

# HAERSES ROAD QUARRY

## NOISE MANAGEMENT PLAN

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Version V1a

Client: Dixon Sand (No. 1) Pty Ltd

Prepared by: Project Environmental Services Pty Ltd

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## Disclaimer

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## Document Control

Revision No.	Reviewer		Approved for Issue		Comments
	Name	Date	Name	Date	
Umwelt V1 to V3					NMP versions V1 (Jun 2018) to V3 (Apr 2020) previously composed in Umwelt Pty Ltd document template.
PES V1	Hunny Churcher	25/11/2021	Mark Dixon	26/11/2021	The contents of NMP V3 (Apr 2020) were transferred to PES document template. The NMP was reviewed and revised to address the requirements of DA Modifications 3 and 4 consent conditions.
PES V1a	Hunny Churcher	17/05/2022	Chris Churcher	17/05/2022	Address DPE's Request for additional information (letter dated 28/03/2022)

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# 1.0 Introduction

## 1.1 Background

Dixon Sand (No. 1) Pty Limited (Dixon Sand) operates the Haerses Road Quarry (the Quarry) located on Haerses Road at Maroota, New South Wales (NSW) (refer to **Figure 1.1**), a sand extraction and processing operation. The Quarry has been in operation since 2006. The site is approximately 71 hectares (ha) and includes Lot 170 DP 664766, Lot 170 DP 664767, Lots A and B DP 407341, Lots 176 and 177 DP 752039 and Lot 216 DP 752039 (refer to **Figure 1.2**). The Quarry is located in the small rural community of Maroota which supports a number of other sand extraction operations, including the Old Northern Road Quarry which is also operated by Dixon Sand. The Quarry supplies concrete sand and specialty sands to the Sydney metropolitan market.

The Quarry operates in accordance with Development Consent (DA 165-7-2005) by the Minister for Planning on 14 February 2006. The following Modifications to the Development Consent have been approved:

- Modification 1 under Section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act) on 22 January 2018,
- Modification 2 under Section 4.55(A) of the EP&A Act on 29 January 2019,
- Modification 4 under Sections 4.15(1) and 4.55(1A) of the EP&A Act on 29 June 2021, and
- Modification 3 under Section 4.55 of the EP&A Act on 23 July 2021.

The Development Consent permits the extraction and processing of 495,000 tonnes per annum (tpa). Transport of up to 190,000 tpa of quarry product to the Old Northern Road Quarry for processing, located approximately 2 kilometres (km) to the north, is permitted. A total of 250,000 tonnes of Virgin Excavated Natural Material and/or Excavated Natural Material (VENM / ENM) may be imported into the Quarry for rehabilitation and/or processing in each calendar year. A total of 180 daily truck movements (either arrival or dispatch, and includes transfers between Haerses Road and Old Northern Road quarries) is permitted. Of the total daily truck movement limit, 20 truck movements (arrival or dispatch) is permitted between 6:00 and 7:00 am.

The Development Consent permits quarrying operations to be carried out on site until 14 February 2046.

## 1.2 Purpose and Scope

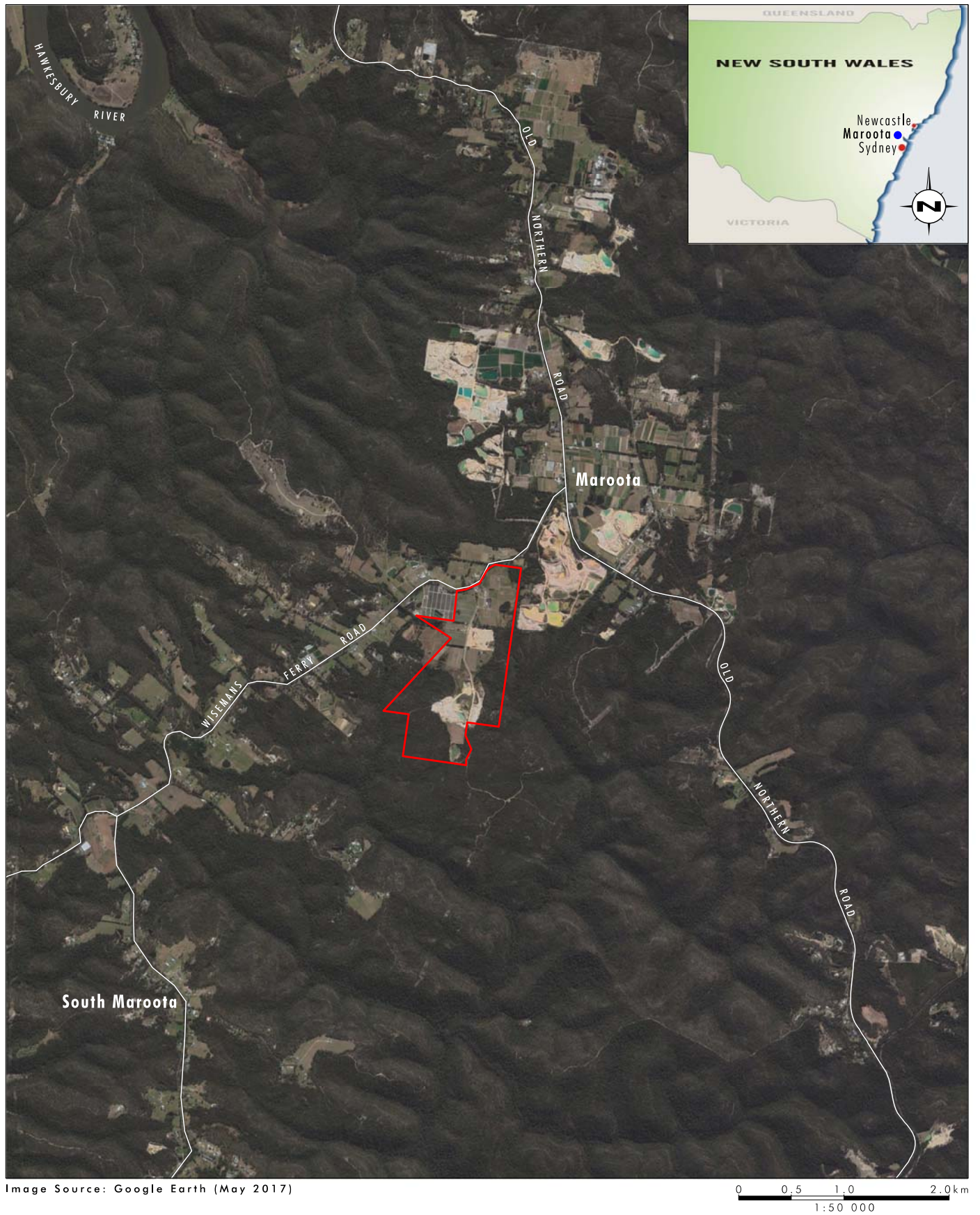
The purpose of this Noise Management Plan (NMP) is to describe the noise management strategies, procedures, controls and monitoring programs to be implemented for the management of potential noise impacts arising from the operation of Haerses Road Quarry.

