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Our Ref: 21999\_R01\_Haerses Road Quarry MOD 5\_Mod Report\_v2

4 January 2022

Jessie Evans  
Director, Resource Assessments  
Department of Planning, Industry and Environment

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Dear Jessie

**RE: Haerses Road Quarry Modification 5 (DA 165-7-2005 MOD 5)  
Relocation of Site Office, Workshop and Weighbridge**

## 1.0 Introduction

Dixon Sand (No. 1) Pty Ltd (Dixon Sand) is seeking a minor modification to DA 165-7-2005 for the Haerses Road Quarry at Maroota in New South Wales (NSW). The Proposed Modification is sought pursuant to section 4.55(1A) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and involves the relocation of an approved site office, workshop and weighbridge, and sandstone cutting activities both within the extraction area and relocated workshop.

This Modification Report has been prepared in support of the Proposed Modification, having regard to the *State significant development guidelines – preparing a modification report* (July 2021).

## 1.1 Background and Approval History

Dixon Sand owns and operates the Haerses Road Quarry (the Quarry), an established sand quarry located off Wisemans Ferry Road, at Maroota (refer to **Figure 1.1**). The Quarry is wholly located within the Hills Shire Local Government Area.

Dixon Sand owns and operates two additional sand quarries in the Maroota area: the Old Northern Road Quarry and the Laughtondale Gully Road Quarry, both located to the north of the Quarry. The combined operations of Dixon Sand supply concrete sand and specialty sands to the Sydney metropolitan market.

On 14 February 2006, the former Minister for Planning granted development consent for the Haerses Road Quarry under DA 165-7-2005. The development consent has been modified on four occasions, most recently on 23 July 2021. **Table 1.1** below summarises the previous modifications to the development consent.

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**Table 1.1 Modifications to DA 165-7-2005**

Modification	Approval Date	Description
MOD 1	22 January 2018	<ul style="list-style-type: none"> <li>Extending the life of the Quarry until 2046</li> <li>Extending the approved extraction area to into a new Friable Sandstone Extraction Area</li> <li>Importation of Virgin Excavated Natural Material (VENM) and Excavated Natural Material (ENM) for blending/re-sale and rehabilitation purposes</li> <li>Conversion of an existing house to a site office and construction of a new workshop, weighbridge and associated carparking area</li> <li>Use of mobile crushers and wet and dry processing plant</li> <li>Direct to market product transport</li> </ul>
MOD 2	29 January 2019	Minor modification to buffer zone within the approved processing and stockpiling area
MOD 4*	30 June 2021	Revised extraction sequencing in the Friable Sandstone Extraction Area
MOD 3*	23 July 2021	<ul style="list-style-type: none"> <li>Increasing the annual extraction rate to 495,000 tonnes per annum (tpa)</li> <li>Increasing daily truck movements to 180 per day</li> <li>Increasing VENM/ENM importation to 250,000 tpa</li> <li>A minor northern extension to the approved Tertiary Sand Extraction Area</li> <li>Changes to site plant and equipment</li> <li>Increasing the number of employees to 16</li> </ul>

\* MODs 3 and 4 were determined out of sequence

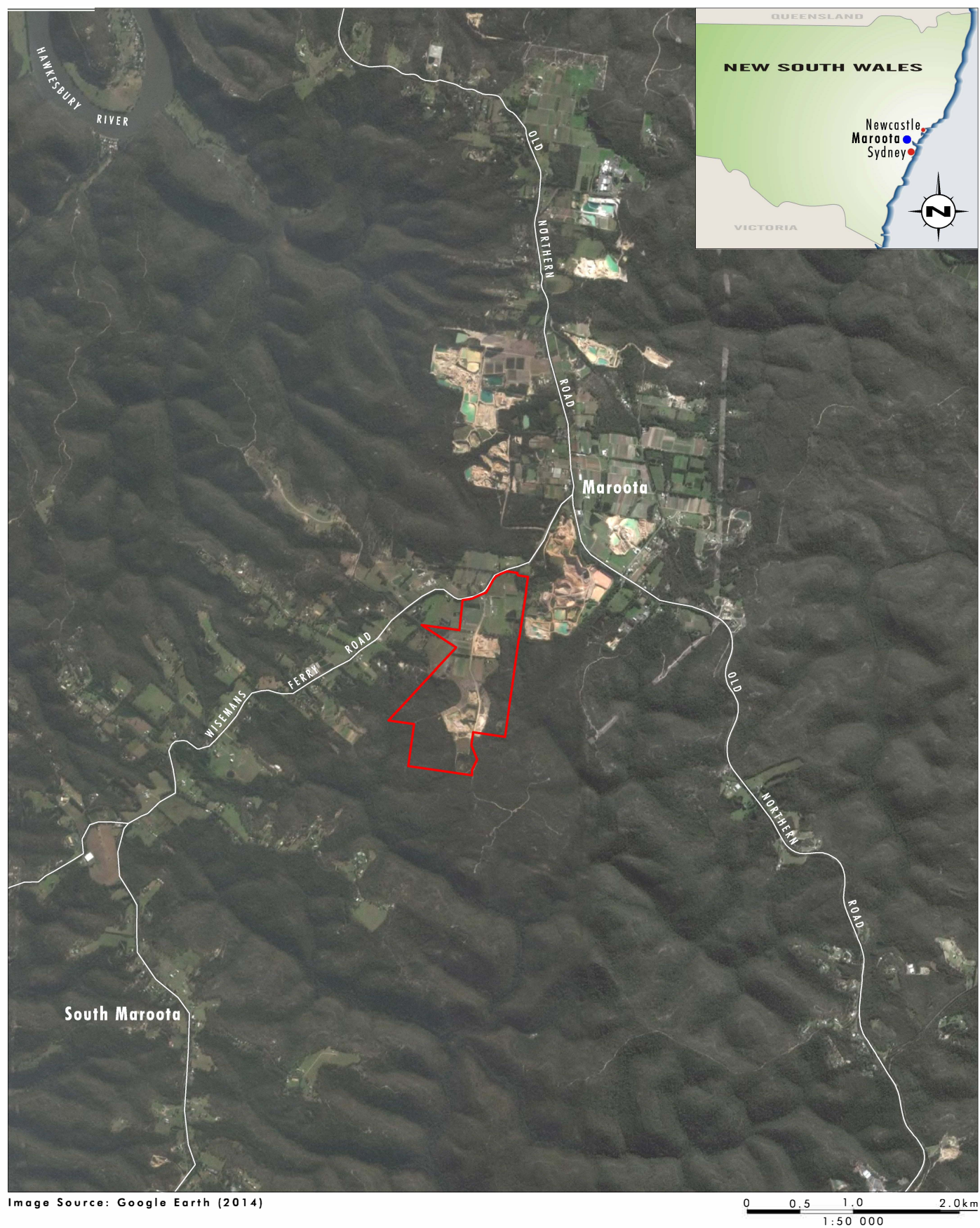
## 1.2 Approved Operations

The approved development, as modified, includes:

- carrying out quarrying operations until 14 February 2046
- extracting up to 495,000 tpa of Tertiary Sand and Friable Sandstone in stages
- dispatching a combined total of up to 495,000 tpa of quarry products by road, comprising:
  - up to 190,000 tpa dispatched to Old Northern Road Quarry, and
  - up to 495,000 tpa dispatched direct to market
- receiving up to 250,000 tpa of VENM and ENM for blending and rehabilitation purposes
- up to 180 truck movements per day (combined inbound and outbound), with no more than 20 between 6.00 am and 7.00 am
- establishment of a site office, workshop, weighbridge and associated carparking area
- construction and use of ancillary infrastructure, including internal haul roads, water management infrastructure and acoustic bunds
- on-site mobile crushing, screening and wet processing
- upgrades to internal roads and the intersection of Haerses Road with Wisemans Ferry Road
- progressive rehabilitation of the Quarry site to either Class 4 agricultural land or native vegetation.

The key elements of the approved development described above are presented along with the Proposed Modification in **Figure 2.1**.

A consolidated description of the modified development (incorporating MOD 5) is provided in **Appendix A**.



# Legend

Haerses Road Quarry Site

FIGURE 1.1  
Locality Map



## 2.0 Proposed Modification

### 2.1 Site Office, Workshop and Weighbridge Relocation

Dixon Sand proposes to relocate the site office, workshop and weighbridge from their approved location on the corner of Wisemans Ferry Road and Haerses Road (Lot 170 DP 664766) to the south, in an area adjacent to Haerses Road (Lot 177 DP 752039) and referred to hereafter as the proposed relocation area, as shown in **Figure 2.1**.

The workshop, as it is currently approved, is to be housed within a shed structure with a floor area of approximately 480 m<sup>2</sup> plus awnings. Dixon Sand proposes to increase the floor area of the workshop to approximately 1,150 m<sup>2</sup> plus awnings. The final design and dimensions of the workshop shed will be confirmed following detailed engineering design.

Dixon Sand no longer proposes to convert the existing residence on Lot 170 into a site office, as approved under MOD 1 (refer to **Table 1.1**). Instead, Dixon Sand proposes to house both the site office and weighbridge office in detached site sheds near the relocated workshop (refer to **Figure 2.1**).

Consistent with the Approved Operations, the site office, workshop and weighbridge office will have associated hardstand areas, driveways and a gravel car parking area with 12 parking bays.

The proposed relocation area for the site office, workshop and weighbridge is wholly contained within the approved Tertiary Sand Extraction Area. As such, the Proposed Modification will not involve any additional surface disturbance. The relocated site office, workshop and weighbridge facilities will be constructed after the sand resource in this area (Stage 2) has been extracted. The proposed relocation area will then be backfilled and compacted to meet geotechnical engineering specifications.<sup>1</sup>

The Proposed Modification is expected to result in reduced noise and visual impacts associated with the construction and use of the site office, workshop and weighbridge, with the proposed relocation area now approximately 665 m from the nearest sensitive receiver on Wisemans Ferry Road (R21) (compared to the approved location, which is 118 m from the nearest sensitive receiver (R2)). The Proposed Modification would also eliminate the need to install a new transformer, since an existing low voltage distribution connection point is available at the proposed relocation area.

