundwater abstraction for operational purposes. Surface water management provides pollution and contamination control measures which also provide groundwater protection.

Groundwater in the area is deep, and excavation to a maximum depth of 10 metres will maintain at least a 2-metre separation from the groundwater table, consistent with WQPN 15 recommendations. This separation distance protects water quality, prevents evaporation losses, and ensures adequate buffering from any potential surface contamination events.

Groundwater will be managed by Midland Brick following standard operating procedures for machinery management and staff training, along with the Refuelling Management actions (Chapter 8) to prevent hydrocarbon spills. With these controls in place, the risk of groundwater contamination is considered low.

11.8 Water Management Actions

The water management actions, responsibilities and timing are presented in Table 12.1 below.

Table 12.1 – Water Management/Actions

MANAGEMENT/ACTION	RESPONSIBILITY	TIMING
1. Ensure run-off from operational areas is contained within the operation area through the placement of bunds and diversion drains.	QM, Team	Ongoing
2. Clay stockpiles to be placed on a compacted clay base within the operation area.	QM, Team	Ongoing
3. Potential water runoff is directed into the detention basins through the maintenance of clay bunds and diversion drains.	QM, Team	Ongoing
4. Maintain current separation distances to nearest surface water features.	QM, Team	Ongoing

MANAGEMENT/ACTION	RESPONSIBILITY	TIMING
5. Ensure groundwater table is not intercepted throughout excavation.	QM, Team	Ongoing
6. Maintain the excavation surface at least 2 metres above the groundwater table.	QM, Team	Ongoing
7. Ensure that there is capacity in the detention basins for high rainfall events.	QM, Team	Ongoing
8. Comply with the Refuelling Management Actions (Chapter 8).	QM, Team	Ongoing
9. Comply with the Waste Management Actions (Chapter 11).	QM, Team	Ongoing
10. Ensure any ablution facilities are maintained in accordance with the manufacturer's specifications.	QM	Ongoing
11. Continue training programmes on water management requirements to all workers and contractors.	QM, EM, Team	Ongoing
12. Any significant adverse water management issues to be recorded, investigated and remediated internally.	QM, EM, Team	Ongoing
13. Water retained on site can be used for dust suppression if required.	QM, Team	Ongoing
14. Rehabilitate the site in accordance with the Rehabilitation Management Actions (Chapter 12).	QM, EM, Team	When required

12 Weed Management

12.1 Background and Purpose

The purpose of this chapter is to set out the procedures in which weeds will be managed within the clay quarry operation area managed by Midland Brick. This Plan has been prepared in accordance with the advice in the Australian Weeds Strategy 2017 to 2027 (Invasive Plants and Animals Committee, 2016), with particular focus on management of Declared Plants and WoNS.

The objectives of this section are to:

- Reduce the risk of introduction and spread of weeds within the quarry operational area.
- To reduce the occurrence and risk of "edge effects" on the vegetation surrounding the operation.
- Eliminate "Declared Plant" species as listed under the Biosecurity and Agriculture Management Act 2007 and "Weeds of National Significance" as listed by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) located within the operation area.

12.2 Weed Definition and Context

Weeds are defined in the *Australian Weeds Strategy 2017–2027* (Invasive Plants and Animals Committee, 2016) as *"plants that require some form of action to reduce their negative impacts on the economy, the environment, and human health and amenity."* In general, weeds are non-native species that are considered undesirable due to their invasive nature and capacity to outcompete indigenous vegetation.

Environmental Weeds are those that establish and spread within natural ecosystems, often disrupting ecological processes and leading to a decline in native species and habitat quality. Some of these species are formally recognised as *Declared Plants* under relevant biosecurity legislation or listed as *Weeds of National Significance* (WoNS) due to their particularly severe impacts and widespread distribution.

Further details on these classifications are provided below.

- **Declared Plants** are controlled under the Biosecurity and Agriculture Management Act 2007. The list is regulated by the Department of Primary Industries and Regional Development (DPIRD). Weeds listed as a Declared Plant are required to be controlled as they pose a significant risk to the WA economy. It should be noted however that some weed species are not listed under this Act as they have an agricultural role. A list of Declared Plants is at the following link: https://www.agric.wa.gov.au/declaredplants/declared-plant-control-table
- **Pest Plants** are identified by local government under the Biosecurity and Agriculture Management Act 2007 in addition to weeds already listed as a Declared Plant. They will be listed under a local law prepared by the respective local government authority.
- **Weeds of National Significance** (WoNS) are listed by the DCCEEW. A list of the WoNS is available at https://weeds.org.au/weeds-profiles/ as a WoNS recognises a species as "a priority current and future weed threat to Australia, requiring coordinated and strategic

management along with shared stakeholder investment to develop and implement best practice to prevent, eradicate, contain and/or minimise its impacts in different parts of the nation" (Invasive Plants and Animals Committee, 2016).

**All WoNS have individual national strategic management plans which can be referred to if any are identified on Midland Brick properties.*

12.3 Weed Controls

Introduction

The Commonwealth Department of Climate Change, Energy, the Environment and Water recommend in the Australian Weeds Strategy 2017 to 2027 that there are four weed management options depending on the stage of invasion, as follows:

1 Prevention.
2 Eradication.
3 Containment.
4 Asset protection.

While the Australian Weeds Strategy is aimed at addressing weeds at a national level, the principles can also apply at a regional or local level.

Prevention of weed spread is largely addressed at a national and state/territory level through border controls and biosecurity.

However, at a local-level, Midland Brick have this management plan to reduce the potential for disease and weeds to enter or exit their clay operations. Prevention is recommended where there is minimal weed invasion.