This NMP applies to Lot 170 DP 664766, Lot 170 DP 664767, Lots A and B DP 407341, Lots 176 and 177 DP 752039 and Lot 216 DP 752039 as shown on **Figure 1.2**.

This NMP addresses the relevant requirements of the Development Consent and Environment Protection Licence (EPL) 12513. The Development Consent conditions, Environmental Impact Statement (EIS), Environmental Assessment (EA) and Statement of Environmental Effects (SEE) management commitments relevant to this plan are provided in **Section 2.1**. EPL conditions relevant to this plan are provided in **Section 2.2**.

This NMP has also been developed in accordance with the requirements of the Department of Planning and Environment's (DPE) Environment Management Plan Guidelines (the guidelines). A checklist of where each condition has been addressed within this document is shown in **Appendix 1**.

It should be noted that in addition to this NMP, a separate Construction Noise Management Plan (CNMP) specific to the construction of acoustic bunds at the Quarry has been developed.



**Legend**  
 Haerses Road Quarry Site

**FIGURE 1.1**  
**Locality Map**



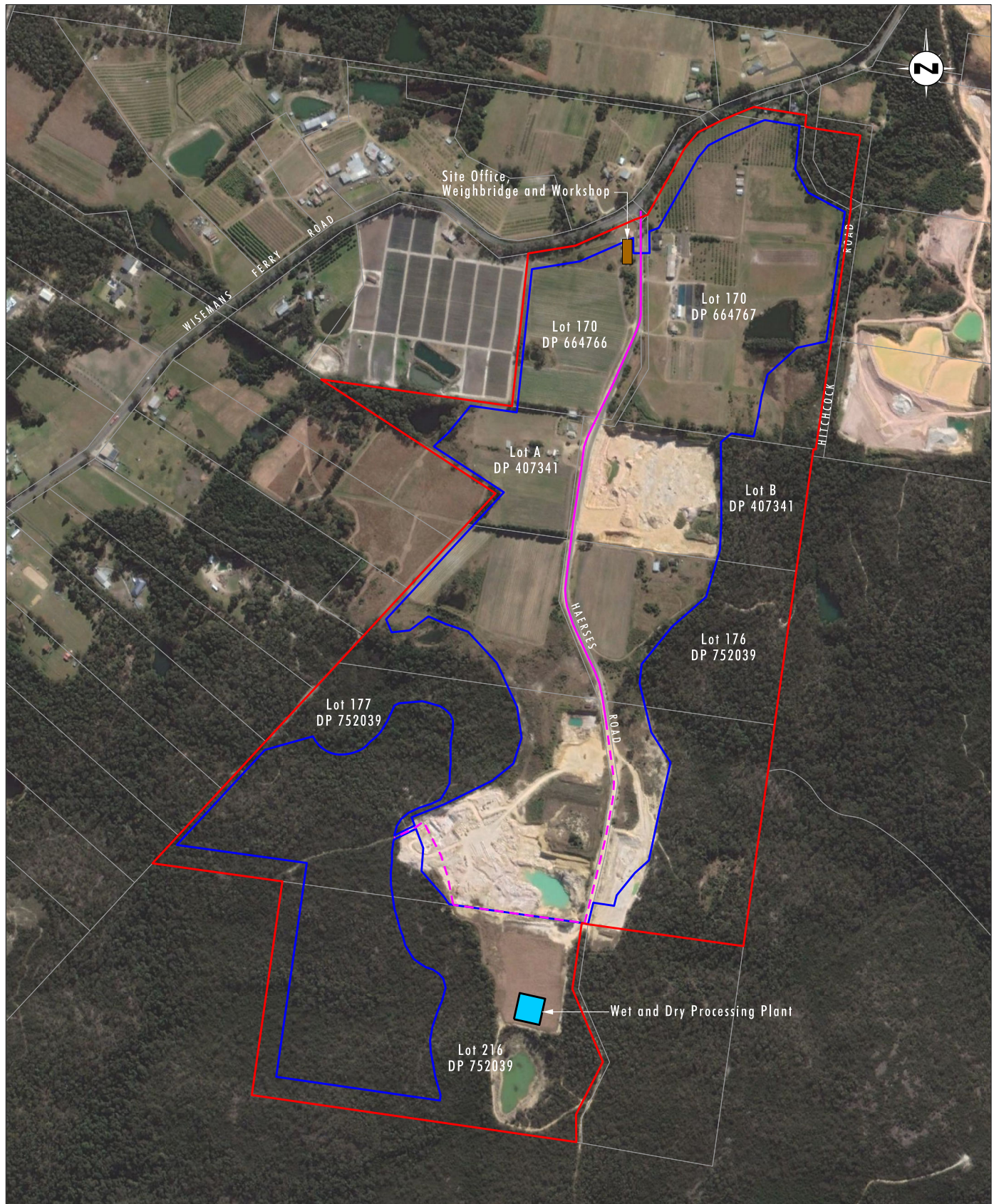


Image Source: Google Earth (Sep 2017)  
Data Source: Mc Kinlay Morgan & Associates Pty Ltd (2014)

0 100 250 500m  
1:10 000

#### Legend

- Haerses Road Quarry Site
- Approved Extraction Stages
- Site Office, Weighbridge and Workshop
- Wet Processing Plant
- Indicative Unsealed Haul Road
- Sealed Haul Road

FIGURE 1.2

Haerses Road Quarry

## 2.0 Regulatory Requirements

### 2.1 Development Consent Conditions

**Table 2.1** identifies the relevant noise related Development Consent conditions and where they have been addressed within this NMP.