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<sup>1</sup> Consistent with approved operations, this area may be backfilled with imported VENM/ENM, overburden and/or silt from the wet processing plant



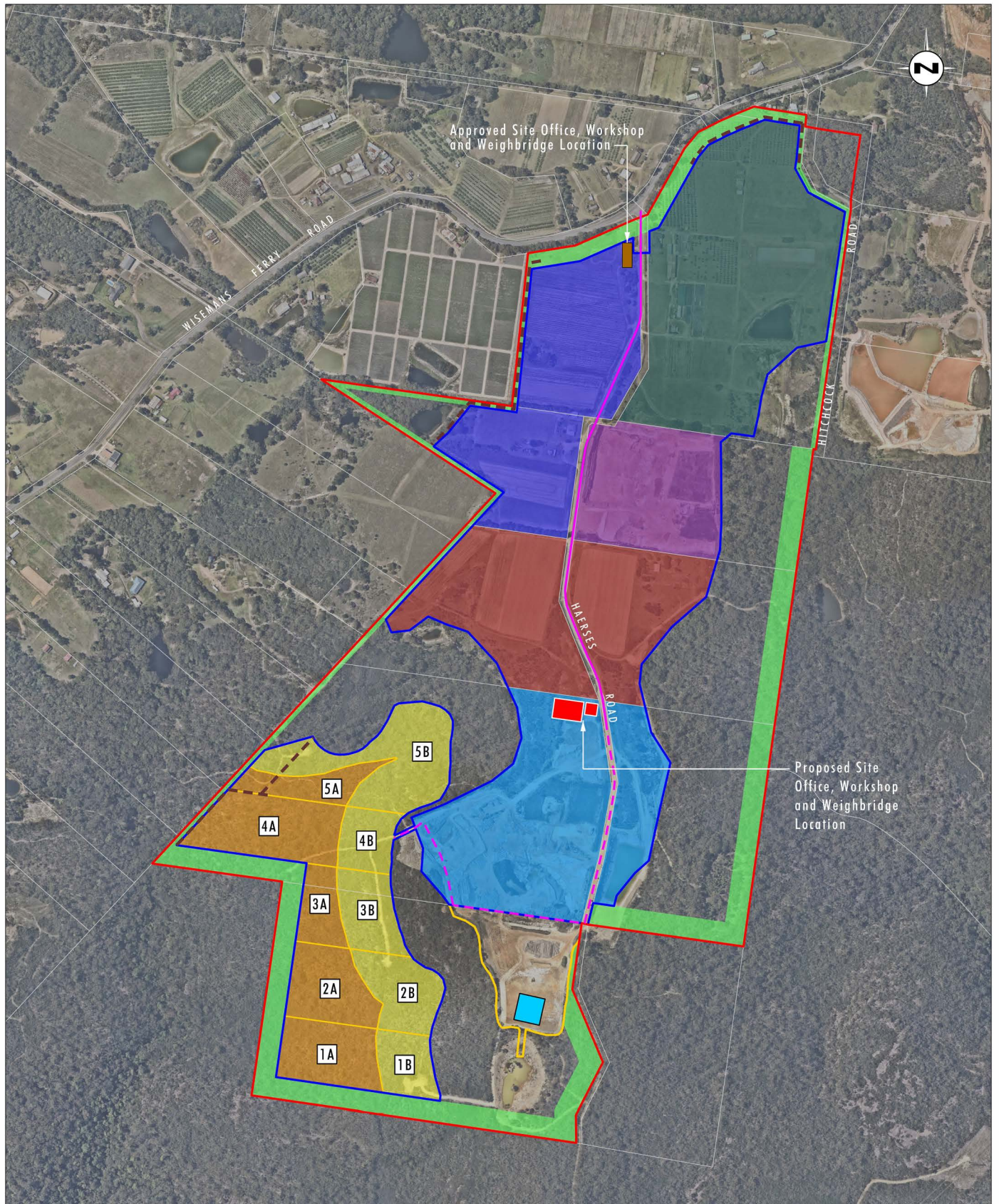


Image Source: Nearmap (Dec 2018)

Data Source: Mc Kinlay Morgan & Associates Pty Ltd (2019)

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### Legend

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|--|---|--|
| <span style="border: 2px solid red; padding: 2px;"> </span> Haerses Road Quarry Site                                 | <span style="background-color: #800080; border: 1px solid black; padding: 2px;"> </span> Tertiary Sands Extraction Area Stage 1 | <span style="border-bottom: 2px solid magenta;"> </span> Sealed Access Road  |
| <span style="border: 2px solid yellow; padding: 2px;"> </span> Processing and Stockpiling Area                       | <span style="background-color: #00BFFF; border: 1px solid black; padding: 2px;"> </span> Tertiary Sands Extraction Area Stage 2 | <span style="background-color: red; border: 1px solid black; padding: 2px;"> </span> Proposed Site Office, Workshop and Weighbridge Location |
| <span style="border: 2px solid green; padding: 2px;"> </span> Buffer Zone  | <span style="background-color: #8B0000; border: 1px solid black; padding: 2px;"> </span> Tertiary Sands Extraction Area Stage 3 |  |
| <span style="border: 2px solid blue; padding: 2px;"> </span> Approved Extraction Area                                | <span style="background-color: #4169E1; border: 1px solid black; padding: 2px;"> </span> Tertiary Sands Extraction Area Stage 4 |  |
| <span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span> Sandstone Extraction Area A | <span style="background-color: #3CB371; border: 1px solid black; padding: 2px;"> </span> Tertiary Sands Extraction Area Stage 5 |  |
| <span style="background-color: #FFA500; border: 1px solid black; padding: 2px;"> </span> Sandstone Extraction Area B | <span style="background-color: #8B4513; border: 1px solid black; padding: 2px;"> </span> Site Office, Weighbridge and Workshop  | <span style="border-bottom: 2px dashed magenta;"> </span> Indicative Unsealed Haul Road  |
| <span style="border: 1px solid black; padding: 2px;">1</span> Extraction Cell Number                                 | <span style="border-bottom: 2px dashed brown;"> </span> Approved Acoustic Bund  |  |
| <span style="background-color: #00CED1; border: 1px solid black; padding: 2px;"> </span> Wet Processing Plant        |   |  |

FIGURE 2.1

Proposed Modification



## 2.2 Sandstone Cutting

Dixon Sand also proposes to carry out sandstone cutting activities, both within the approved Friable Sandstone Extraction Area and in the relocated workshop. Within the extraction area, initial sandstone cutting will occur instead of dozer ripping to produce large blocks of sandstone using a hydraulic saw attachment fitted to the excavator. Noise generated by the excavator and saw attachment is expected to be equivalent to or less than that generated by approved dozer ripping within the extraction area (see **Section 5.0**).

Within the workshop, Dixon Sand proposes to install and operate up to three stone cutting saws for final cutting. Based on the noise levels of the saws being comparable to other noise sources at the Quarry, the separation distance to sensitive receivers and their enclosure within the workshop shed, noise generated by the saws is not expected to be discernible at privately-owned receivers. Dixon Sand will design, engineer and construct the shed structure to ensure that it provides the necessary noise attenuation to maintain compliance with existing noise criteria under DA 165-7-2005 (see **Section 5.0**). Sandstone cutting undertaken in the relocated workshop will be limited to wet cutting only, to suppress dust. Dixon Sand also proposes to use the workshop for storage of sandstone material and products.

No other changes to approved operations (as outlined in **Section 1.2** above) are proposed.

## 3.0 Statutory Context

### 3.1 Approval Pathway

The Proposed Modification is sought under section 4.55(1A) of the EP&A Act on the basis that the assessment of environmental impacts in this Modification Report (see **Section 5.0**) has concluded that the modification is of minimal environmental impact.

Additionally, the development as it is proposed to be modified is considered to be ‘substantially the same’ as the development which was last modified under section 75W of the EP&A Act, for the following reasons:

- no changes are proposed with respect to the key elements of the approved development, such as the approved quarry life, annual extraction rate, extraction methods or trucking movements
- the proposed relocation area for the site office, workshop and weighbridge is wholly located within the approved disturbance area of the Quarry
- the proposed relocation of the workshop and weighbridge is expected to reduce amenity impacts (including noise and visual impacts) for sensitive receivers along Wisemans Ferry Road
- the proposed sandstone cutting activities are considered to be generally consistent with approved extraction and processing activities (including mobile crushing and screening), and are not expected to result in any discernible noise or air quality impacts, relative to approved operations.

### 3.2 Mandatory Considerations

Under section 4.55(3) of the EP&A Act, in determining an application for the modification of a development consent, the consent authority must take into consideration such matters referred to in section 4.15(1) as they are of relevance to the development which is the subject of the application. These mandatory matters for consideration, and the sections where they are addressed in this Modification Report, are outlined in **Table 3.2**.

**Table 3.2 Mandatory Matters for Consideration**

Matters for Consideration	
the provisions of - (i) any environmental planning instrument	See <b>Appendix C</b>
(ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and	See <b>Appendix C</b>
(iii) any development control plan,	Not applicable based on SSD provisions
(iiia) any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4	Not applicable
(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph),	No additional mandatory considerations applicable to the Proposed Modification
(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality	See <b>Section 5.0</b>
(c) the suitability of the site for the development,	The Proposed Modification involves a minor amendment to the internal layout of an approved State significant sand quarry, within an area characterised by extractive industry (amongst other land uses). The site is considered suitable for the development as it proposed to be modified.
(d) any submissions made in accordance with this Act or the regulations	This is a matter for consideration by the consent authority, in the event the application is publicly exhibited.
(e) the public interest	See <b>Section 6.0</b>

In addition, section 4.55(3) provides that a consent authority must take into consideration the reasons given by the original consent authority for the grant of the consent that is sought to be modified.

In granting consent for DA 165-7-2005, the Minister's delegate concluded that the likely cumulative impacts of the development and other extractive industries in the locality were acceptable and the development was able to be operated in accordance with applicable environmental standards and criteria. Dixon Sand will continue to carry out the development, as it is proposed to be modified, in accordance with the modified conditions of consent and in compliance with existing noise and air quality criteria. Consequently, the Proposed Modification is considered to be consistent with the reasons for the grant of the consent.



### 3.3 Other Statutory Approvals

#### Building Certification

The structural adequacy of the relocated site buildings will be certified in accordance with the relevant requirements of Part 6 of the EP&A Act.

#### Roads Act 1993

The establishment of a new vehicular access point off Haerses Road may require an approval from the Hills Shire Council (Council) under section 138 of the *Roads Act 1993*. This access point will not be sealed, but will be laid with recycled road base material. Dixon Sand will consult further with Council and will obtain any necessary approvals prior to undertaking any road works within the Haerses Road reserve.

#### Local Government Act 1993

The proposed relocation of staff amenities will require the installation of an on-site sewage management facility (e.g. Biocycle septic or similar) in the vicinity of the proposed relocation area. Dixon Sand will comply with all relevant Council requirements for the installation and maintenance of this system and will obtain any necessary approvals under section 68 of the *Local Government Act*.

No other statutory approvals are required for the Proposed Modification. A detailed statutory compliance table is included in **Appendix C**.

### 4.0 Engagement

#### 4.1 Agency Consultation

Dixon Sand sought the Department's advice regarding the proposed approval pathway and approach to assessment for MOD 5 in November 2021. The Department did not raise any concerns in this regard, however, the Department noted that further details may be required as part of the assessment process.

Dixon Sand also notified the Hills Shire Council of the Proposed Modification on 22 December 2021.

#### 4.2 Community Consultation

Dixon Sand provided a briefing on the Proposed Modification at the Community Consultative Meeting held on 10 November 2021. No specific comments or concerns were raised in relation to the proposal.