Eradication of weeds is possible if weed populations are small or if the weed has only recently been introduced to the country, state or region. As is stated in the Australian Weeds Strategy (Invasive Plants and Animals Committee, 2016), "eradication at the local level tends to be less feasible, since on-going invasion tends to occur from adjacent areas, where the weed is not subject to the same high level of control". This needs to be taken into consideration as, although one aim of weed management is to eradicate certain from the property (such as Declared Plants and Weeds of National Significance), there is the risk that they will return or that they will not be entirely eradicated as invasion can occur from adjoining areas.

Containment of weeds aims to completely prevent further spread of a weed species beyond the boundary of existing infestations or to slow the spread. It may include reduction of the density or area of the infestation. Containment is recommended when there is a rapid increase in weed distribution and abundance.

Asset protection is generally applied to weed species that are widespread and abundant. Most likely they have existed in Australia for many decades and, over this time, have spread across large portions of their potential range. Eradication or containment of these species is considered to be impractical (Invasive Plants and Animals Committee, 2016). Instead, the goal becomes effectively managing weed threats to protect certain high-value assets. This form of weed management is a cost/benefit approach in which the feasibility and cost-effectiveness of controlling the weed needs to be considered. This is largely the case on properties which have a high number of agricultural weeds.

12.4 Weed Prevention

The primary and most effective weed management strategy is the prevention of weed introduction and establishment. In the context of the Muchea 5 Quarry, the preferred management approach is to prioritise the prevention of weed incursions, wherever practicable. This includes measures to avoid the introduction and spread of weeds within the quarry footprint as well as in the surrounding native vegetation. Proactive prevention is essential to maintaining the ecological integrity of the site and minimising the need for ongoing weed control interventions.

12.5 Weed Eradication and Containment

The management of weeds on the site will prioritise "*prevention*" of weed infestation as their first mode of weed control. There are no requirements to physically "*eradicate*" or "*contain*" weeds located within the operation area.

For any Declared Plants or WoNS within the operation area, the following weed control methods can be used as recommended by the Australian Weeds Strategy 2017 to 2027 (Invasive Plants and Animals Committee, 2016):

- **Physical –** the removal of the weed by physical or mechanical means, such as cutting, hand pulling, digging, mowing, tilling or burning. Hand pulling or digging can be useful for small infestations, particularly in highly sensitive areas or for herbicide-resistant weeds. Cutting and removal of woody weeds is often used in combination with chemical control (herbicide treatment of the cut stump).
- **Chemical –** involves the use of herbicides. Chemical weed control is generally considered to be an effective and practical form of weed control. Herbicides can be selective (targeting a particular group of plants, such as grasses or broadleaves) or nonselective and can either destroy or reduce the growth of treated weeds.
- **Biological –** the introduction of a weed's natural enemies, such as insects, pests, fungi or diseases to reduce weed spread or growth. Biological control can reduce the impact and spread of a weed but not eliminate it.

12.6 Weed management actions

MANAGEMENT/ACTION	RESPONSIBILITY	TIMING
Ensure no weed contaminated or suspect soil or plant particles are brought to the clay quarry operation area.	Quarry Manager, Environmental Manager	Ongoing
Ensure the operation is kept secure with perimeter fencing, signs and locked gates to avoid rubbish dumping from trespassers.	Quarry Manager	Ongoing
Keep vehicles to tracks and operational areas to reduce the risk of spreading weeds around the property and vegetation adjoining the operation.	Quarry Manager, Team	Ongoing
Remove all rubbish promptly from the operational area.	Quarry Manager, Team	Ongoing
Weed affected soils are not used for rehabilitation.	Quarry Manager, Environmental Manager	Ongoing

MANAGEMENT/ACTION	RESPONSIBILITY	TIMING
The operation will be inspected annually for the presence of any Declared Plants and Weeds of National Significance. The inspection will be undertaken by the Quarry Manager or Environmental Manager.	Quarry Manager, Environmental Manager	Annually.

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13 Rehabilitation Management

13.1 Introduction

This chapter provides a description of the rehabilitation process for the Muchea 5 Quarry. As each area is decommissioned and made safe and stable in accordance with Department of Local Government, Industry Regulation and Safety (DLGIRS) requirements, it will be handed over to the landowner for filling with appropriately classified inert material (subject to a separate approval from the landowner).

Midland Brick's rehabilitation obligations comprise recontouring and shaping the land to safe and stable slopes to DLGIRS safety standards. Responsibility then transfers from Midland Brick to the landowner when DLGIRS has signed off on the recontouring for safety compliance. The subsequent filling and final rehabilitation are the responsibility of the landowner (Demo Investment 3 Pty Ltd) and is subject to separate planning approvals.

13.2 Rehabilitation Objectives

The objectives and completion criteria of the rehabilitation process are listed in Table 9.1 below.

It should be noted that quarry operators are obligated to rehabilitate and make safe all slopes in accordance with DLGIRS requirements as required under the Mines Safety and Inspection Act 1994.

Table 13.1 – Rehabilitation Objectives and Completion Criteria

Objective	Completion criteria	Responsibility
The decommissioned quarry slopes are safe and stable.	All recontoured slopes are safe and stable in compliance with DLGIRS requirements.	Midland Brick
The decommissioned quarry is clean.	The decommissioned clay quarry areas are clean of rubbish and waste and equipment is removed.	Midland Brick

13.3 Recontouring Process

Recontouring within the Operation Area starts with bulk earthworks. Generally, a large bulldozer will be used to form the basic new slope angle by removing the mine bench structure. This is done by pushing from the top bench. Survey markers are placed at set positions back from the face to indicate where the dozer is to work to. The dozer operator cuts the face down slice by slice until they have worked back to the markers. Each bench is recontoured in the same manner. Once the clay benches have been reshaped, the overburden is spread over the entire face.

Contour banks will be used to control surface water runoff from the rehabilitated landform. The purpose of the contour banks is to reduce the effect of rain from causing excessive soil movement. Water management will continue throughout recontouring and rehabilitation with water directed from disturbed areas into the basins located within the pit areas.