**Table 2.1: Noise Related Development Consent Conditions Regulatory Requirements**

Condition	Description	Section/s Addressed																				
Schedule 3 – Specific Environmental Conditions																						
Hours of Operation																						
1	<p>The Applicant must comply with the operating hours set out in Table 1 below.</p> <p><i>Table 1: Operating hours</i></p> <table><tr><th>Activity</th><th>Permissible Hours</th></tr><tr><td rowspan="2">Quarrying operations (excluding truck arrival, loading and dispatch)</td><td>7.00 am to 6.00 pm Monday to Saturday</td></tr><tr><td>At no time on Sundays or public holidays</td></tr><tr><td rowspan="2">Truck arrival, loading and dispatch</td><td>6.00 am to 6.00 pm Monday to Saturday</td></tr><tr><td>At no time on Sundays or public holidays</td></tr><tr><td rowspan="2">Acoustic bund construction and road and intersection works on Haerses Road and Wisemans Ferry Road</td><td>8.00 to 5.00 pm Monday to Friday</td></tr><tr><td>At no time on Saturdays, Sundays or public holidays</td></tr><tr><td>Maintenance</td><td>At any time, provided that these activities are not audible at any privately-owned residence outside of permissible hours for quarrying operations</td></tr></table>	Activity	Permissible Hours	Quarrying operations (excluding truck arrival, loading and dispatch)	7.00 am to 6.00 pm Monday to Saturday	At no time on Sundays or public holidays	Truck arrival, loading and dispatch	6.00 am to 6.00 pm Monday to Saturday	At no time on Sundays or public holidays	Acoustic bund construction and road and intersection works on Haerses Road and Wisemans Ferry Road	8.00 to 5.00 pm Monday to Friday	At no time on Saturdays, Sundays or public holidays	Maintenance	At any time, provided that these activities are not audible at any privately-owned residence outside of permissible hours for quarrying operations	Section 5.0							
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Quarrying operations (excluding truck arrival, loading and dispatch)	7.00 am to 6.00 pm Monday to Saturday																					
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	At no time on Saturdays, Sundays or public holidays																					
Maintenance	At any time, provided that these activities are not audible at any privately-owned residence outside of permissible hours for quarrying operations																					
2	<p>The following activities may be carried out outside the hours specified in condition 1 above:</p> <ul style="list-style-type: none"><li>• delivery or dispatch of material as requested by the NSW Police Force or other public authorities; and</li><li>• emergency work to avoid the loss of lives, property or to prevent environmental harm.</li></ul> <p>In such circumstances, the Applicant must notify the Secretary and affected residents prior to undertaking the activities, or as soon as is practical thereafter.</p>	Section 5.0																				
3	<p>The Applicant must ensure that operational noise generated by the development (excluding acoustic bund construction) does not exceed the criteria in Table 2 below at any residence on privately-owned land.</p> <p><i>Table 2: Operational noise criteria dB(A)</i></p> <table><tr><th rowspan="2">Receiver</th><th>Day</th><th colspan="2">Shoulder (6.00 am to 7.00 am)</th></tr><tr><th>L<sub>Aeq</sub> (15 minute)</th><th>L<sub>Aeq</sub> (15 minute)</th><th>L<sub>A(max)</sub></th></tr><tr><td>R05, R06</td><td>41</td><td>35</td><td rowspan="4">52</td></tr><tr><td>R03</td><td>40</td><td>37</td></tr><tr><td>R13, R14</td><td>40</td><td>36</td></tr><tr><td>All other receivers</td><td>40</td><td>35</td></tr></table>	Receiver	Day	Shoulder (6.00 am to 7.00 am)		L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>A(max)</sub>	R05, R06	41	35	52	R03	40	37	R13, R14	40	36	All other receivers	40	35	Sections 4.0, 5.0 and 6.0
Receiver	Day		Shoulder (6.00 am to 7.00 am)																			
	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>A(max)</sub>																			
R05, R06	41	35	52																			
R03	40	37																				
R13, R14	40	36																				
All other receivers	40	35																				



Condition	Description	Section/s Addressed
	<p>Noise generated by the development must be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the <i>NSW Noise Policy for Industry</i>.</p> <p>However, the noise criteria in Table 2 do not apply if the Applicant has an agreement with the relevant landowner to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.</p> <p><i>Notes:</i></p> <ul style="list-style-type: none"> <li>• <i>Should an agreement with a landowner be terminated for any reason, the Applicant must comply with the noise criteria in Table 2.</i></li> <li>• <i>Receiver locations are shown in Appendix 5</i></li> </ul>	
<b>Operating Conditions</b>		
7	<p>The Applicant must:</p> <ul style="list-style-type: none"> <li>• take all reasonable steps to minimise the construction, operational, low frequency and road transportation noise of the development;</li> <li>• take all reasonable steps to minimise the noise impacts of the development during noise-enhancing meteorological conditions;</li> <li>• operate a noise management system to guide the day to day planning of quarrying operations and the implementation of noise mitigation measures to ensure compliance with the relevant conditions of this consent</li> <li>• carry out regular attended noise monitoring in accordance with Appendix 5 of the Development Consent to determine whether the development is complying with the relevant conditions of this consent; and</li> <li>• modify or stop operations on the site to comply with the relevant conditions of this consent.</li> </ul> <p><i>Note: Monitoring under this consent is not required at all residences and the use of representative monitoring locations can be used to demonstrate compliance with criteria, if agreed to by the Secretary.</i></p>	Sections 5.0 and 6.0
<b>Noise Management Plan</b>		
8	<p>The Applicant must prepare a NMP for the development to the satisfaction of the Secretary. This plan must:</p> <ol style="list-style-type: none"> <li>be prepared in consultation with the EPA;</li> <li>be submitted to the Secretary for approval within 6 months of the approval of Modification 1, unless otherwise agreed by the Secretary;</li> <li>describe the measure to be implemented to ensure: <ul style="list-style-type: none"> <li>• compliance with the noise criteria and operating conditions of this consent;</li> <li>• best practice management is being employed; and</li> <li>• the noise impacts of the development are minimised during noise-enhancing meteorological conditions;</li> </ul> </li> <li>describe the proposed noise management system;</li> <li>include a noise monitoring program that: <ul style="list-style-type: none"> <li>• is capable of evaluating the performance of the development;</li> </ul> </li> </ol>	Whole Document