### 5.0 Assessment of Impacts

The Proposed Modification will relocate the site office, workshop and weighbridge such that it is further away from the closest sensitive receivers, relative to its approved location (refer to **Figure 5.1**). The approved location is approximately 118 m from the closest receiver (R2). The proposed relocation area is approximately 665 m from the closest receiver (R21).

Consequently, the Proposed Modification is expected to result in reduced impacts, no change in impacts, or minimal change in impacts, for all key environmental aspects of the development. **Table 5.3** below summarises the assessment of likely environmental impacts associated with the Proposed Modification.



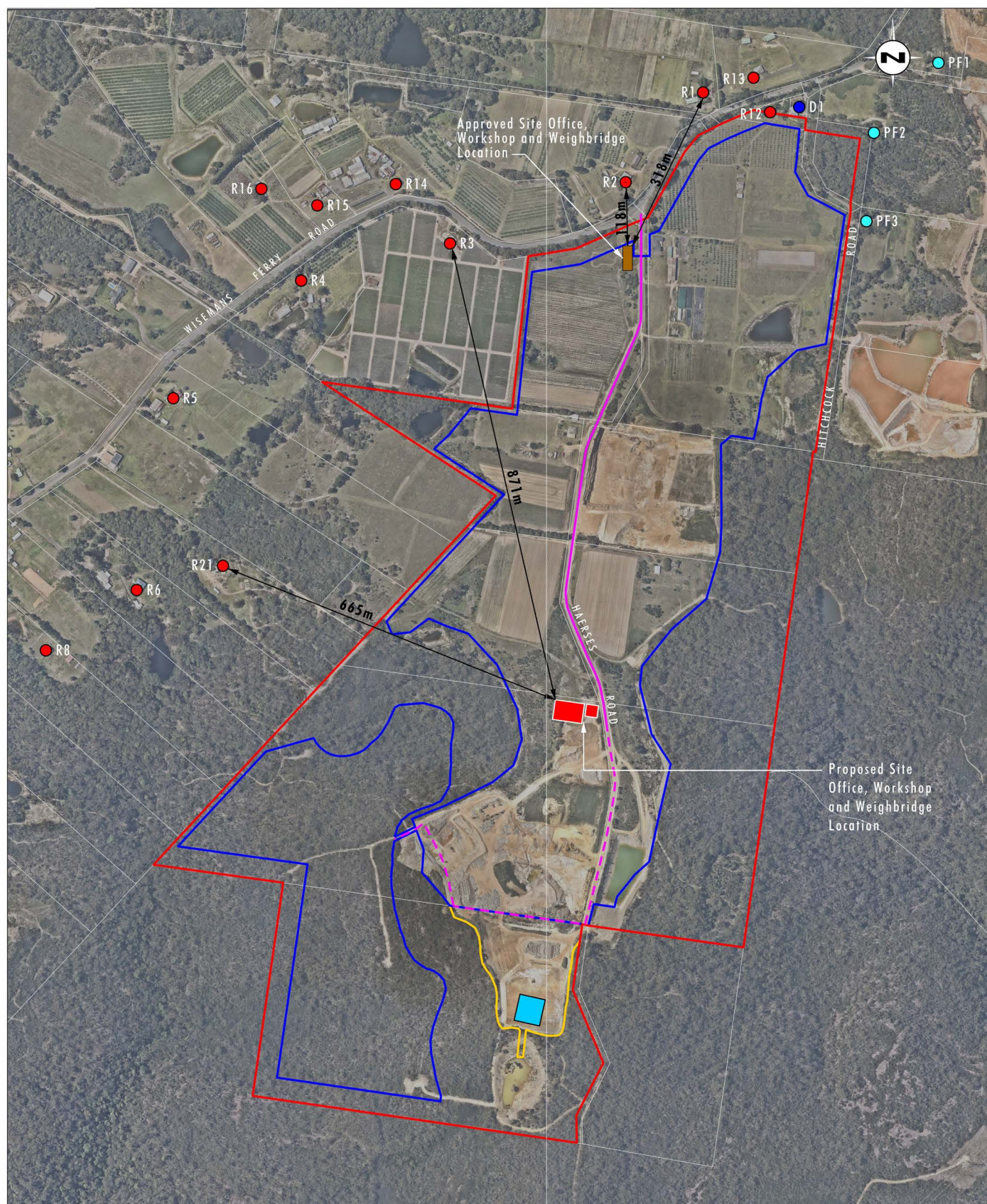


Image Source: Nearmap (Dec 2018)

Data Source: Mc Kinlay Morgan & Associates Pty Ltd (2019)

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### Legend

- Haerses Road Quarry Site
- Processing and Stockpiling Area
- Approved Extraction Area
- Wet Processing Plant
- Indicative Unsealed Haul Road
- Sealed Access Road
- Proposed Site Office, Workshop and Weighbridge Location

- Site Office, Weighbridge and Workshop
- Indicative Unsealed Haul Road

### Noise Receiver Locations:

- Residential
- Owned by Dixon Sand
- Owned by PF Formation

FIGURE 5.1

Location of Sensitive Receivers



**Table 5.3 Environmental Impacts of Proposed Modification**

Aspect	Comment	Predicted Impact (Relative to Approved Development)
Noise	<p>The Proposed Modification would relocate the approved site office, workshop and weighbridge further from the closest sensitive receivers along Wisemans Ferry Road. As such, it is expected to reduce noise impacts on nearby residents during construction and operation of these facilities.</p> <p>The proposed operation of sandstone cutting saws within the relocated workshop is not expected to increase noise levels at privately-owned receivers, relative to previous modelled predictions for MOD 3. The assessment is based on the noise levels of the saws being comparable to other noise sources at the Quarry, noise attenuation provided by the shed and the location of the shed approximately 665 m from the closest sensitive receiver (refer to <b>Figure 5.1</b>). Critically, Dixon Sand will design, engineer and construct the shed structure (in consultation with a suitably qualified noise specialist) to ensure that it provides the necessary noise attenuation to maintain compliance with the existing noise criteria in Condition 3 of Schedule 3 of the development consent.</p> <p>Noise generated by initial sandstone cutting within the Friable Sandstone Extraction Area is expected to be consistent with previous modelled predictions for MOD 3. Dixon Sand has advised that the hydraulic saw attachment generates lower noise levels than approved bulldozer ripping activities within the extraction area. As such, Dixon Sand can continue to maintain compliance with the existing noise criteria in Condition 3 of Schedule 3 of the development consent.</p>	No change
Air Quality	<p>The Proposed Modification will not increase dust emissions from the Quarry. Sandstone cutting undertaken in the relocated workshop will be limited to wet cutting only, to suppress dust.</p> <p>Dust generated by initial cutting activities within the extraction area will be indistinguishable from approved extraction and processing activities at sensitive receivers.</p>	No change
Visual	<p>The Proposed Modification would reduce the likelihood of visual impacts from Wisemans Ferry Road, relative to the approved development.</p> <p>The Proposed Modification does not involve any change to the approved height of the workshop shed (approximately 8 m to the peak of the pitched roof) or to the construction materials (Colorbond or similar, in green or brown colour).</p> <p>Due to intervening vegetation, the relocated workshop shed is likely to be fully or almost fully screened from view at sensitive receivers to the west of the Quarry along Wisemans Ferry Road.</p>	Reduced impact
Surface Water	<p>Rainwater from the workshop shed will be collected in tanks and used for non-potable purposes on-site (e.g. wet cutting). Water used in wet cutting will be recycled and re-used.</p> <p>The new hardstand areas will be incorporated into the surface water management system for Stage 2 (west of Haerses Road).</p> <p>During construction, Dixon Sand will implement established erosion and sedimentation control measures as detailed in the approved Surface Water Management Plan.</p> <p>Bottled drinking water will be delivered to the site for use in the relocated offices and workshop. Dixon Sand will manage wastewater in accordance with Council requirements (refer to <b>Section 0</b>)</p>	Minimal impact



Aspect	Comment	Predicted Impact (Relative to Approved Development)
Traffic and Transport	There would be no change to the type, volume or frequency of traffic entering and exiting the Quarry from Wisemans Ferry Road.	No change
Biodiversity	A Biodiversity Development Assessment Report (BDAR) is not required under section 7.17 of the <i>Biodiversity Conservation Act 2016</i> , provided the consent authority is satisfied that the modification would not increase the impacts of the development on biodiversity values. The Proposed Modification does not involve any change to approved disturbance areas or increase the likelihood or severity of indirect impacts on threatened flora or fauna. Accordingly, it is submitted that a BDAR is not required.	No change
Heritage	No changes to approved disturbance areas proposed.	No change
Socio-economic	No changes to the nature, scale or intensity of approved quarrying operations proposed.	No change
Rehabilitation	No changes to approved conceptual final landform proposed. Backfilling to establish a pad for the office, workshop and weighbridge area is consistent with the approved rehabilitation strategy for the site.	No change

## 6.0 Justification and Conclusion

The Proposed Modification will:

- reduce noise and visual impacts associated with the construction and operation of the site office, workshop and weighbridge facilities on sensitive receivers along Wisemans Ferry Road
- not increase the Quarry's approved disturbance footprint or result in any impacts to biodiversity or heritage values, relative to the approved development
- not increase dust impacts, relative to the approved development, and
- avoid the need to install a new electricity transformer.

On this basis, it is considered that the Proposed Modification is of minimal environmental impact and is in the public interest.