Final recontouring will take place when Midland Brick completes operations in each area. It is the intention of Midland Brick to progressively hand areas no longer required for operations and to the

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landowner to commence fill once DLGIRS has signed off on safety compliance. Midland Brick will complete mine closure documents as required by DLGIRS. These documents demonstrate to DLGIRS that slopes are recontoured to a safe and stable condition.

13.4 Clean Fill

Decommissioned quarry areas will be rehabilitated by the landowner with the use of aggregate products and certified clean fill (material that will have no harmful effects on the environment). The aggregates and records of the source of the fill material and its suitability for use as part of the site rehabilitation project will be maintained with the site records. The fill is deposited and managed by the owner of Lot 301.

It is noted that the current quarry area on Lot 301 that abuts the proposed expansion area has Shire approval for inert and clean landfill being deposited as part of the rehabilitation works. Approval will be sought by the landowner at a later date for fill in the expansion area under a separate application process.

13.5 Final Site Clean-up

All wastes on site will be appropriately managed during and after operation of the site in accordance with the Waste Management actions (Chapter 11). They will either be recycled or taken to an approved waste disposal site. Rubbish will be stored in 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 and these are not stored on site.

After clay extraction activities have ceased in each area, all equipment will be removed from the site except for machinery required for recontouring.

13.6 Timing

As discussed above, progressive rehabilitation will take place where possible. The timing for progressive rehabilitation depends on several factors including market demand (which determines extraction rates), operational requirements (such as clay types, water management, and overburden availability), and the landowner obtaining separate planning approval for fill operations.

It is intended that the void will be filled by the landowner with aggregate products and certified clean fill. Final recontouring and rehabilitation over the entire quarry will occur at the end of the filling program.

13.7 Rehabilitation Management Actions

The rehabilitation management actions, responsibilities and timing are presented in Table 9.2 below.

MANAGEMENT/ACTION	RESPONSIBILITY	TIMING
Remove all equipment and machinery not required for rehabilitation.	Midland Brick – QM	When Midland Brick completes operations in each area.

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Undertake bulk earthworks to make the slopes safe and stable.	Midland Brick – QM	When Midland Brick completes operation in each area.
Maintain water drainage throughout the site – direct water from the disturbed areas into the dam located within the pit area.	Midland Brick – QM	Ongoing
Construct contour/interceptor banks on the recontoured surfaces to control erosion.	Midland Brick – QM	During rehabilitation
Ensure slopes are safe and stable in accordance with DLGIRS requirements.	Midland Brick – QM	During rehabilitation
Complete mine closure documents and obtain DLGIRS sign-off once slopes are made safe and stable.	Midland Brick – QM	Once slopes are safe and stable.

14 Complaints procedure

Midland Brick, the operator of the Muchea 5 (Kep Djalam) Quarry, is committed to maintaining a "good neighbour" policy. To uphold this commitment, the company has established clear internal procedures for receiving, assessing, and responding to complaints promptly and professionally. The following complaints procedure, successfully implemented at other Midland Brick clay quarries, has proven effective in addressing concerns efficiently and respectfully.

14.1 Receipt of complaints

Complaints can be received directly by Midland Brick. However, the more common process is for the complaint to be made to the Shire of Chittering or DWER, who will then advise Midland Brick. Regardless of the route the complaint has been made with, it will be addressed promptly by Midland Brick.

14.2 Recording of complaints

It is important that all complaints are recorded in a Complaints Register, whether received directly by Midland Brick, or via the Shire of Chittering or DWER.

14.3 Complaints procedure

The following activities will be undertaken should a complaint be received:

1. Complaints made to the operator will be documented and dealt with expeditiously.
2. Complaints received either directly from the complainant or via the Shire of Chittering/DWER will be reviewed by the operator and interested parties to assess:
    - the legitimacy of the complaint;
    - the aspects of the operation that triggered the complaint;
    - management actions required to address the issues raised and/or to bring operations into line with conditions imposed on the extractive operation by the Shire of Chittering.
3. Actions deemed necessary to bring operations into line with relevant legislation, regulation and license conditions will be undertaken immediately and before operations are recommenced.
4. Summaries of complaints and actions taken to address each specific issue will be recorded in the Complaints Register.

14.4 Notification of outcomes

Complainants and the Shire of Chittering 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 operations.

14.5 Duration of procedure

The complaints response procedure is applicable at all times (i.e. not just during site operation). Midland Brick will provide a prompt response whether the quarry is operating or not.

Midland Brick

Muchea 5 (Kep Djalam) Quarry

Rehabilitation Management Plan

Midland Brick Pty Ltd

October 2026

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Revision History

Date	Rev	Description	By	Checked	Approved
Oct-26	A - Final	Muchea 5 Quarry Revised Rehabilitation Management Plans	SR		

1 Background

1.1 Introduction

Midland Brick Pty Ltd (Midland Brick) operate the Muchea 5 (Kep Djalam) Quarry situated on Lot 301 Wandena Road, Lower Chittering. The site has been used as a clay quarry for decades, with the Shire of Chittering traditionally taking over parts of the quarry in the past to use for landfill. The current Shire landfill (previously part of the quarry) is now located on a separate lot, and the current Muchea 5 Quarry sits alongside it. The current pit area on Lot 301 is subject to an approved DA (reference P025/23) for landfill, including rehabilitation of the current pit area. The rehabilitation of the current pit area subject to the DA is set out in the "Site Rehabilitation Plan" within the "Environmental Management Plan" (SERS). Midland Brick's only obligation for the current pit area is to make slopes safe and stable in accordance with Department of Local Government, Industry Regulation and Safety (DLGIRS) requirements prior to handing over to the landowner (Demo Investment 3 Pty Ltd) for their use.