Condition	Description	Section/s Addressed
	<ul style="list-style-type: none"> <li>includes a protocol for determining any exceedances of the relevant conditions of this consent;</li> <li>effectively supports the noise management system; and</li> </ul> <p>(f) include a program to either;</p> <ul style="list-style-type: none"> <li>attenuate the dump trucks prior to commencing quarrying operations in Stage 4 or 5; or</li> <li>identify alternative mitigation measures and demonstrate that these measures will be implemented to achieve compliance with the noise criteria in this consent at all times.</li> </ul> <p>The Applicant must implement the NMP as approved by the Secretary.</p>	
<b>Meteorological monitoring</b>		
12	<p>For the life of the development, the Applicant must ensure that there is a suitable station operating in the vicinity of Maroota Public School that:</p> <p>(b) is capable of measuring meteorological conditions in accordance with the <i>NSW Noise Policy for Industry</i> (EPA, 201), unless a suitable alternative is approved by the Planning Secretary following consultation with the EPA.</p>	Section 5.0
<b>Schedule 5</b>		
<b>Access to Information</b>		
15	<p>Within 3 months of the determination of Modification 1, until the completion of all works, including rehabilitation and remediation the Applicant must:</p> <p>(a) make the following information publicly available on its website:</p> <ul style="list-style-type: none"> <li>the documents listed in condition 2(a) of Schedule 2;</li> <li>current statutory approvals for the development;</li> <li>all approved strategies, plans and programs required under the conditions of this consent;</li> <li>a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;</li> <li>a complaints register, updated monthly;</li> <li>the annual reviews of the development;</li> <li>any independent environmental audit as described in condition 13 above, and the Applicant's response to the recommendations in any audit; and</li> <li>any other matter required by the Secretary; and</li> </ul> <p>(b) keep this information up-to-date, to the satisfaction of the Secretary.</p>	

### 2.1.1 EIS Environmental Management Commitments

Condition 2 Schedule 2 of the Development Consent stipulates that, the Quarry must be developed and operated generally in accordance with the EIS and EA reports prepared for the development and subsequent modifications.

**Table 2.2** summarises the management commitments relating to noise management that have been identified in the EIS (ERM, 2005) and EA (Umwelt, 2016) reports.

**Table 2.2: Relevant EIS and EA Noise Management Commitments**

Source	Description	Section/s Addressed
EA Section 6.5.4.3 (Umwelt, 2016)	The INP requires the implementation of reasonable and feasible noise mitigation measures to meet and minimise any exceedances of noise criteria	Section 5.0
	During early extraction works (at or near surface level) in Cells 4 and 5, product to be stockpiled and hauled away separately so that extraction does not occur simultaneously with haulage.	Section 5.0
EA Section 6.5.4.4 (Umwelt, 2016)	It is noted that the INP (refer Section 11.1.3) considers that a development will be deemed to be in non-compliance with a noise consent or licence condition if the monitored noise level is more than 2 dB above the statutory noise limit specified in the consent or licence condition. Should greater exceedances be experienced, further noise management and mitigation measures would be investigated. Some examples of measures that can potentially be investigated in this event include temporarily shutting down some equipment/operations and construction of intermediate bund walls within the extraction cells.	Section 5.0
EA Section 6.5.7 (Umwelt, 2016)	Incorporate additional 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.	Sections 5.0 and 6.0
EIS Section 7.2.2 (ERM, 2005)	Noise Attenuation Noise mitigation measures include: <ul style="list-style-type: none"> <li>• placing the mobile screen very near to the working extraction face to ensure noise shielding and operational efficiency;</li> <li>• ensuring machines are in a well-maintained condition (eg mufflers) and reducing “track slap” annoyance by limiting the use of higher gears if possible.</li> </ul>	Section 5.0
SEE Section 8.0 (Umwelt, 2019)	<ul style="list-style-type: none"> <li>• Continue to implement the Noise Management Plan (2019)</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>	Section 5.0

## 2.2 Environmental Protection Licence

Noise monitoring will be undertaken in accordance with the conditions of EPL 12513. The EPL was issued by the Environment Protection Authority (EPA) under the *Protection of the Environment Operations Act 1997* (POEO Act) for sand extraction operations at Haerses Road and intersection of Wiseman Ferry Road, Maroota NSW 2756.

A list of the EPL conditions relating to noise monitoring and an indication of where they are addressed within this document are included in **Table 2.3**.

Noise criteria listed in Condition L3.1 of the current EPL reflects the noise criteria contained in Development Consent (Modifications 1 and 2) and are inconsistent with the noise criteria of Development Consent (Modification 3).

An application to vary the EPL to align the EPL noise criteria with limits under the modified Development Consent has been lodged with the EPA on 10 December 2021. Until the EPL variation has been issued with the new noise

criteria, the current licence limit and monitoring conditions of EPL 12513 (5 February 2022) must be complied with. Once the EPL variation has been issued, the monitoring program will be updated to reflect these changes.