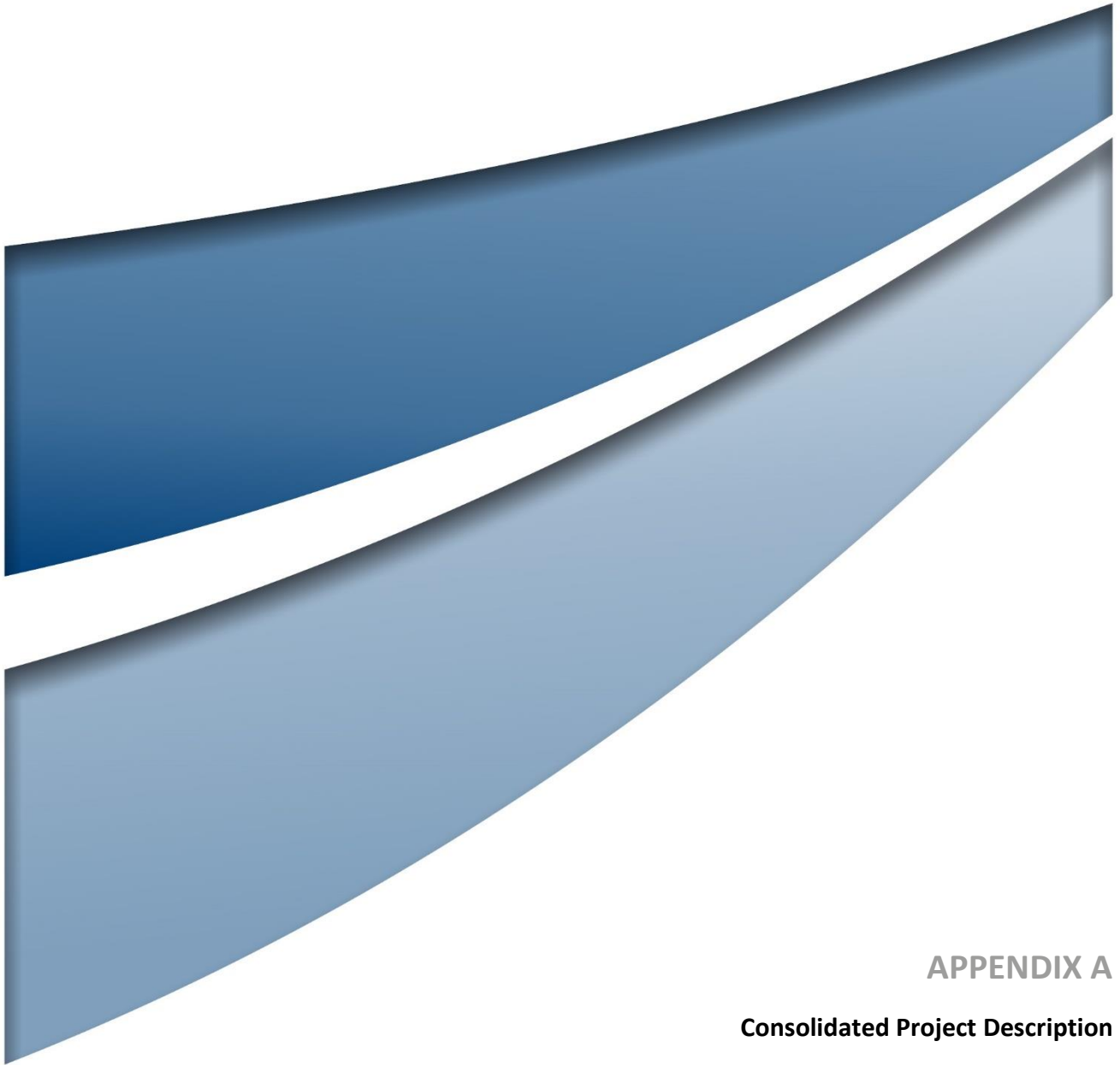
We trust this information meets with your current requirements. Please do not hesitate to contact the undersigned should you require clarification or further information.

Yours sincerely



**Alex Irwin**  
Principal Environmental Consultant

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## APPENDIX A

### Consolidated Project Description

## Consolidated Project Description

**Table A1** below provides an updated summary of mitigation measures for DA 165-7-2005 as modified (incorporating MOD 5).

The approved development, as modified, includes:

- carrying out quarrying operations until 14 February 2046
- extracting up to 495,000 tpa of Tertiary Sand and Friable Sandstone in stages
- dispatching a combined total of up to 495,000 tpa of quarry products by road, comprising:
  - up to 190,000 tpa dispatched to Old Northern Road Quarry, and
  - up to 495,000 tpa dispatched direct to market
- receiving up to 250,000 tpa of VENM and ENM for blending and rehabilitation purposes
- up to 180 truck movements per day (combined inbound and outbound), with no more than 20 between 6.00 am and 7.00 am
- establishment of a site office, workshop, weighbridge and associated carparking area
- construction and use of ancillary infrastructure, including internal haul roads, water management infrastructure and acoustic bunds
- on-site mobile crushing, screening, wet processing and sandstone cutting
- upgrades to internal roads and the intersection of Haerses Road with Wisemans Ferry Road
- progressive rehabilitation of the Quarry site to either Class 4 agricultural land or native vegetation.

**Table A1 Key features of Approved Development (As Modified)**

Aspect	Approved development (incorporating MOD 5)
Quarry life	14 February 2046
Extraction limit	495,000 tpa
Transport limit	Combined limit of 495,000 tpa, comprising: <ul style="list-style-type: none"> <li>• Up to 190,000 tpa to Old Northern Road Quarry</li> <li>• Up to 495,000 tpa direct to market.</li> </ul>
Truck movements	Up to 180 truck movements per day (total in and out), including up to 20 vehicle movements (total in and out) between 6.00 am and 7.00 am
Total disturbance footprint	Approximately 75.5 ha
Overburden	Used for acoustic barriers or stockpiled and used to fill voids
Importation of material	Receival of up to 250,000 tpa of VENM and ENM for landform construction or reprocessing and sale



Aspect	Approved development (incorporating MOD 5)	
Infrastructure	<ul style="list-style-type: none"> <li>• Site office, workshop, weighbridge and gravel car parking area</li> <li>• Internal haul roads</li> <li>• Water management structures, including diversion banks and channels, contour banks and drains and sediment basins</li> <li>• Acoustic bunds (refer to <b>Figure 3</b>)</li> <li>• Upgrading of Haerses Road and the intersection of Haerses Road and Wisemans Ferry Road as required under Conditions 20 to 24 of Schedule 3 of the development consent</li> </ul>	
Plant & Equipment	<ul style="list-style-type: none"> <li>• Front end loader (4)</li> <li>• 40 t excavator (2)</li> <li>• 40 t trucks (2)</li> <li>• water cart (1)</li> <li>• dozer</li> <li>• grader</li> <li>• service vehicle</li> <li>• mobile dry screen</li> <li>• mobile jaw and rotary crushers</li> <li>• wet processing plant</li> <li>• hydraulic saw attachments</li> <li>• stone cutting saws (to be enclosed in workshop)</li> </ul>	
Hours of operation	Quarrying operations (excluding truck arrival, loading and dispatch)	<ul style="list-style-type: none"> <li>• 7.00am to 6.00pm Monday to Saturday</li> <li>• At no time on Sundays or public holidays</li> </ul>
	Truck arrival, loading and dispatch	<ul style="list-style-type: none"> <li>• 6.00am to 6.00pm Monday to Saturday</li> <li>• At no time on Sundays or public holidays</li> </ul>
	Acoustic bund construction and road and intersection works on Haerses Road and Wisemans Ferry Road	<ul style="list-style-type: none"> <li>• 8.00am to 5.00pm Monday to Friday</li> <li>• At no time on Saturdays, Sundays or public holidays</li> </ul>
	Maintenance	At any time, provided that these activities are not audible at any privately-owned residence outside of permissible hours for quarrying operations
Extraction depth	No extraction within 2 metres (m) of the highest recorded wet weather groundwater level of the Maroota Tertiary Sands Groundwater Source (MTSGS) or Sydney Central Basin Groundwater Source (SCBGS), as defined on the most recent Maximum Extraction Depth Map approved by the Secretary (see Conditions 19 to 22 of Schedule 2 of the development consent)	
Biodiversity Offset Strategy	Establishment of the Haerses Road Offset Area (refer to <b>Figure 4</b> ), Porters Road Offset Area (refer to <b>Figure 5</b> ) and staged retirement of residual credits as required under Conditions 30 to 33 of Schedule 3 of the development consent	
Employment	Up to 16 people full time	



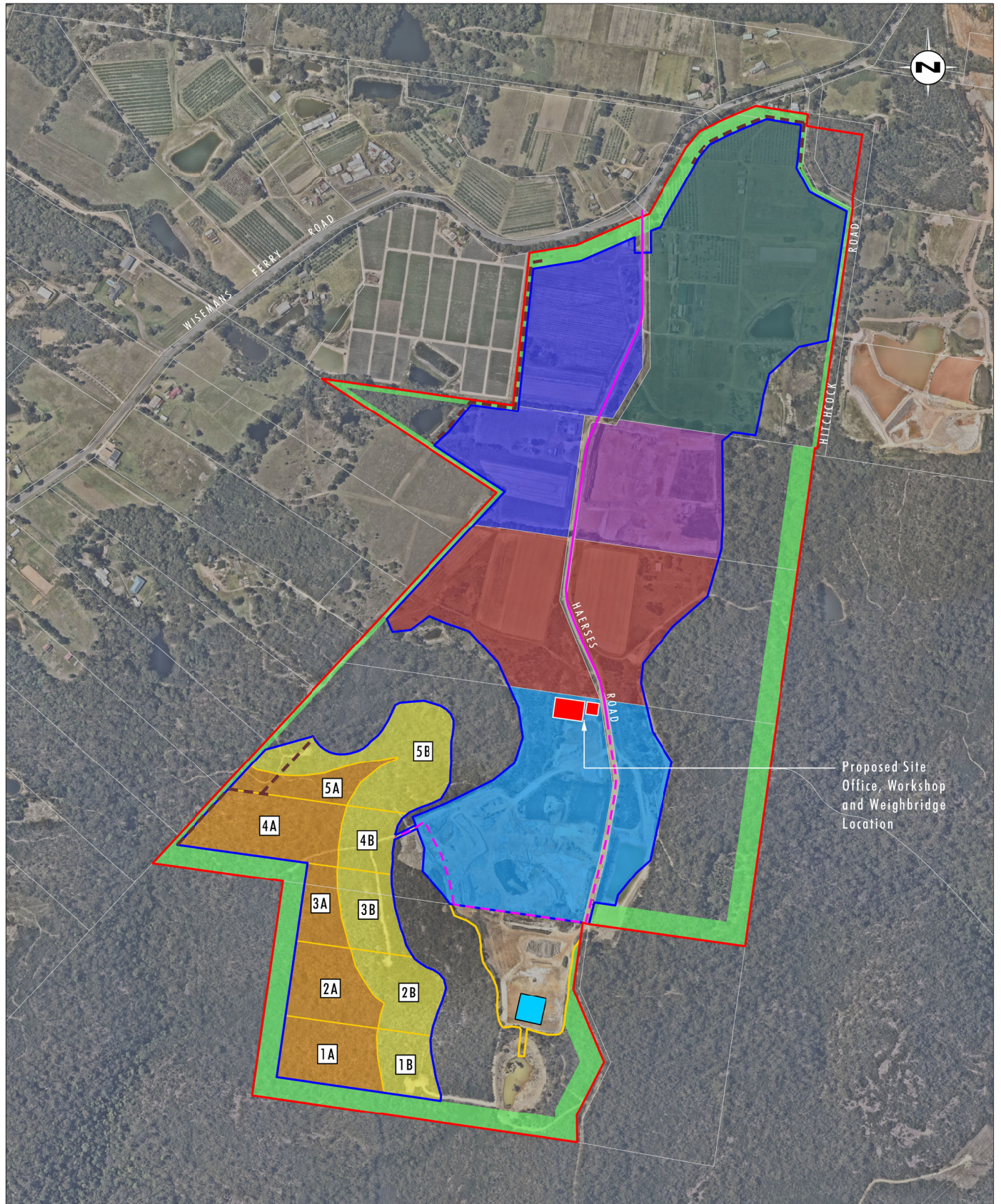


Image Source: Nearmap (Dec 2018)

Data Source: Mc Kinlay Morgan & Associates Pty Ltd (2019)