Midland Brick propose to continue clay extraction operations to the east of the existing pit, into an area not subject to the current landfill DA P025/23. As such, this Rehabilitation Management Plan sets out the rehabilitation commitments and completion criteria for the area to the east of the current pit area. The size of the area subject to this Rehabilitation Management Plan is approximately 3.5 hectares.

The Rehabilitation Management Plan has been prepared in accordance with the "Guidelines for the Management and Rehabilitation of Basic Raw Material Pits" prepared by the then Department of Environment and Conservation in 2008. This is the guideline recommended for use in the "State Planning Policy 2.4 – Planning for Basic Raw Materials Guidelines" (WAPC, 2021). It should also be noted that quarry operators are also obligated to rehabilitate and make safe all slopes in accordance with the Department of Mines, Industry Regulation and Safety (DMIRS) requirements under the *Work Health and Safety (Mines) Regulations 2022*.

1.2 Rehabilitation Objectives and Completion Criteria

The objectives and completion criteria for the Rehabilitation Management Plan relating to the area of extraction to the east of the existing pit area are listed in Table 2.1 below.

Table 2.1 – Rehabilitation Objectives and Completion Criteria

Objective	Completion Criteria	Responsibility
The decommissioned quarry slopes are safe and stable.	All recontoured slopes are safe and stable in compliance with DLGIRS requirements.	Midland Brick Pty Ltd
The decommissioned quarry is clean.	The decommissioned clay quarry areas are clean of rubbish and waste and equipment is removed.	Midland Brick Pty Ltd
Ensure water erosion is controlled within the post excavation surface.	A dam is created from the lowest part of the new pit area, and the surface is contoured to direct water into the dam.	Midland Brick Pty Ltd

The quarry void is filled and eventually compacted and recontoured to match the surrounding landscape.	Recontoured areas are compatible with the surrounding landscape.	Demo Investment 3 Pty Ltd
Spread the recontoured surface with topsoil.	The recontoured areas have topsoil spread across areas where pasture is to be established.	Demo Investment 3 Pty Ltd
Plant pasture across all recontoured and rehabilitated areas.	Pasture has been established across a majority of the rehabilitated area.	Demo Investment 3 Pty Ltd

2 Rehabilitation Methods

2.1 Recontouring

Recontouring to safe and stable slopes within commences with bulk earthworks. Generally, a large bulldozer will be used to form the basic new slope angle by removing the mine bench structure. This is done by pushing from the top bench. Survey markers are placed at set positions back from the face to indicate where the dozer is to work to. The dozer operator cuts the face down slice by slice until they have worked back to the markers. Each bench is recontoured in the same manner.

Contour banks will be used to control surface water runoff from the rehabilitated landform. The purpose of the contour banks is to reduce the effect of rain from causing excessive soil movement.

Water management will continue throughout recontouring, with water directed from disturbed areas into the basins located within the pit areas.

Final recontouring will take place when the landowner competes filling the void. It is the intention of Midland Brick to progressively hand areas no longer required for operations and for the landowner to commence fill once DLGIRS has signed off on Midland Brick's safety compliance. Midland Brick will complete mine closure documents as required by DLGIRS. These documents demonstrate to DLGIRS that slopes are recontoured to a safe and stable condition.

2.2 Site Clean Up

All wastes on site will be appropriately managed during and after operation of the extraction activities in accordance with the Waste Management Plan. They will either be recycled or taken to an approved waste disposal site. Rubbish will be stored in 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, and these are not stored on site.

After clay extraction activities have ceased in each area, all equipment will be removed from the site except for machinery required for recontouring.

2.3 Landfill

Decommissioned quarry areas will be rehabilitated by the landowner with the use of aggregate products and certified clean fill. The aggregates and records of the source of the fill material and its suitability for use as part of the site rehabilitation project will be maintained with the site records. The fill is deposited and managed by the owner of Lot 301.

2.4 Topsoil and pasture

Following the final land surface being contoured to be compatible with the existing natural landform of the area, topsoil will be added and soil ripped (if required) to facilitate pasture cultivation.

Topsoil will be retained onsite throughout the life of the operation. It will be used as the top layer of the rehabilitated surface to provide a substrate for pasture growth.

Pasture will be cultivated across the recontoured areas to establish groundcover. Pasture will also assist in erosion control, especially in areas which do not have native vegetation planted.

2.5 Timing

The timing for rehabilitation within the new extraction areas to the east will be dependant on a number of factors including market demand (which determines extraction rates), operational requirements (such as clay types, water management, and overburden availability), access requirements and water management.

The timing for recontouring and handing parts of the quarry over to the landowner for landfill will be dependent on requirements of both Midland Brick and the landowner.

3 Rehabilitation Actions

The rehabilitation management actions, responsibilities and timing are presented in Table 3.1 below.

Table 3.1 – Muchea 5 Quarry Rehabilitation Actions

ACTION	RESPONSIBILITY	TIMING
Remove all equipment and machinery not required for rehabilitation.	Midland Brick – Quarry Manager	At site decommissioning.
Undertake bulk earthworks to make the slopes safe and stable.	Midland Brick – Quarry Manager	When possible
Maintain water drainage throughout the site – direct water from the disturbed areas into the dam located within the pit area.	Midland Brick – Quarry Manager	Ongoing
Construct contour/interceptor banks on the recontoured surfaces to control erosion.	Midland Brick – Quarry Manager	During recontouring
Ensure slopes are safe and stable in accordance with DLGIRS requirements.	Midland Brick – Quarry Manager	During recontouring
Fill the void with fill to bring levels close to the pre-excavation levels.	Landowner (Demo Investment 3 Pty Ltd)	Progressively, as required
Undertake final recontouring using overburden to make slopes compatible with the surrounding landscape.	Landowner (Demo Investment 3 Pty Ltd)	At the completion of fill.
Spread topsoil over areas to be planted with pasture.	Landowner (Demo Investment 3 Pty Ltd)	Prior to planting.
Establish pasture across the recontoured parts of the site.	Landowner (Demo Investment 3 Pty Ltd)	Following final recontouring.