**Table 3.3: Relevant Environment Protection Licence Conditions**

Condition	Description	Section/s Addressed																																																		
L3.1	Noise generated at the premises must not exceed the noise limits presented in the table below. Note that the noise limits represent the noise contribution from the Haerses Road sand quarry site at Maroota.	Section 4.0																																																		
	<table><tr><th>Receiver</th><th>Location</th><th>Day</th><th>Shoulder (6am to 7am)</th><th>Shoulder (6am to 7am)</th></tr><tr><td></td><td></td><td>LAeq(15 minutes)</td><td>LAeq(15 minutes)</td><td>LA(max)</td></tr><tr><td>R1</td><td>1725 Wisemans Ferry Road</td><td>37</td><td>37</td><td>45</td></tr><tr><td>R2</td><td>1700 Wisemans Ferry Road</td><td>40</td><td>40</td><td>45</td></tr><tr><td>R3</td><td>1643 Wisemans Ferry Road</td><td>38</td><td>38</td><td>45</td></tr><tr><td>R4</td><td>1617 Wisemans Ferry Road</td><td>37</td><td>37</td><td>45</td></tr><tr><td>R6</td><td>1543 Wisemans Ferry Road</td><td>37</td><td>35</td><td>45</td></tr><tr><td>R7</td><td>1539 Wisemans Ferry Road</td><td>36</td><td>35</td><td>45</td></tr><tr><td>R8</td><td>1521 Wisemans Ferry Road</td><td>36</td><td>35</td><td>45</td></tr><tr><td>All other residences on privately owned land</td><td></td><td>35</td><td>35</td><td>45</td></tr></table>		Receiver	Location	Day	Shoulder (6am to 7am)	Shoulder (6am to 7am)			LAeq(15 minutes)	LAeq(15 minutes)	LA(max)	R1	1725 Wisemans Ferry Road	37	37	45	R2	1700 Wisemans Ferry Road	40	40	45	R3	1643 Wisemans Ferry Road	38	38	45	R4	1617 Wisemans Ferry Road	37	37	45	R6	1543 Wisemans Ferry Road	37	35	45	R7	1539 Wisemans Ferry Road	36	35	45	R8	1521 Wisemans Ferry Road	36	35	45	All other residences on privately owned land		35	35	45
	Receiver		Location	Day	Shoulder (6am to 7am)	Shoulder (6am to 7am)																																														
				LAeq(15 minutes)	LAeq(15 minutes)	LA(max)																																														
	R1		1725 Wisemans Ferry Road	37	37	45																																														
	R2		1700 Wisemans Ferry Road	40	40	45																																														
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	R4		1617 Wisemans Ferry Road	37	37	45																																														
	R6		1543 Wisemans Ferry Road	37	35	45																																														
	R7		1539 Wisemans Ferry Road	36	35	45																																														
R8	1521 Wisemans Ferry Road	36	35	45																																																
All other residences on privately owned land		35	35	45																																																
L3.2	<p>For the purpose of condition L3.1</p> <ul style="list-style-type: none"><li>Day is defined as the period from 7am to 6pm Sunday and Public Holidays.</li><li>Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays.</li></ul>	Section 4.0																																																		
L3.3	Noise from the premises is to be measured at the most affected point or within the residential boundary or at the most affected point within 30m of the dwelling (rural situations) where the dwelling is more than 30m from the boundary to determine compliance with the LAeq(15 minute) noise limit in condition L3.1.	Section 6.0																																																		
	Where it can be demonstrated that direct measurement of noise from the premises is impractical, the EPA may accept alternate means of determining compliance. See relevant chapter of the NSW Noise Policy for Industry.																																																			
	The modification factors presented in Fact Sheet C of the NSW Noise Policy for Industry must also be applied to the measured noise levels where applicable.																																																			
	<b>Definition</b>																																																			
	LA10(15 minute) is the sound pressure level that is exceeded for 10% of the time when measured over a 15 minute period.																																																			
	<b>Note: Noise measurement</b>																																																			
	For the purpose of noise measures required for this condition, the LA10 noise level must be measured or computed at any point specified in the table above over a period of																																																			
	15 minutes using “FAST” response on the sound level meter.																																																			
	For the purpose of the noise criteria for this condition, 5dBA must be added to the measured level if the noise is substantially tonal or impulsive in character.																																																			
	The location or point of impact can be different for each development.																																																			
Measurement locations can be:																																																				



Condition	Description	Section/s Addressed
	<ul style="list-style-type: none"> <li>1 metre from the facade of the residence for night time assessment;</li> <li>at the residential boundary, 30 metres from the residence (rural situations) where boundary is more than 30 metres from residence.</li> </ul>	
<b>L3.4</b>	Noise from the premises is to be measured at 1m from the dwelling façade to determine compliance with the LA (max) noise level in condition L3.1.	Section 6.0
<b>L3.5</b>	<p>The noise emission limits identified in condition L3.1 apply under all meteorological conditions (wind speed up to 3m/s at 10 metres above ground level), except under conditions of temperature inversions. Noise impacts that may be enhanced by temperature inversions must be addressed by:</p> <ul style="list-style-type: none"> <li>Documenting noise complaints received to identify any higher level of impacts or patterns of temperature inversions; and</li> <li>Where levels of noise complaints indicate a higher level of impact then actions to quantify and ameliorate any enhanced impacts under temperature inversions conditions should be developed and implemented.</li> </ul>	Section 4.0
<b>L3.6</b>	Activities at the premises, other than construction work, may only be carried out between 0600 hours and 1800 hours Monday to Saturday, and at no time on Sundays and Public Holidays.	Section 5.0
<b>L3.7</b>	This condition does not apply to the delivery of material outside the hours of operation permitted by condition L3.6, if that delivery is required by police or other authorities for safety reasons; and/or the operation or personnel or equipment are endangered. In such circumstances, prior notification is provided to the EPA and affected residents as soon as possible, or within a reasonable period in the case of emergency.	Section 5.0
<b>L3.8</b>	The hours of operation specified in conditions L3.6 may be varied with written consent if the EPA is satisfied that the amenity of the residents in the locality will not be adversely affected.	

## 2.3 Guidelines, Policies and Standards

Dixon Sand will manage noise from operations and undertake environmental monitoring in accordance with the following guidelines, policies and standards applicable to noise management at the Quarry:

- Noise Policy for Industry (2017)
- NSW Industrial Noise Policy (EPA, 2000)
- AS IEC 61672.1-2004 Electroacoustics – Sound level meters – Specifications
- AS1055.1:1997 Acoustics – Description and Measurement of Environment Noise – General Procedures.

## 2.4 Stakeholder Consultation

In accordance with Condition 8(a) Schedule 3 of the Development Consent, this NMP has been prepared in consultation with the EPA. A copy of correspondence provided by the EPA and a summary of how these issues have been addressed is provided in **Appendix 2**.

## 2.5 Further Studies

There are no requirements under the Development Consent to undertake any further studies relevant to the NMP.

## 2.6 Hold Points

Hold Point 1

Condition 8(f) of Schedule 3 of the Development Consent requires Dixon Sand to include a program to either:

- Attenuate the dump trucks prior to commencing quarrying in Stages 4 or 5 (tertiary deposit only); or
- Identify alternative mitigation measures and demonstrate that these measures will be implemented to achieve compliance with the noise criteria in this consent at all times.

## 3.0 Existing Air Quality Environment

The Quarry is located within a rural environment with typically low background noise levels. Existing noise sources include local road traffic, agricultural activities and industrial contributions from other surrounding quarries (Umwelt, 2019).

### 3.1 Sensitive Receivers

The site is located on the south western outskirts of the rural community of Maroota. The Maroota Public School is located approximately 1.6 km to the north of the site.

A number of privately owned dwellings are located near the site. **Figure 3.1** shows the closest privately owned noise-sensitive receptors. These dwellings are in general located on higher land, with the proposed additional extraction area located on the western side of the Quarry, on sloping land facing the dwellings on the opposite side of a small valley (Umwelt, 2016).

Residences to the east of Hitchcock Road and receivers at R2 and R12 are covered by an agreement with Dixon Sand to waive any potential noise impacts, and as such the consent noise conditions do not apply.

### 3.2 Ambient Noise Levels

Previous background noise levels surrounding Haerses Road Quarry were established by ambient noise monitoring as part of the 2005 EIS. The rating background levels (RBLs) were re-established during the noise assessment for the Development Consent Modification 3 at two locations and are provided in **Table 3.1**.