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### Legend

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| <span style="border: 2px solid red; padding: 2px;"> </span> Haesers Road Quarry Site                                    | <span style="background-color: #800080; border: 1px solid black; padding: 2px;"> </span> Tertiary Sands Extraction Area Stage 1 | <span style="background-color: red; border: 1px solid black; padding: 2px;"> </span> Proposed Site Office, Workshop and Weighbridge Location |
| <span style="background-color: yellow; border: 1px solid black; padding: 2px;"> </span> Processing and Stockpiling Area | <span style="background-color: #00BFFF; border: 1px solid black; padding: 2px;"> </span> Tertiary Sands Extraction Area Stage 2 |  |
| <span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span> Buffer Zone                    | <span style="background-color: #8B4513; border: 1px solid black; padding: 2px;"> </span> Tertiary Sands Extraction Area Stage 3 |  |
| <span style="border: 2px solid blue; padding: 2px;"> </span> Approved Extraction Area                                   | <span style="background-color: #4169E1; border: 1px solid black; padding: 2px;"> </span> Tertiary Sands Extraction Area Stage 4 |  |
| <span style="background-color: #FFD700; border: 1px solid black; padding: 2px;"> </span> Sandstone Extraction Area A    | <span style="background-color: #3CB371; border: 1px solid black; padding: 2px;"> </span> Tertiary Sands Extraction Area Stage 5 |  |
| <span style="background-color: #FFFF00; border: 1px solid black; padding: 2px;"> </span> Sandstone Extraction Area B    | <span style="border-bottom: 2px dashed magenta; width: 20px; display: inline-block;"></span> Indicative Unsealed Haul Road      |  |
| <span style="border: 1px solid black; padding: 2px;">1</span> Extraction Cell Number                                    | <span style="border-bottom: 2px dashed brown; width: 20px; display: inline-block;"></span> Approved Acoustic Bund               |  |
| <span style="background-color: #00CED1; border: 1px solid black; padding: 2px;"> </span> Wet Processing Plant           | <span style="border-bottom: 2px solid magenta; width: 20px; display: inline-block;"></span> Sealed Access Road                  |  |

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FIGURE 1  
Development Layout Plan



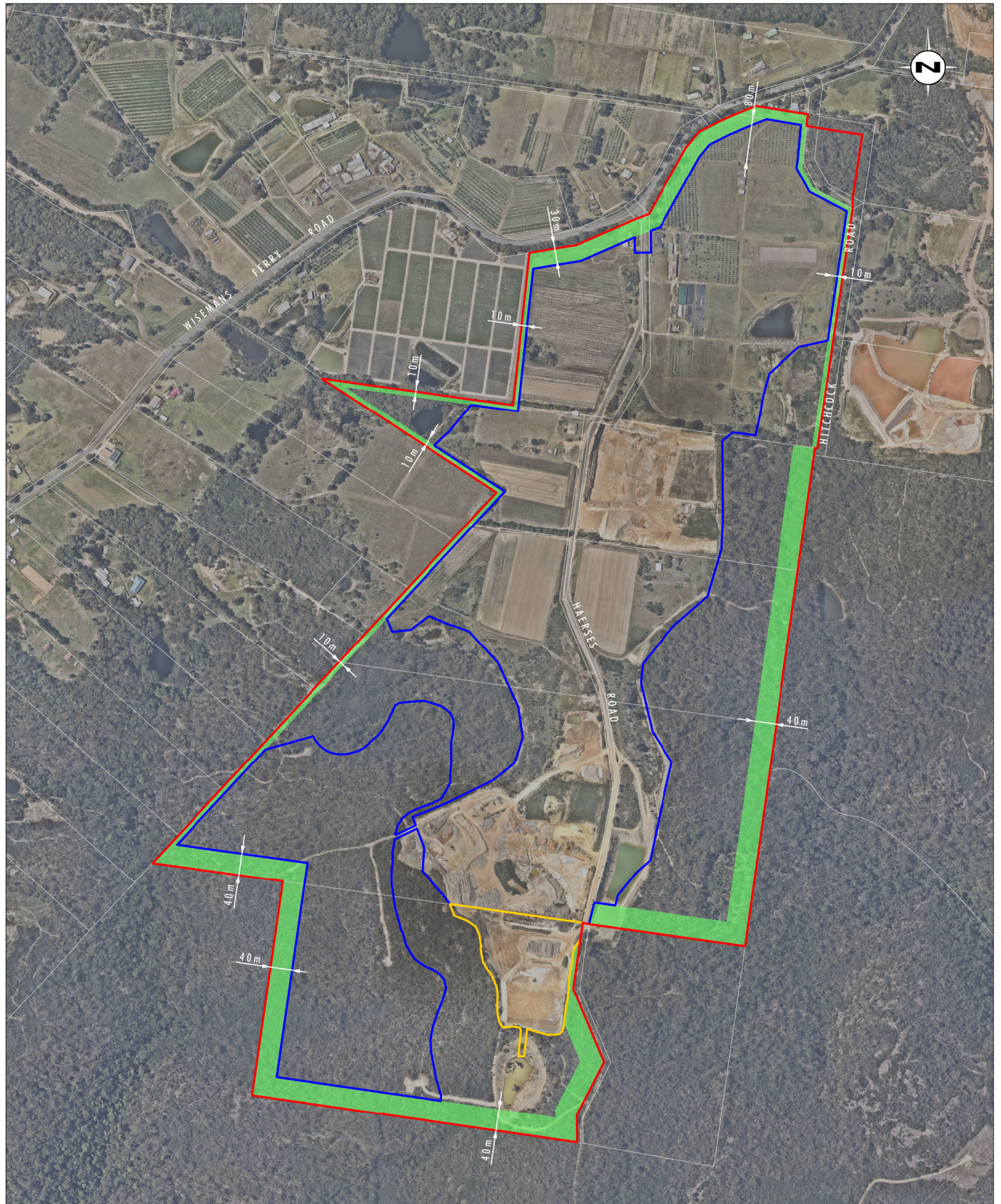


Image Source: Nearmap (Dec 2018)  
Data Source: Mc Kinlay Morgan & Associates Pty Ltd (2014)

0 100 250 500m  
1:10 000

### Legend

- Haerses Road Quarry Site
- Processing and Stockpiling Area
- Buffer Zone
- Approved Extraction Area
- Indicative Unsealed Haul Road
- Sealed Access Road

FIGURE 2  
Buffer Zones



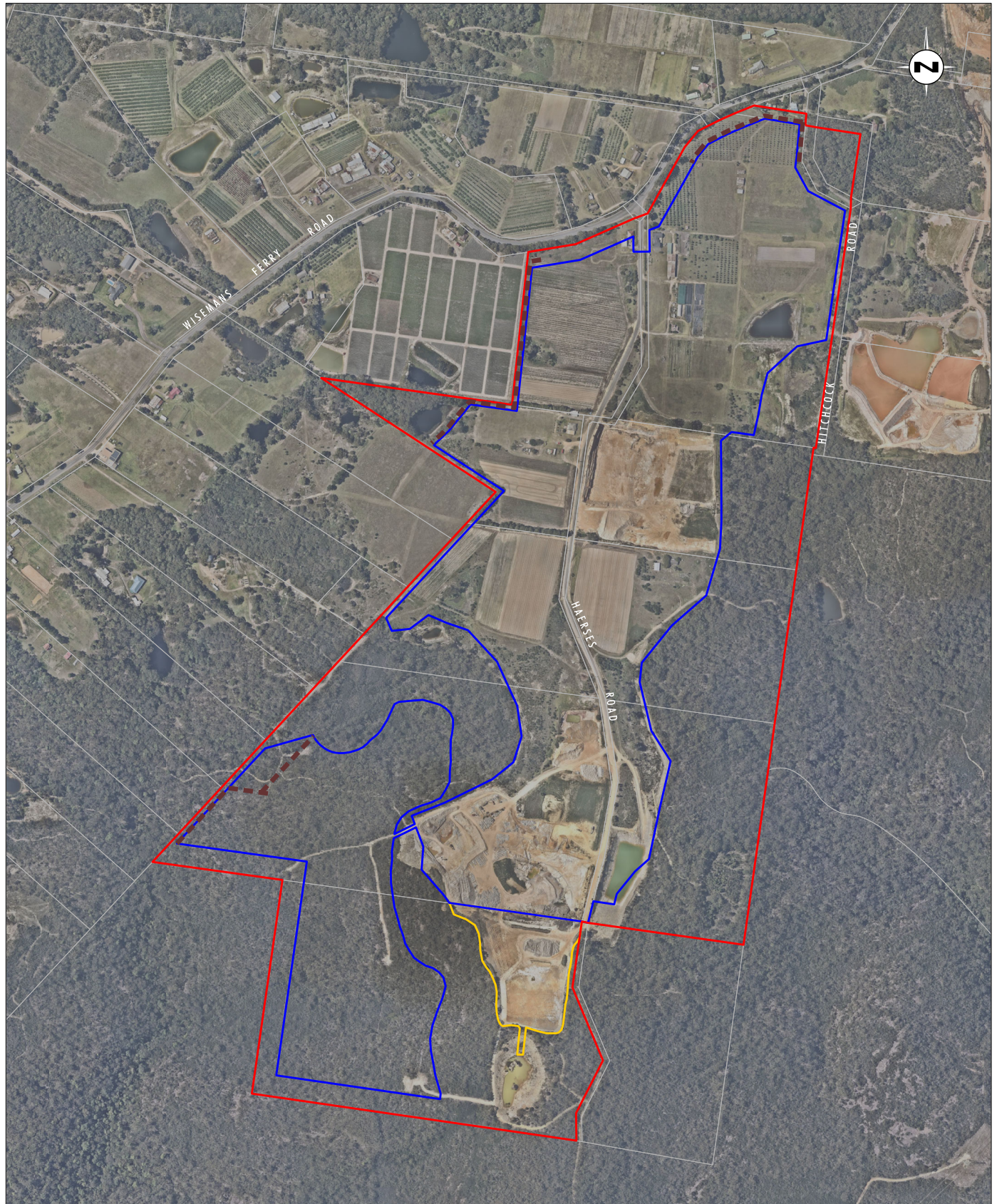


Image Source: Nearmap (Dec 2018)  
Data Source: Mc Kinlay Morgan & Associates Pty Ltd (2019)

0 100 250 500m  
1:10 000

#### Legend

- Haerses Road Quarry Site
- Processing and Stockpiling Area
- Approved Extraction Area
- - - Approved Acoustic Bund