SCHEDULE OF SUBMISSIONS – P038/26 – LOT 301 WANDENA ROAD, MUCHEA

Agency Submissions			
Submitter	**Comment**	**Proponent Response**	**Shire Officer Response**
Department of Biodiversity, Conservation and Attractions (1st submission)	**CLAUSE 45(2)b(ii) – DEVELOPMENT APPROVAL – MUCHEA 5 QUARRY – PART LOT 301 WANDENA ROAD, LOWER CHITTERING** Thank you for providing the Swan River Trust (the Trust) with the opportunity to comment on the above development application. The application was received via the Department of Biodiversity, Conservation and Attractions (DBCA), Swan Region, on 16 June 2026. The proposal is being processed pursuant to Clause 45(2)b(ii) of the Metropolitan Region Scheme, as the proposed development is likely to affect waters in the Swan Canning development control area (DCA), being located within the Ellen Brook surface water sub-catchment. DBCA has assessed the application on behalf of the Trust, and you are advised that DBCA has no objection to the proposed development as it is considered unlikely to have any adverse impact on the DCA, subject to the implementation of the water management measures outlined in the application report (Landinsights 2026), including that all stormwater drainage is contained within the operation area. If you have any queries regarding this matter, please contact the officer above. Please quote the above reference number in all correspondence.	Noted.	**Officer recommendation:** Support. **Shire response:** DBCA raises no objection provided the advertised water-management measures are implemented, including containment of stormwater within the operational area. This directly addresses the potential downstream-water risk associated with the quarry.
Department of Biodiversity, Conservation and Attractions (2nd submission)	I have had a look through the flora and vegetation report and note that the subject area surveyed was only 0.68 hectares. The vegetation itself is recorded in a Completely Degraded condition with no threatened or priority flora recorded. The primary value of the stand of mature trees is the value to threatened black cockatoos. And of this habitat it appeared to only have value for potential nesting as the predominant species was *Eucalyptus accedens (*Powderbark Wandoo) which is not a primary foraging species for any of the three black cockatoo species known to occur in the vicinity. Four trees were identified as providing suitable nesting habitat but no known breeding (or evidence of) was recorded. Eight trees were identified as potential nesting trees in that one day they may form suitable hollows. Due to the small area and limited habitat value, it is unlikely that clearing of this area will have a local impact to threatened black cockatoo species. Replanting of suitable foraging nesting or roosting habitat in areas of the landholding not planned for resource extraction, could mitigate some of these impacts. The report recommended the project be referred to the Commonwealth National Environmental Protection Agency (New	Noted Noted, although please note that we purposefully surveyed an area a bit beyond where the proposed clearing will be. We only propose to clear 0.34ha, including one ‘suitable’ habitat tree and four ‘potential’ habitat trees and propose to retain the remainder of the trees surveyed. Noted As Midland Brick is not the landowner, we are not able to replant (or offset) on this property. However, we will consider any potential offset requirements during the Commonwealth referral and the DWER Clearing Permit application process. Noted. Midland Brick will submit a referral to the Commonwealth.	**Officer recommendation:** Support in part. **Shire response:** DBCA considers the vegetation completely degraded and the proposed clearing unlikely to cause a local impact on threatened black cockatoos. The proposed clearing is limited to 0.34 hectares, including one suitable and four potential habitat trees. Commonwealth referral and DWER clearing approval are separate statutory processes and should not be duplicated through a planning condition.

	name for DCCEEWW). DBCA have no comment on this requirement (no obvious significant impacts evident) however a precautionary approach would be to refer to allow the Commonwealth to determine if it represents a significant action under the EPBC Act.		
Department of Health	**PROPOSED DEVELOPMENT – CONTINUED OPERATION AND EXPANSION OF AN EXISTING EXTRACTIVE INDUSTRY (CLAY QUARRY) LOT 301 WANDENA ROAD, LOWER CHITTERING.** Thank you for your email dated 10 June 2026, requesting comment from the Department of Health (DoH) on the above proposal. As of 18 December 2025, the State Planning Policy 2.9 Water has replaced the Government Sewerage Policy 2019 and other supporting documents. DoH recognises that these changes will impact existing applications, including this proposal. **DoH position** ☐ No objection – no comments or advice to provide. ☒ No objection – with comments and/or recommended conditions and advice notes provided below. ☐ Do not support – reasons provided below, i.e. additional reports, studies, plans or other information that should be provided to determine public health risk / legislative compliance. **DoH comments** **1. Wastewater Management** The proposed lease is for another 20 years, and the proposal documentation refers to temporary toilet facilities for staff. This is later referenced as a portable toilet that can be quickly disassembled when the quarry works have finished and where wastewater is carted off site by a licensed service provider. The DoH **does not** support long term portable or temporary toilets as a permanent solution for onsite wastewater management. The DoH therefore recommend permanent toilet facilities/amenities are adequately provided for staff and others who may use these. It is noted the lot is within a Sensitive Water Resource Area and will require a secondary treatment system. As this is an isolated location with minimal use, a site and soil evaluation will not be required, however, the permeability rating will need to accommodate heavy clay type soils for onsite disposal of effluent. The onsite wastewater treatment system will require approval from the Shire of Chittering, Health Services. **2. Drinking Water** All drinking water provided on site must meet the health-related requirements of the Australian Drinking Water Guidelines 2011 . **3. Industrial Interface** Given the dust suppression and mitigation measures proposed and the distance of the nearest sensitive receptor being 540m away, and dust generation during earth works is addressed with operations being conducted on an intermittent basis and located in a deep pit and shielded by vegetation that has been retained and planted years	Our application does not refer to a proposed lease for 20 years. The application as stated is for a 10-year approval. Our application refers to the temporary toilets being placed on the site. Operations on the site are intermittent and not a daily occurrence. The temporary toilets will therefore only be used occasionally. We do not support the requirement for permanent toilets to be made available on site. It is not necessary for the reasons above, and is not consistent with our other operations, including our neighbouring quarries. Noted. Noted.	**Officer recommendation:** Support in part. **Shire response:** The application is for 10 years, not 20. Given the intermittent operation, permanent amenities are not considered necessary as a planning requirement, provided suitable facilities are available whenever work occurs. The Department of Health accepts that dust can be adequately managed through the proposed controls, pit setting, vegetation and separation. Separate health approvals should not be duplicated as planning conditions.