**Table 3.1: Rating Background Levels (RBLs)**

Location	L <sub>Aeq</sub> Day 7.00am – 6.00pm	L <sub>Aeq</sub> Evening 6.00pm – 10.00pm	L <sub>Aeq</sub> Night 10.00pm – 7.00am	RBL Day 7.00am – 6.00pm	RBL Evening 6.00pm – 10.00pm	RBL Night 10.00pm – 7.00am
<b>L1</b> 1643 Wisemans Ferry Road, Maroota	60	53	54	36	32	27
<b>L2</b> 5 Hitchcock Road (corner Wisemans Ferry Road), Maroota	60	48	47	34	31	24

### 3.3 Quarry Plant, Equipment and Vehicles

The following fixed and mobile plant generally operates at the Quarry site:

- Komatsu 375A dozer
- Caterpillar 972G front end loader
- 40 tonne excavator
- 30 tonne dump trucks
- Product trucks
- Water cart
- Caterpillar 12G grader (irregularly)
- Service vehicle (irregularly)
- Mobile dry screening plant
- Mobile crushers (one rotary and one jaw crusher)
- Wet processing plant



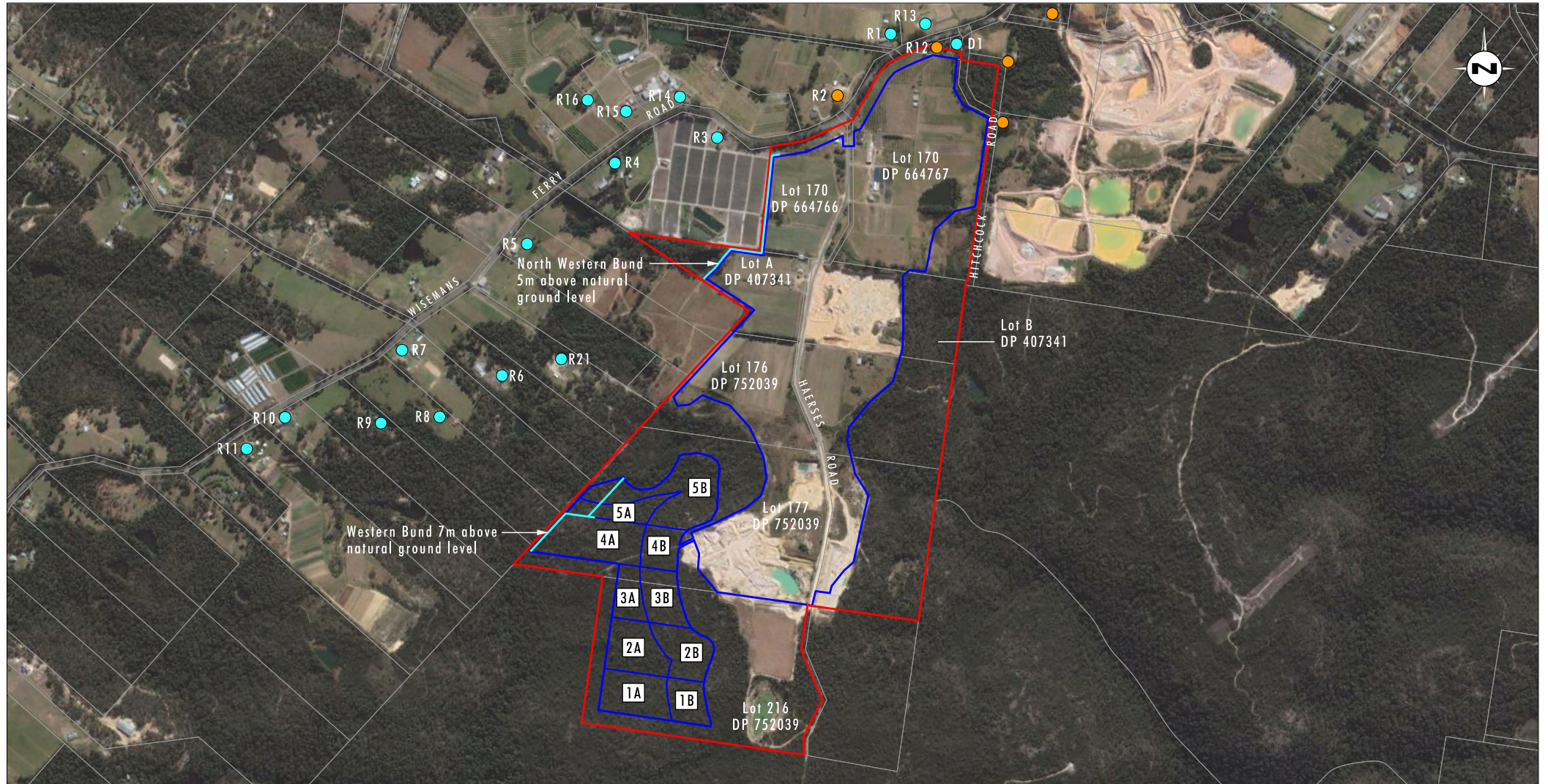


Image Source: Google Earth (Sep 2017)

Data Source: Mc Kinlay Morgan & Associates Pty Ltd (2014), ERM (2017)

0 250 500 750m  
1:15 000

### Legend

- Haerses Road Quarry Site
- Approved Extraction Area
- 1 Extraction Cell Number
- Noise Receiver Location
- Noise Receiver with Private Agreement
- Acoustic Bund

File Name (A4): R08/4272\_013.dgn  
20180413 10.08

FIGURE 3.1

Haerses Road Quarry  
Noise Receiver Locations  
and Acoustic Bunds

## 4.0 Noise Criteria

Noise criteria for the Quarry are established by Condition 3 Schedule 3 of the Development Consent. The criteria contained in the Development Consent are provided in **Table 4.1**. Note, the landowners at R2 and R12 have an agreement with Dixon Sand and therefore the criteria below do not apply.

**Table 4.1: Noise Criteria dB(A)**

Receiver	Day	Shoulder (6.00 am to 7.00 am)	
	L <sub>Aeq</sub> (15 minutes)	L <sub>Aeq</sub> (15 minutes)	L <sub>A</sub> (max)
R05, R06	41	35	52
R03	40	37	
R13, R14	40	36	
All other receivers	40	35	

*\*Note: These criteria do not apply as a noise agreement has been established. Should an agreement with a landowner be terminated for any reason, Dixon Sand must comply with the criteria.*

### 4.1 Noise Criteria - Exemptions

In accordance with Condition 3 Schedule 3, noise generated by the development is to be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the INP. Appendix 5 of the Development Consent sets out the meteorological conditions under which these criteria apply and the requirements for evaluation compliance with the criteria. In particular, the noise criteria do not apply under the following conditions:

- Wind speeds greater than 3m/s at 10 m above ground level; or
- Temperature inversion conditions between 1.5 °C and 3 °C/100 m and wind speed greater than 2 m/s at 10 m above ground level; or
- Temperature inversion conditions greater than 3 °C/100 m.