FIGURE 3  
Acoustic Bunds



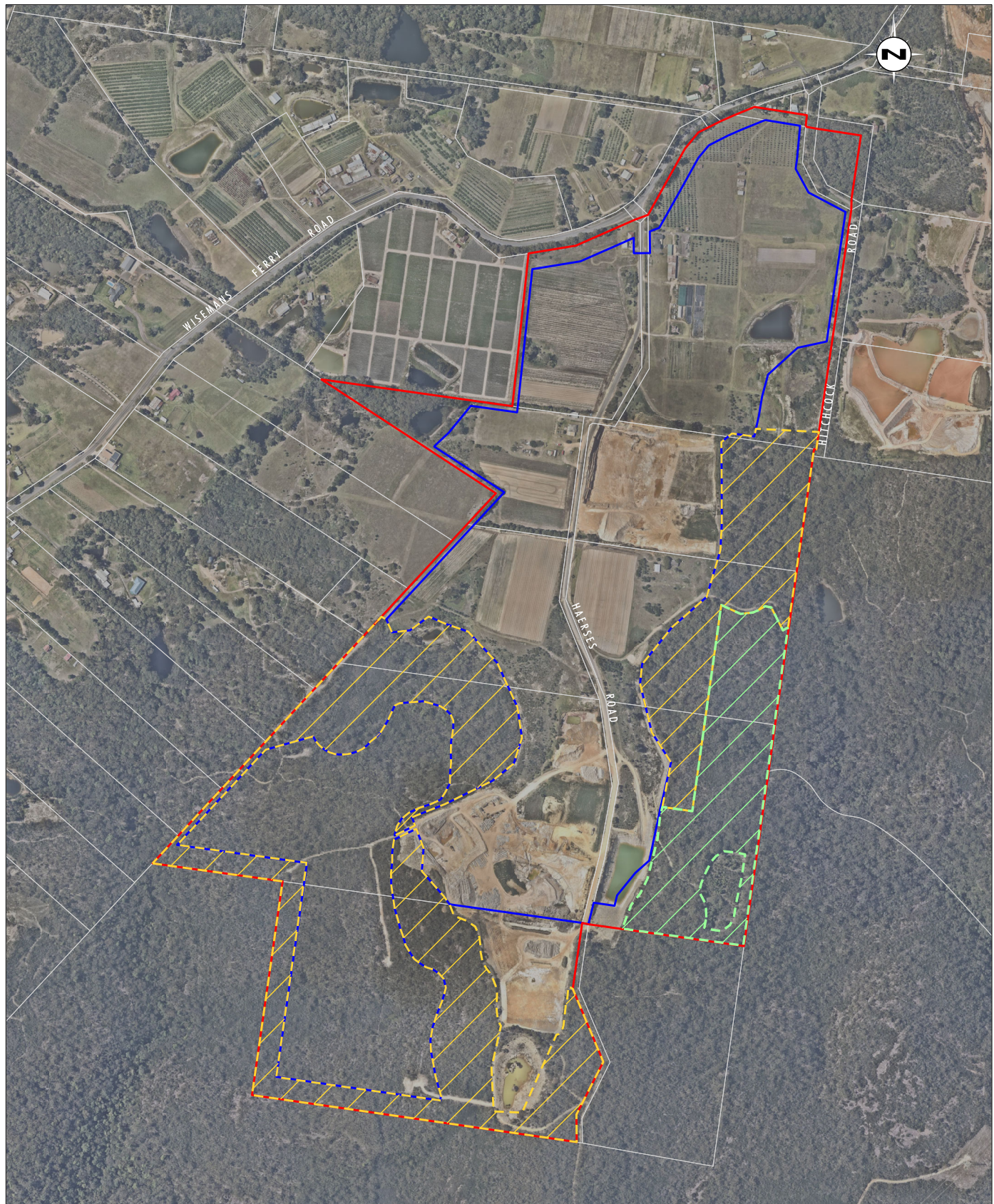


Image Source: Nearmap (Dec 2018)  
Data Source: Mc Kinlay Morgan & Associates Pty Ltd (2019)

0 100 250 500m  
1:10 000

#### Legend

- Haerses Road Quarry Site
- Approved Extraction Area
- - - Biodiversity Offset Area for Old Northern Road Quarry
- - - Biodiversity Offset Area for Haerses Road Quarry

FIGURE 4

Haerses Road Biodiversity Offset Areas



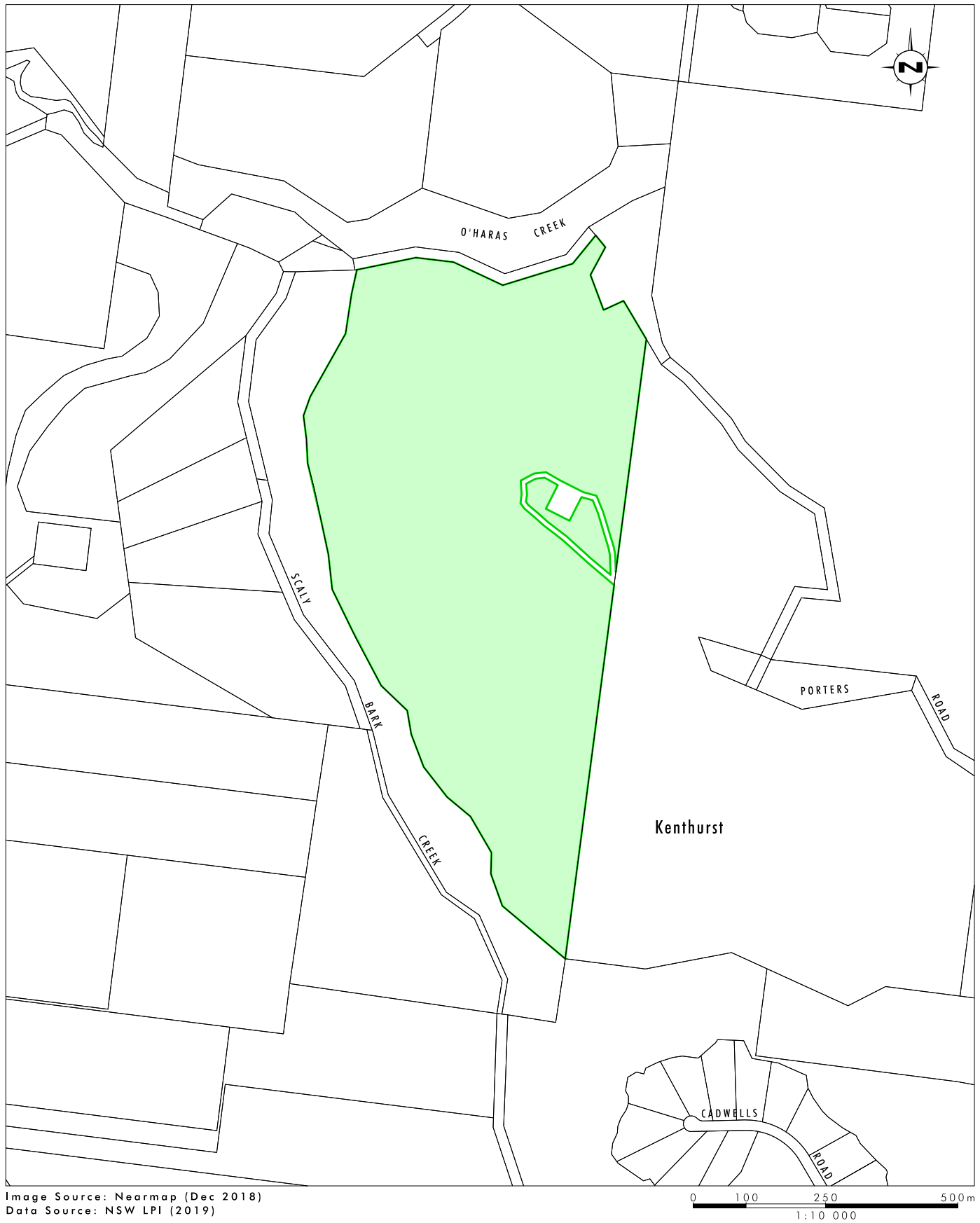


FIGURE 5

Porters Road Biodiversity Offset Area



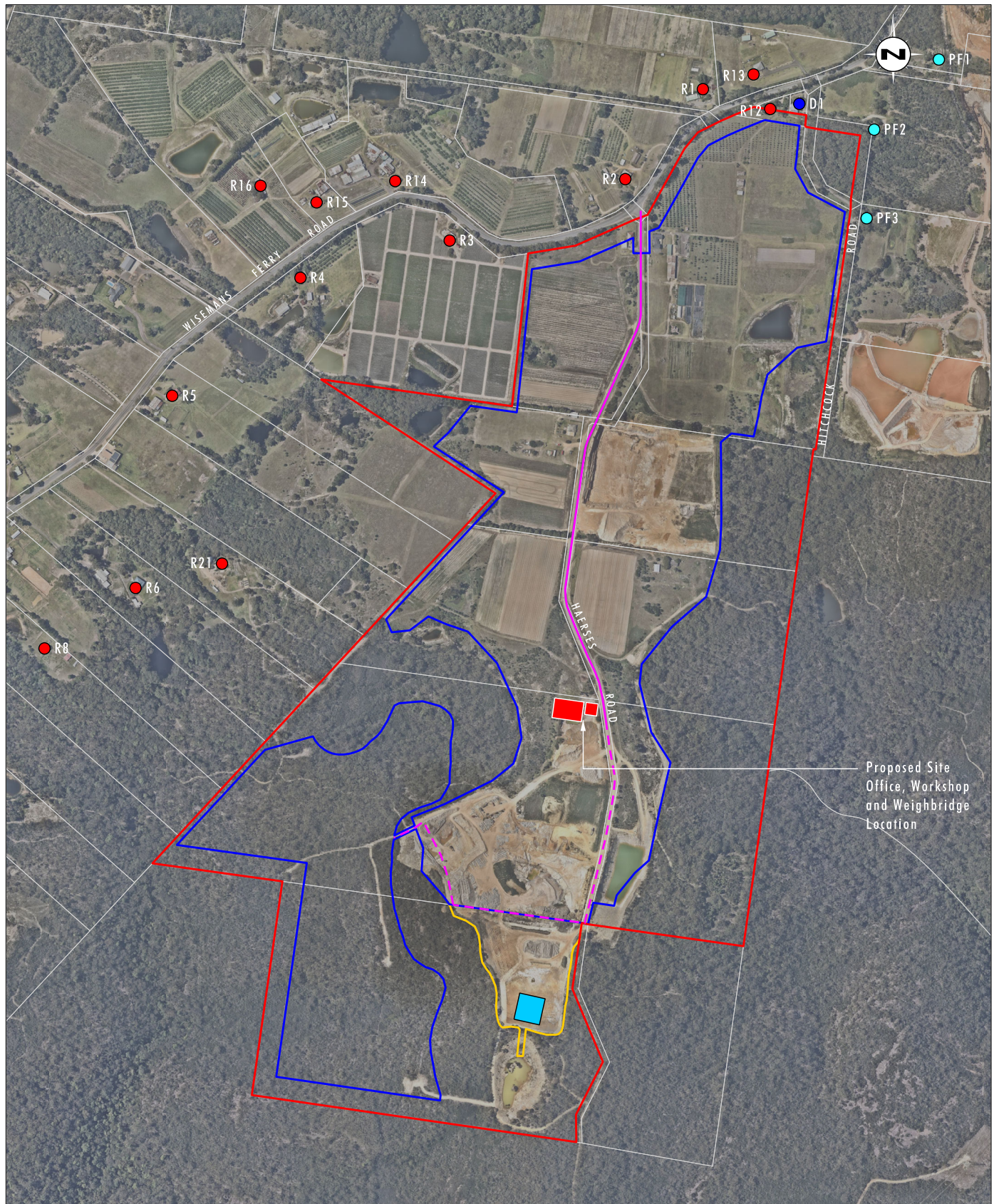


Image Source: Nearmap (Dec 2018)  
Data Source: Mc Kinlay Morgan & Associates Pty Ltd (2019)