	ahead, health impacts arising from dust generated by the clay quarrying activity can be sufficiently mitigated. Should you have any queries or require further information, please contact System Performance on 9222 2000 or eh.eSubmissions@health.wa.gov.au.		
Main Roads	Thank you for the opportunity to provide comment on this proposed development on Wandena Road in the Shire of Chittering. Following a review of the application, we do not foresee any significant impacts to the Main Roads WA road network as a result of the proposal. Based on the information provided in the transport assessment, which indicates there will be no net increase in traffic due to the phasing of operations between the two Wandena Road quarries, Main Roads has no objection to the application. We apologise for the delayed response and for providing our comments after your requested date of 22 July 2026	Noted.	**Officer recommendation:** No change required. **Shire response:** Main Roads raises no objection and accepts the transport assessment conclusion that transferring activity from the former Muchea 3 quarry will result in no net increase in traffic. No contrary technical evidence has been provided. Traffic should remain within the intensity assessed and advertised.
DWER	***RE: Application No: O26168633 - OPERATION AND EXPANSION OF EXISTING EXTRACTIVE INDUSTRY - LOT 301 WANDENA ROAD, LOWER CHITTERING*** Thank you for referring the above development application to the Department of Water and Environmental Regulation (the Department). While the Department does not object to the proposed expansion given the operations and management measures are established, key issues and recommendations are outlined below: Under section 51C of the *Environmental Protection Act 1986* (EP Act), clearing of native vegetation is an offence unless: • it is undertaken under the authority of a clearing permit; • it is done after the person has received notice under Section 51DA(5) that a clearing permit is not required; • the clearing is subject to an exemption. Exemptions for clearing that are a requirement of written law, or authorised under certain statutory processes, are contained in Schedule 6 of the EP Act. Exemptions for low impact routine land management practices outside of environmentally sensitive areas (ESAs) are contained in the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations). A clearing permit is required if clearing of native vegetation is proposed, noting no exemptions apply. Application forms and additional information are available from Native vegetation clearing permits | Western Australian Government. In the event there are modifications to the proposal that may have implications on aspects of environment and/or water management, the Department should be notified to enable the implications to be assessed.	Noted.	**Officer recommendation:** Noted. **Shire response:** DWER raises no objection. Native vegetation clearing approval is a separate statutory process and should not be converted into a planning condition. Any material change to the approved development may require a further planning application and renewed agency consultation where relevant.
Chittering Land Care	1. There is a low risk of acid sulphate soils according to the risk assessment but it does express itself in Wandena Creek North and South as very low pH and poor water quality but	Noted.	**Officer recommendation:** Support in part. **Shire response:** Dewatering is not proposed and no evidence

	this should not be construed as a reason for Midland Brick not to go ahead. 2. The hydrology of the area can be influenced by summer storms which are more frequent than realised. Bunds have been known to breach at these clay pit sites hence dewatering or breaches need to be reported to the Shire. Any deliberate dewatering needs the permission of the Shire and possibly DWER. Any flooding of the site will have consequences for the Shire's landfill site. 3. It is unclear how the filling of the void under the Works Agreement licence agreed to be DWER and the Shire for Adrian Brajkovich will be undertaken concurrently any risks associated with it particularly if asbestos and tyres will be involved in the landfill waste accepted on site. This may also interfere with the hydrology of the site. 4. The clearing permit will need to be assessed separately when the time comes.	There have been no breaches to bunds and no water runoff from the Midland Brick quarries. Dewatering is not proposed in this application. Consideration of the landfill operation, including asbestos and tyres, is not part of this application. The landfill operation is required to have its own Water Management Plan and water management requirements in accordance with their Shire and DWER approvals. A Clearing Permit application will be submitted by Midland Brick if clearing of native vegetation is proposed.	establishes a past bund failure attributable to this quarry. The risk of uncontrolled discharge is nevertheless directly related to extraction and warrants an operational control. Landfill activities and clearing authorisation are governed by separate approvals and should not be duplicated here.

Landowner Submissions			
Submitter	**Comment**	**Proponent Response**	**Shire Officer Response**
Land Owner 1 **Lower Chittering**	1. Clay products were used to build my home. I do not wish to stop others building in brick. 2. However when my home was build the quarry operator did make some effort to clean spill off the road. That effort has not continued and new low railings now collect rubbish leaves and stick adding to build up of spill. I believe a regular road sweeper activity is needed by the quarry operator is needed. to help road safety.	Noted. It appears that the respondent is referring to the incorrect site - the "Muchea 3" quarry located south of Muchea East Road. The "new low railings" referred to are the railings installed by the Shire opposite the entrance to the Muchea 3 Quarry, located further south along Wandena Road. Operations have now ceased at the Muchea 3 Quarry. Please note the portion of Wandena Road adjoining the "Muchea 5" Quarry subject to this application was only sealed in recent years (2023) and the site entrance sealed in 2025. Based on a review of aerial photography, there appears to be minimal material on Wandena Road from the site entrance. It is not considered necessary to sweep the road.	**Officer recommendation:** Support in part. **Shire response:** Road cleanliness and safety are relevant planning considerations. The available information suggests the submitter may be referring to another quarry entrance and does not demonstrate recurring spillage from this site. A fixed sweeping program would therefore be disproportionate. It is reasonable, however, to require prompt removal of material attributable to the approved operation.
Land Owner 2 **Lower Chittering**	I am formally submitting my objection as a resident and ratepayer to the Operation and Expansion of Existing Extractive Industry- Lot 301 Wandena Road, Lower Chittering.	Noted.	**Officer recommendation:** Support in part. **Shire response:** The landfill approval is separate and does not