Condition 3 Schedule 3 also confirms that the noise criteria outlined in **Table 4.1** do not apply if Dixon Sands has an agreement with the owner/s of the relevant residents to exceed the noise criteria, and the Department has been advised in writing of the terms of this agreement.

**Table 4.2 – Negotiated Agreements**

Receiver	Address	Department Advised of Agreement
R2	Portion 91 DP397251 1700 Wisemans Ferry Road, Maroota	The agreement was submitted as part of the documentation for the development approval application in 2005.
R12	1725 Wisemans Ferry Road, Maroota	The agreement was submitted as part of the documentation for the development approval modification 3 in 2019.

Should an agreement with a landowner be terminated for any reason, Dixon Sand will comply with the noise criteria outlined in **Table 4.1**.



## 5.0 Noise Management Measures

### 5.1 Proactive Management Measures

Dixon Sand is committed to implementing reasonable and feasible measures to minimise the potential noise impacts of the operation on nearby sensitive receivers. A range of noise management and mitigation measures are utilised at the Quarry to limit the generation of noise and mitigate noise impacts. A summary of these measures is provided in **Table 5.1**.

**Table 5.1: Proactive Noise Management Measures**

Management or Mitigation Measure	Timing	Responsibility	Performance Indicator
Compliance with approved hours of operations in the Development Consent	Ongoing	Quarry Manager/ Environmental Officer	Operations records
Ensure reviews of meteorological forecasts are undertaken on a daily basis prior to the commencement of operations	Ongoing	Quarry Manager	Pre start meetings Tool box talks
In the wet processing plant area, locate stockpiles along the western boundary of the area to shield loading/unloading activities. In particular, locating stockpiles as close as possible to the crushers and screen, between the plant items and the nearest receivers (in particular R6 and R8)	Ongoing	Quarry Manager/ Environmental Officer	Site Condition Checklist records
When excavating within the extraction pits, where and when possible, excavation will be such that the western excavation face is the working face. This maximises acoustic shielding.	During excavation within extraction pits	Quarry Manager	Site Condition Checklist records
Where noise from the dry and wet plant is found to be directional, orientate the plant so that the quieter direction is towards the closest and most affected receptors (e.g. R6 and R8)	Ongoing	Quarry Manager	Site Condition Checklist records
Make operators of mobile plant aware of measures to minimise impacts on sensitive receivers, particularly during operations in Cells 4 and 5, and provide adequate training so that quiet operating procedures can be implemented, where feasible and reasonable	Prior to works and ongoing	Quarry Manager/ Environmental Officer	Site Condition Checklist records Training records
Utilise stockpiles located between near surface loading activities in the extraction cells and nearest receivers (in particular R6 and R8), where this is possible	Ongoing	Quarry Manager	Site Condition Checklist records
Either one of a dozer or front end loader (not both) to operate in Cell 4 and Cell 5 during early extraction, clearing or construction of bund walls, to minimise noise	Ongoing	Quarry Manager	Site Condition Checklist records

Management or Mitigation Measure	Timing	Responsibility	Performance Indicator
Additional 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	During extraction operations	Quarry Manager/ Environmental Officer	Monitoring reports
Schedule the use of noisy equipment at the least-sensitive time of day	Ongoing	Quarry Manager	Site Condition Checklist records Complaints register
Avoid the use of radios or stereos outdoors where neighbours can be affected	Ongoing	Quarry Manager	Complaints register
Undertake noise monitoring in accordance with the noise monitoring program ( <b>Section 6.0</b> )	Ongoing	Environmental Officer	Monitoring reports
Regular maintenance of road surfaces, vehicles and equipment to reduce noise emissions	Ongoing	Quarry Manager/ Environmental Officer	Maintenance records
Switch off plant when not in use and use of automatic idle shutdown	Ongoing	Quarry Manager	Induction records
Ensuring all new equipment is procured against a specification for noise emission to meet noise criteria at the nearest private residences for total operations	Ongoing	Quarry Manager/ Environmental Officer	Procurement records
Attenuate the dump trucks prior to commencing quarrying in Stage 4 or 5 of Tertiary sand deposit	Prior to Stage 4 or 5	Quarry Manager	Procurement / Maintenance records

### 5.1.1 Training and Awareness

All personnel and contractors working at the Quarry will undergo an induction. This induction includes information on the management of noise while working on site.

Tool-box meetings are held to discuss whole-of-site production, management, safety and environmental issues. Matters relating to noise will be raised during these meetings, when necessary.

## 5.2 Reactive Management Measures

In addition to the operational controls outlined in **Section 5.1**, specific reactive management measures will be implemented in response to identified triggers. Noise triggers and responses are outlined in **Table 5.2**.