0 100 250 500m  
1:10 000

#### Legend

- Haeseres Road Quarry Site
- Processing and Stockpiling Area
- Approved Extraction Area
- Wet Processing Plant
- Indicative Unsealed Haul Road
- Sealed Access Road
- Proposed Site Office, Workshop and Weighbridge Location

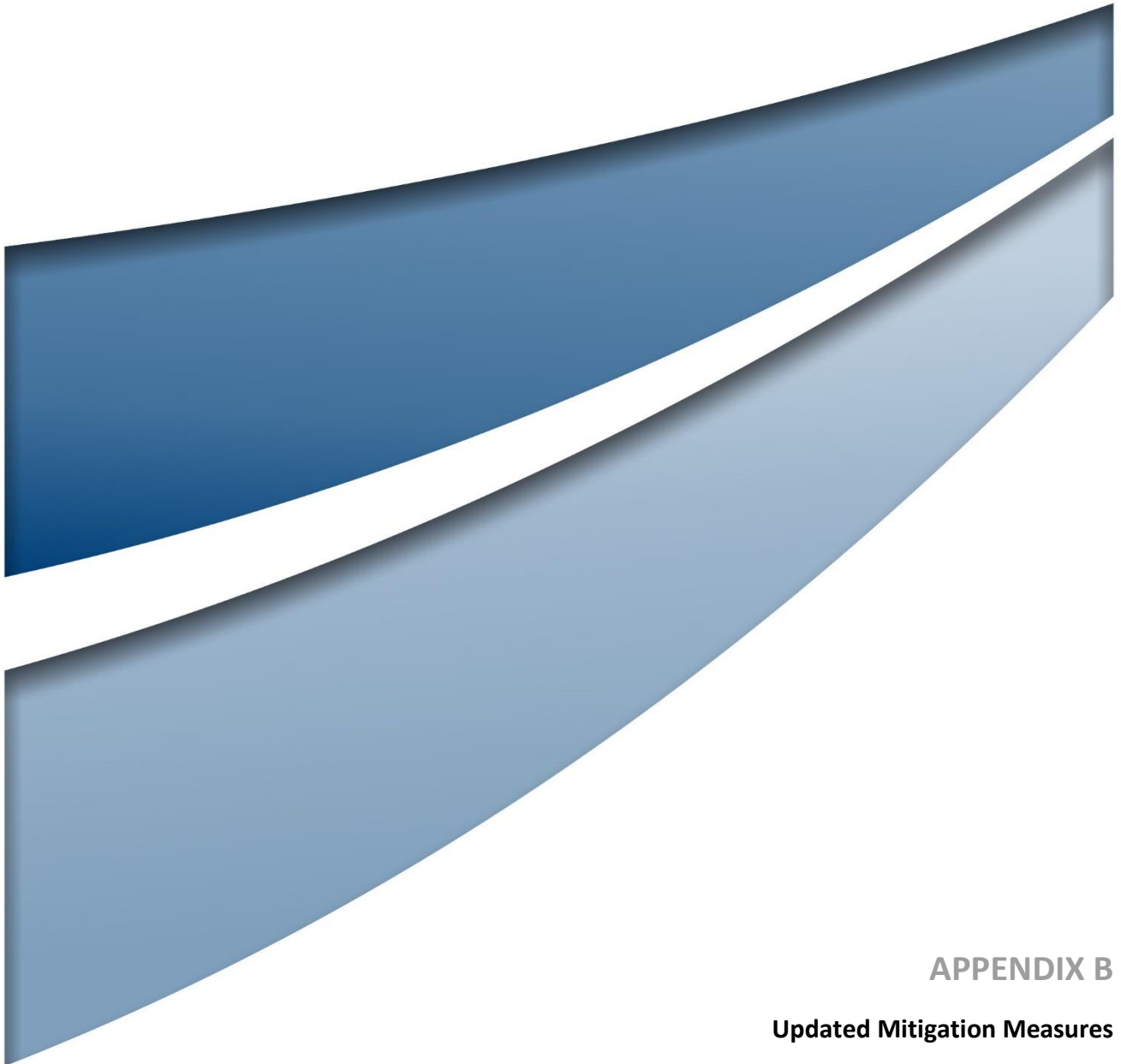
- Noise Receiver Locations:
- Residential
  - Owned by Dixon Sand
  - Owned by PF Formation

FIGURE 6

Sensitive Receivers Locations



**FIGURE 7**  
**Modified Conceptual**  
**Final Landform**



## APPENDIX B

### Updated Mitigation Measures



## Updated Mitigation Measures

**Table B1** below provides an updated summary of mitigation measures for DA 165-7-2005 as modified (incorporating MOD 5).

**Table B1 Updated Mitigation Measures**

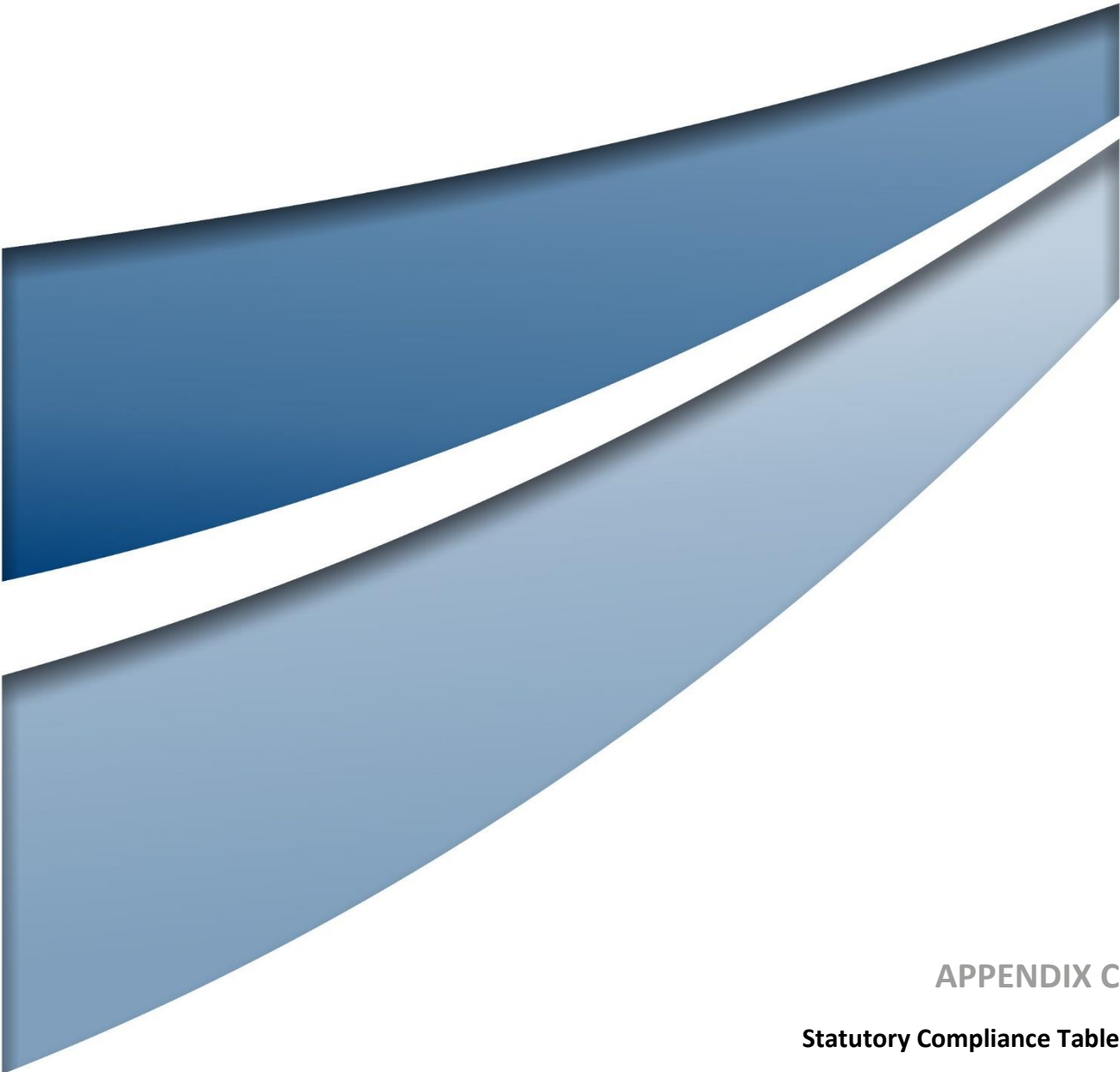
Environmental Management Measures
Traffic and Transport
<ul style="list-style-type: none"> <li>Continue to implement the latest version of the <i>Traffic Management Plan</i> approved by the Secretary</li> <li>Continue to enforce the Maroota Local Traffic Management Policy.</li> </ul>
Noise
<ul style="list-style-type: none"> <li>Continue to implement the latest version of the Noise Management Plan approved by the Secretary</li> <li>Undertake noise monitoring at the potentially most affected locations near the south-western end of the site, such as Location R6 and R8, when extraction operations are being conducted in the additional extraction area</li> <li>Prepare a Noise Management Protocol prior to commencing campaign works such as clearing of the extraction cells, early pre-stripping works and construction of the noise bunds. Measures to be included in the Protocol are: <ul style="list-style-type: none"> <li>consultation with the nearest residents prior to work commencement advising them of the potential for elevated noise levels, the timing of works, duration and taking into consideration times that might be of least disturbance to them</li> <li>provision of a contact and telephone number to raise any concerns during the works</li> </ul> </li> <li>Extend noise agreement with Landowner of Receiver R02</li> <li>Install dump truck noise mitigation (of at least 6 dB(A)) prior to commencement within Stage 4 of the Tertiary Sand Extraction Area (or equivalent on-site noise mitigation and management).</li> </ul>
Air Quality
<ul style="list-style-type: none"> <li>Continue to implement the latest version of the <i>Air Quality Management Plan</i> approved by the Secretary</li> <li>Use of a water cart to control emissions from haul roads (unsealed)</li> <li>Enforcement of speed limits onsite</li> <li>Progressive rehabilitation of exposed areas</li> <li>Minimising drop height of material during truck loading and unloading where possible</li> <li>Management of dust-generating activities during unfavourable meteorological conditions.</li> </ul>
Greenhouse Gas and Energy
<ul style="list-style-type: none"> <li>Regularly tuning and maintaining mobile and fixed equipment to minimise exhaust and greenhouse gas emissions</li> <li>Reviewing opportunities for improvement in diesel use and energy efficiency when purchasing or replacing equipment at the quarry to reduce greenhouse gas emissions.</li> </ul>
Groundwater
<ul style="list-style-type: none"> <li>Maintain the maximum extraction depth at least 2 m above the wet weather groundwater level</li> <li>The wet weather groundwater level will be reviewed at least every three years and extraction levels modified as required</li> <li>Develop and implement a Trigger Action Response Plan (TARP) for which identifies appropriate trigger and response actions for the management or mitigation of any unpredicted groundwater impacts</li> <li>Continue to implement the latest version of the <i>Soil and Water Management Plan</i> approved by the Secretary.</li> </ul>