	My Objection for the expansion is based in accordance with the Development Approval granted in 2023, the proposal is for the landform to be returned back to its original profile and land used for agricultural purposes.	It should be noted that the 2023 application referred to is for the landfill of the decommissioned pit areas. This application is to formalise the approvals for the existing Muchea 5 quarry (as up until now it has been operation in accordance with existing use rights) and to formally apply for the continuation of the extraction to the east. This application does not change any aspect of the 2023 landfill application.	prevent assessment of continued extraction. Progressive rehabilitation is acceptable where the obligations are fixed by the approval. The 500-metre distance is measured from the extraction operating area to sensitive land uses, and no dwelling is identified within that distance. Asbestos, fill acceptance and the landfill term fall under the separate approval. The approval runs with the land, so compliance does not depend on private arrangements between operators.
	This expansion would completely contradict the original approval. The applicant presents the project under the guise of site rehabilitation and land restoration. However proposing to expand and deepen the exact same pit by an additional 3.5 hectares while simultaneously claiming to restore it is entirely counterproductive and logically flawed. True rehabilitation requires stabilising, filling and revegetating a finite footprint to return it to productive use. Digging deeper and wider into the landscape actively undoes any restoration progress, prolonging site disturbance and resetting the environmental recovery timeline. Combining active resource extraction with land rehabilitation within the same operational space creates a continuous cycle of land degradation rather than genuine, phase closure.	We do not agree that the application has been presented under the guise of site rehabilitation. Our application focuses on the operation and makes it clear that it will continue to be used for clay extraction. Rehabilitation is discussed where appropriate in the application, but is not the overarching justification for the application. Stabilisation and filling is exactly what has already been approved for the landfill operation. The expansion to the east will not 'undo' any landfill and rehabilitation of the existing footprint undertaken by the landowner. It should be noted that the continuation of clay extraction to the east has always been planned for the site (hence the Basic Raw Materials mapping in SPP 2.4 and the planting of screening trees around the resource extent). The rehabilitation is progressive while the site is being extracted. This is entirely feasible and practical, and has been undertaken at other quarries operated by Midland Brick and the same landfill operator.	
	Upon reviewing the planning documentation, environmental reports and site mapping, there are several critical contradictions, regulatory loopholes and misrepresentations. The proposal claims that the standard 500 metre buffer zone ensures there will be no adverse environmental or visual impacts on local residents however the applicant's own operational mapping directly contradicts this claim by showing the 500 metre separation radius extending beyond the subject site boundaries and encroaching onto neighbouring private properties. The operational buffer distance must be accommodated entirely within the proponent's own land boundaries. Forcing neighbouring private landholders to absorb the site's operational impact radius without consent or compensation is inappropriate and invalidates the claim that nearby property and residents will remain unaffected.	This is not correct, the application does not state to have "no adverse environmental or visual impacts" but it provides an Environmental Impact Assessment to support the conclusion that there is a low risk of impact to amenity. There are no contradictions made in the application. The intention of Figure 4.9 is not to demonstrate 'no adverse environmental or visual impact', but to demonstrate that the operation meets the minimum recommended separation distance as required by EPA Guidance Statement No. 3. As defined by GS3, the "separation distance" is "the shortest distance between the boundary of the area that may potentially be used by an industrial land use, and the boundary of the area that may be used by a sensitive land use." "Industrial land use" is defined as all operation associated with the extractive industry (including extraction, stockpiling etc). The "sensitive land use" is defined in Guidance Statement No. 3 as "Land uses considered to be potentially sensitive to emissions from industry and infrastructure include residential developments2, hospitals, hotels, motels, hostels, caravan parks, schools, nursing homes, child care facilities, shopping centres, playgrounds, and some public buildings." As such, the separation distance (in areas not including residential zoned land) is measured from the boundary of the industrial activity to the boundary of the sensitive land use (in this case the residential structure), not the neighbouring property boundary. There is also no requirement for the separation distance to be contained entirely	