Environmental Management Measures
Surface Water
<ul style="list-style-type: none"> <li>• Continue to operate the Water Management System (WMS) in accordance with latest version of the <i>Soil and Water Management Plan</i> approved by the Secretary</li> <li>• Following the completion of construction works, inspect work areas monthly and after any rainfall events generating runoff until revegetation and stabilisation of drainage structures are complete</li> <li>• During operations, inspect water management controls on a monthly basis and after storm events (i.e. greater than 50 mm in 24 hours)</li> <li>• The walls of all water management dams will be inspected biennially (every two years) for their structural integrity and for any maintenance requirements. The walls of the water management dams will be grassed and kept free of any trees and shrubs.</li> <li>• Monthly surface monitoring of the in-pit sump will be undertaken to provide for ongoing monitoring of site water quality</li> <li>• Monthly monitoring of site water usage and changes in dam water volumes to determine an annual site water balance.</li> </ul>
Visual Amenities
<ul style="list-style-type: none"> <li>• Relocation of the 5 m high earth bund to the revised northern perimeter of the extraction area and revegetate with stabilising groundcover and fast-growing shrub and tree species prior to the commencement of extraction within the extension area</li> <li>• Tree screens will be planted along the remaining northern perimeter of the Quarry site</li> <li>• Progressive rehabilitation of the Quarry to limit the area of exposed surfaces at any one time</li> <li>• Dust suppression to limit visibility of dust</li> <li>• Direct lighting away from residences and vantage points.</li> </ul>
Biodiversity
<ul style="list-style-type: none"> <li>• Fence and/or signpost areas of biodiversity value outside the proposed extraction area extension</li> <li>• Implement a tree felling procedure to minimise the potential for impacts on native fauna species (focusing on threatened species) as a result of the clearing of hollow-bearing trees</li> <li>• Provide employee education and training including inductions for staff, contractors and visitors to the site, to inform personnel of the biodiversity issues present at the site and their role and responsibilities in relation to the protection and/or minimisation of impacts to biodiversity</li> <li>• Implement traffic control measures/speed limits/signage on haul roads and access roads to minimise fauna injury/road kills</li> <li>• Minimise vegetation clearance to that required for operational purposes</li> <li>• Inspect and clean (if required) vehicles or equipment brought onto, or leaving the Quarry for ground disturbance activities or travelling throughout the site to limit the spread of plant material between sites</li> <li>• Clearly demarcate area to be cleared to ensure no unnecessary disturbance is undertaken outside of these areas</li> <li>• Complete regular inspections to monitor the spread of weed species</li> <li>• Provide environmental with relevant training on the identification of target weed species</li> <li>• Complete weed control and eradication as required</li> <li>• Complete progressive rehabilitation and stabilisation of disturbed land with native vegetation.</li> </ul>
Heritage
<ul style="list-style-type: none"> <li>• All persons working on site that are involved in ground disturbing works should be made aware of their obligations under the NPW Act and the Heritage Act</li> <li>• In the unlikely event that an Aboriginal object is identified whilst carrying out the proposed works, all activities in the immediate vicinity of the identified Aboriginal object should cease and a suitably qualified archaeologist should be contacted to confirm the validity of the object.</li> </ul>



Environmental Management Measures
<b>Rehabilitation and Final Landform</b> <ul style="list-style-type: none"> <li>• Complete progressive rehabilitation of the Quarry</li> <li>• Produce a final landform which can sustain ongoing agricultural land uses</li> <li>• As part of the detailed quarry planning process, a detailed Quarry Closure Plan will be developed approximately three years prior to cessation of quarrying activities. The Quarry Closure Plan will describe in detail the proposed operational and progressive rehabilitation procedures for the remainder of the quarry life and subsequent to the quarry closure.</li> </ul>
<b>Social</b> <ul style="list-style-type: none"> <li>• Continued implementation and enforcement of the <i>Maroota Local Traffic Management Policy</i></li> <li>• Continue toolbox talks, inductions and other training to remind personnel and drivers of obligations under the <i>Maroota Local Traffic Management Policy</i></li> <li>• Conduct random monitoring of trucks along the internal haul route</li> <li>• Prepare and distribute documentation on matters of key environmental concern to the CCC over the life of the Quarry.</li> </ul>

Note: Mitigation measures which have been superseded by conditions of consent and more recent environmental assessment documents have been omitted from this table.



## APPENDIX C

### Statutory Compliance Table



**Table C1 Relevant State Legislation**

Act	Comment	Further Approval Required?
<i>Heritage Act 1977 (the Heritage Act)</i>	All works associated with the Proposed Modification would be located within the Quarry's approved disturbance footprint. No further approvals under the Heritage Act are required.	No
<i>National Parks and Wildlife Act 1974 (NP&amp;W Act)</i>	All works associated with the Proposed Modification would be located within the Quarry's approved disturbance footprint. No further approvals under the NP&W Act are required.	No
<i>Rural Fires Act 1997</i>	A bushfire safety authority is not required for the Proposed Modification.	No
<i>Water Management Act 2000</i>	The Proposed Modification will not require any approvals under sections 89, 90 or 91 of the WM Act	No
<i>Protection of the Environment Operations Act 1997 (POEO Act)</i>	The Proposed Modification will not require a variation to the site's existing Environment Protection Licence (EPL 12513)	No
<i>Biodiversity Conservation Act 2016 (BC Act)</i>	Refer to <b>Section 5.0</b>	No
<i>Roads Act 1993 (Roads Act)</i>	The Hills Shire Council is the relevant roads authority under the Roads Act for works within the Haerses Road reserve. A section 138 approval will be obtained, if required, prior to carrying out any works within the road reserve.	Yes – to be confirmed by Council
<i>Local Government Act 1993 (Local Government Act)</i>	Specified activities, including the operation of a system of sewage management, require approval under section 68 of the Local Government Act. Dixon Sand will consult with Council and obtain the necessary approvals under section 68 of the Local Government Act.	Yes – to be confirmed by Council

**Table C2 Consideration of Environmental Planning Instruments**

Matters for Consideration	
State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP)	<p>The SRD SEPP identifies development to which the SSD assessment and determination process under Part 4 of the EP&amp;A Act applies. The Proposed Modification is for the purpose of extractive industry and is SSD as defined by the provisions of the SRD SEPP and requires development consent under Part 4 of the EP&amp;A Act.</p> <p>By operation of section 4.5(a) of the EP&amp;A Act and clause 8A(2) of the SRD SEPP, the Minister for Planning and Public Spaces is the consent authority for the modification application as Dixon Sand has not disclosed a reportable political donation.</p>
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP)	Refer to <b>Table C3</b> below
State Environmental Planning Policy No 33 – Hazardous and Offensive Development	Proposed sandstone cutting activities do not constitute hazardous or offensive industry and no further assessment under SEPP No 33 is required

Matters for Consideration	
Sydney Regional Environmental Plan No. 9 – Extractive Industry (SREP No. 9)	The Proposed Modification is consistent with the aims and requirements of SREP No. 9.
The Hills Local Environmental Plan 2012 (LEP)	The Proposed Modification is consistent with the aims and objectives of the LEP, and with the objectives of the RU1 Primary Production zone. Extractive industries are permissible with consent in the zone.

**Table C3 Application of Mining SEPP 2007**

Clause	Description	Comment
12AB Non-discretionary standards for mining	Not applicable to extractive industry	N/A
12 - Compatibility of proposed extractive industry with other land uses	(a) Consideration is given to: <ul style="list-style-type: none"> <li>(i) the existing uses and approved uses of land in the vicinity of the development</li> <li>(ii) the potential impact on the preferred land uses (as considered by the consent authority) in the vicinity of the development</li> <li>(iii) any ways in which the development may be incompatible with any of those existing, approved or preferred land uses.</li> </ul> (b) The respective public benefits of the development and the existing, approved or preferred land uses are evaluated and compared (c) Measures proposed to avoid or minimise any incompatibility are considered.	The Proposed Modification is expected to improve compatibility with other land uses, by reducing noise and visual impacts on nearby residences
12A: Voluntary Land Acquisition and Mitigation Policy (VLAMP)	The consent authority must consider the application of the VLAMP.	No voluntary acquisition or mitigation rights are applicable in respect of the Proposed Modification
13: Compatibility with extractive industry	The consent authority must consider the existing and approved uses of land in the vicinity of the development and whether the development is likely to effect the future recovery of resources.	The Proposed Modification does not impact the recovery of extractive materials
14: Natural Resources	The consent authority must consider whether or not consent should be granted subject to conditions to ensure the following: <ul style="list-style-type: none"> <li>• that impacts on significant water resources, including surface and groundwater resources, are avoided, or are minimised to the greatest extent practicable</li> <li>• that impacts on threatened species and biodiversity, are avoided, or are minimised to the greatest extent practicable</li> <li>• that greenhouse gas emissions are minimised to the greatest extent practicable.</li> </ul>	The development, as is it proposed to be modified, will be carried out in accordance with all existing conditions regulating impacts on water resources, threatened species and biodiversity and greenhouse gas emissions



Clause	Description	Comment
15: Resource Recovery	The consent authority must consider the efficiency of the development with respect to resource recovery	The Proposed Modification will not impact resource recovery
16: Transportation	<p>The following transport-related issues are considered:</p> <ul style="list-style-type: none"> <li>the transport of some or all of the materials from the site by means other than public road</li> <li>limitation of the number of truck movements that occur on roads within residential areas or roads near to schools</li> <li>the preparation of a code of conduct for the transportation of materials on public roads</li> </ul>	The Proposed Modification will not change approved transport arrangements
17: Rehabilitation	<p>The rehabilitation of the land affected by the development is considered including:</p> <ul style="list-style-type: none"> <li>the preparation of a plan that identifies the proposed end use and landform of the land once rehabilitated</li> <li>the appropriate management of development generated waste</li> <li>remediation of any soil contaminated by the development</li> <li>the steps to be taken to ensure that the state of the land does not jeopardize public safety, while being rehabilitated or at the completion of rehabilitation.</li> </ul>	No changes to rehabilitation are proposed