		within a proponent's boundaries. The proposed operation is well over 500m from the existing residential structures on nearby properties and associated structures.	
	While Midland brick is listed as the entity conducting clay extraction, the planning documents confirm they hold no responsibility for filling, grading or rehabilitating the pit. Rehabilitation via fill deposition falls entirely to the landowner Demo Investment 3 Pty Ltd and/or third party operators. Splitting the extraction and rehabilitation responsibilities between separate entities creates a significant compliance loophole leaving the Shire and local community with no single accountable party if long-term land restoration stalls or fails.	There is no compliance 'loophole' as each entity have their own Development Approvals as required by legislation. Long term restoration is linked to the conditions of the DA. A longer-term DA can be issued by the Shire if long term rehabilitation is to be included.	
	The overarching justification for this development is returning the land to its original, productive agricultural and pastoral state. However the documentation includes conditional language stating that topsoil will be reinstated to establish pasture 'if feasible'. The conditional qualifier removes any guarantee that the land will ever be restored to its pre-mining agricultural capability, leaving the door open for permanent environmental degradation. The reliance on importing inert building waste over an extended 20 year rehabilitation window introduces prolonged heavy vehicle traffic, dust and potential groundwater risks. This extension time frame significantly outlasts the estimated 10 year extraction phase subjecting nearby residents to decades of continual industrial landfilling rather than a timely return to local pasture. Given the direct spatial encroachment onto adjoining titles, the reliance on conditional restoration language and the lack of binding operational accountability between the miner and landowner this proposal poses an unreasonable burden on neighbouring properties and the surrounding environment. The Shire will already be preparing for the closure and eventual rehabilitation of the Muchea landfill facility, aiming to reclaim that land and transition the corridor back towards its intended rural purpose. Approving a new, 20 year private landfill and fill-deposition operation in the immediate vicinity directly contradicts this broader planning objective. Rather than allowing the corridor to recover and transition as intended, this proposal simply replaces one long-term waste deposition site with another, prolonging industrial traffic, dust and land disturbances for another two decades.	This is not correct, the long term justification is the extraction of basic raw materials, and this is made clear in this application. This is not correct, the report states that pasture will be established if feasible, however the Shire should refer to the "development Application: Fill and Rehabilitation of Clay Quarry" (Rowe Group, 2023) for further detail. The landfill Development Approval is a separate approval and has already been issued. There is no conditional restoration language used in the application. A Rehabilitation Management Plan has been provided with this application, consistent with the existing DA already issued for the landfill. A DA has already been issued by the Shire for the landfill and recontouring. This comment is referring to the landfill application which has already been approved by the Shire, and is not relevant to this application.	
Land Owner 3	My husband and I oppose this development for a number of factors; the first and main objection is depicted on Midland Bricks own map (below) referred to on Page 2 Figure 1.1 of their P038-26 Cover letter to Melinda Prinsloo dated 9th March 2026 where it clearly shows a large encroachment into our property of far less than the required 500m separation distance.	As defined by EPA Guidance Statement No. 3, the "separation distance" is "the shortest distance between the boundary of the area that may potentially be used by an industrial land use, and the boundary of the area that may be used by a sensitive land use." "Industrial land use" is defined as all operation associated with the extractive industry (including extraction, stockpiling etc). The	**Officer recommendation:** Support in part. **Shire response:** Extension of the mapped 500-metre area across adjoining titles does not establish non-compliance; the relevant measure is to a sensitive land use. Main Roads accepts the assessment of no net traffic increase, based on up to 30 laden trucks (60 truck movements total) on intermittent carting days. DBCA

	Second factor is the number of trucks (60 per day) travelling down Wandena Road to Muchea East Rd, which is already marked as a black spot due to a significant number of accidents and multiple near misses. This intersection has had been reported many times with numerous complaints from motorists travelling along Muchea East Rd to Tonkin Hwy, as there have been many vehicles drive straight through the intersection as it is not well sign posted. I understand recently Main Roads and Shire of Chittering got involved proposing a number of potential solutions; including a roundabout, reducing speed strips and more signs. Third factor is our block in particular and the neighbourhood is a well-known nesting ground for the endangered black and red tail cockatoos. Increased noise by trucks travelling down Wandena Rd will have the following effects on our local protected wildlife: • **Stress and Vigilance:** Persistent loud sounds increase stress hormone levels and make brooding adults more alert or prone to flushing from the nest. • **Communication Interference:** Black cockatoos rely on distinct vocal contact calls; high ambient noise can mask these calls between mates or disrupt chick-begging behaviour. • **Habitat Preference:** Conservation guidelines for local councils and developers consistently recommend placing artificial watering stations, roost protection zones, and buffer areas away from loud urban infrastructure and heavy traffic. Fourth factor is any operation and expansion of this nature with a 10 plus year lifespan will have a devastating and negative impact on the ambience and peaceful living that Chittering offers residents to enjoy what this beautiful *rural area* is known for.	"sensitive land use" is defined in Guidance Statement No. 3 as "Land uses considered to be potentially sensitive to emissions from industry and infrastructure include residential developments2, hospitals, hotels, motels, hostels, caravan parks, schools, nursing homes, child care facilities, shopping centres, playgrounds, and some public buildings." As such, the separation distance (in areas not including residential zoned land) is measured from the boundary of the industrial activity to the boundary of the sensitive land use (in this case the residential structure). The proposed operation is well over 500m from the existing residential structures on nearby properties and associated structures. The 500m setback area only encroaches minimally onto a few nearby properties. The maximum number of trucks on carting days will be 30, not 60. Also, carting will be on average 4 days per month, so there will be large periods of time where there will be no truck movements associated with this operation. Midland Brick has previously contributed $40,000 to the Shire for the sealing and widening of Wandena Road leading to the intersection. It is expected that any signage improvements or traffic management improvements (such as lower speed limits) can be addressed by the Shire. There will be no increase in traffic movements along Wandena Road, as the Midland Brick operations at the Muchea 3 quarry has ceased. The eastern Muchea precinct has long been identified by State and Local Government as a potential industrial area. The site is already used for extractive industry, and this application is solely for the continued use of the site. If the area is already a well-known nesting ground for Black Cockatoos despite the area being used for extractive industry for many decades, then the continued use of the site is unlikely to affect this. The eastern Muchea precinct has long been identified by State and Local Government as a potential industrial area. It has also long been used for extractive industry (since the 1960's).	considers the limited clearing unlikely to cause a local black cockatoo impact. The amenity concerns are relevant, but the available technical evidence supports management through defined operating limits rather than refusal.
Land Owner 4	I dont have a problem with the Extraction Pit being extended. As long as we cannot see if from our property, plus no Asbestos to be "dumped" and/or relocated in that entire site.	Noted. Visual management is in place, and screening vegetation already well established. Landfill is a separate operation.	**Officer recommendation:** Support in part. **Shire response:** The submitter supports the quarry extension subject to maintaining visual screening. Existing vegetation is an established mitigation measure and should be retained where shown on the

			approved plans. Asbestos disposal is not part of the advertised quarry proposal and is governed through the separate landfill approval.

Note: Comments are as per original submission received by the Shire.