**Table 5.2: Reactive Noise Management Measures**

Trigger	Response/Corrective Action
<b>Receipt of noise complaint</b>	<p>Following a complaint, appropriate action will be taken within 2 working days to determine the cause of the complaint and identify if there are any appropriate actions to be implemented. The following details will be recorded:</p> <ul style="list-style-type: none"> <li>• The date and time of the complaint</li> <li>• Method by which the complaint was made</li> <li>• Personal details of the complainant</li> <li>• Nature of the complaint</li> <li>• Action taken in relation to the complaint, including follow up with the complainant; and</li> <li>• If no action taken, the reasons why no action was taken.</li> </ul> <p>All complaints will be investigated and an appropriate response provided to the complainant. The investigation will include the following:</p> <p>A review of the operations being undertaken at the time of the complaint</p> <p>A review of whether activities outside the normal 'day-to-day' operations were being carried out on site at the time of the complaint</p> <p>A review of whether there were any other noise generating activities which have contributed to noise in the area</p> <p>Recommendation of any actions that will be carried out to resolve the complaint and/or minimise the likelihood of further complaints.</p>
<b>Noise criteria exceedance</b>	<p>If noise monitoring indicates that noise exceeds the approved criteria, the following responses and action plan will be implemented:</p> <ul style="list-style-type: none"> <li>• After identifying an exceedance, the Environmental Officer (or delegated representative) will review meteorological conditions at the time of the exceedance to assess whether these represent conditions for which the noise criteria do not apply (as identified by the NSW Industrial Noise Policy and Appendix 5 of the Development Consent</li> <li>• The Environmental Officer, in consultation with the Quarry Manager, will immediately investigate the source of the noise, review the performance of equipment and if necessary make arrangements to alter the configuration of equipment, or stand down specific equipment, so that the noise levels are reduced to achieve compliance with the noise criteria.</li> <li>• If meteorological conditions were such that the noise criteria did not apply, the Environmental Officer will document the relevant meteorological conditions.</li> <li>• The Quarry Manager (or delegated representative) will immediately notify DPE and any other relevant agencies of the exceedance.</li> <li>• Within 7 days of the date of the exceedance occurring, the Quarry Manager will provide DPE and any other relevant agencies with a detailed report of the exceedance, and any further information or reports which have been requested.</li> <li>• As soon as practicable, and no longer than 7 days, after obtaining monitoring result showing an exceedance of noise criteria, the Quarry manager will notify the affected landowners in writing of the exceedance, and provide regular monitoring results, at least every 3 months, to each affected land owner until the development is again complying with the relevant criteria.</li> <li>• Any exceedance of the noise criteria will be reported in the Annual Review.</li> <li>• In the event of ongoing or regular exceedances of the noise criteria, the Environmental Officer, in consultation with the Quarry Manager will investigate the feasibility of any reasonable additional controls or treatments on individual noise sources within the Quarry, or other long term means of reducing noise levels to comply with the noise criteria.</li> </ul>

Trigger	Response/Corrective Action
<b>Adverse or extraordinary meteorological conditions</b>	<p>Noise criteria do not apply under the meteorological conditions noted in the Noise Policy for Industry (EPA, 2017). Despite this, during periods when these meteorological conditions are forecast or observed, the Quarry Manager will modify operations to minimise potential noise impacts as much as practically possible. This may include but is not limited to:</p> <ul style="list-style-type: none"> <li>• Turning off or limiting operation of mobile equipment or fixed plant,</li> <li>• Redirecting operations to more sheltered areas within the extraction area, and/or</li> <li>• Moving equipment to lower elevations.</li> </ul>

## 6.0 Noise Monitoring

Condition 7(d) Schedule 3 of the Development Consent stipulates that regular attended noise monitoring must be carried out to determine whether the development is complying with the relevant conditions of the consent.

Note that an application for EPL variation has been lodged on 11 December 2011 to amend the noise criteria contained in the EPL to reflect the noise criteria contained in Condition 3 of Schedule 3 of DA165-7-2005 (Modifications 3 and 4). Until the EPL variation has been issued with the new noise criteria, the current licence limit and monitoring conditions of EPL 12513 (5 February 2022) must be complied with. Once the EPL variation has been issued, the monitoring program will be updated to reflect these changes.

### 6.1 Attended Noise Monitoring

In order to monitor noise generated from Haerses Road Quarry operations, attended noise monitoring will be undertaken at the residence nearest to the operational area, as identified for each respective stage of quarrying.

Noise monitoring for both the existing operations and the Mod 1 extraction area will meet the following requirements:

- LAeq(15 minute) noise is to be measured at the most affected point or within the residential boundary, or at the most affected point within 30 m of a dwelling (rural situations) where the dwelling is more than 30 m from the boundary.
- LA(Max) noise is to be measured at 1 m from the dwelling façade during shoulder monitoring between 6am and 7am.
- Attended monitoring is not to be carried out when wind speed exceeds 3m/s or temperature inversion greater than 3°C/100 m is present.

Attended monitoring will record:

- Operator's name
- Monitoring location
- Dates and times that monitoring began and ended at each location
- Distances to building facades or property boundaries
- Qualitative/quantitative meteorological data such as temperature, wind speed, wind direction, cloud cover, humidity, fog, and rainfall (refer to **Section 6.3**)
- Instrument calibration details before and after the monitoring period
- Statistical noise level descriptors over the 15 minute interval
- Notes that identify the noise source that contribute to the peak noise levels (LAmax) and noise sources that contribute to the overall noise environment or for periods of time when a specific noise source is audible
- An estimate of the noise contribution from operations at the quarry or from other identifiable noise sources

- Data suitable for assessing the relative contribution of quarry-generated noise to the overall noise being measured.

In the event of a complaint being received by Dixon Sand regarding noise, and if deemed necessary following investigation (refer **Table 5.2**), attended noise monitoring will be undertaken upon receipt of a noise complaint. In this instance, noise will be monitored at the complaint's premises.

### 6.1.1 Frequency of Attended Noise Monitoring

In the Mod 1 extraction area, attended noise monitoring will occur every 6 months during the first 2 years of operations. After two years, a review will be undertaken of the monitoring results and if it is deemed appropriate, Dixon Sand will seek approval from DPE to revert to annual attended noise monitoring for the remainder of the operations in the Mod 1 extraction area.

Attended noise monitoring will be undertaken for the existing operations (Stages 1 to 5) on an annual basis.

## 6.2 Noise Monitoring Locations

Noise monitoring will be undertaken in locations associated with both the existing operations and the Mod 1 extraction area. Existing operations refers to operating areas Stages 1 to 5 (refer to **Figure 6.1**). The Mod 1 extraction area is also represented in **Figure 6.1**, with this area operating in 'Cells' as opposed to 'Stages'.

Noise monitoring locations for attended noise monitoring during specific stages of the development are shown in **Table 6.1** below. **Table 6.1** shows the noise monitoring locations for each sand extraction stage at the existing operations and for operations within the Mod 1 extraction area.

**Table 6.1: Noise Monitoring Locations for Each Stage and Extraction Cell**

Location	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Mod 1, Extraction cells 1A to 5B
R1	-	-	-	-	✓	-
R3	✓	✓	✓	✓	✓	-
R4	✓	✓	✓	✓	✓	-
R6	-	-	-	-	-	✓
R8	-	-	-	-	-	✓

*Note: Noise monitoring locations are based on predicted noise levels in the EIS (ERM 2005) and a commitment within the EA (Umwelt, 2016) which included that additional noise monitoring be incorporated at locations R6 and R8 (refer to EA Section 6.5.7).*

The EA (Umwelt, 2016) committed to additional noise monitoring at locations R6 and R8 when extraction operations are being conducted in the additional Mod 1 area. Attended noise monitoring will therefore occur at R6 and R8 during the entire operation within the Mod 1 area (i.e. extraction cells 1A through to 5B).

Sensitive receiver monitoring locations are subject to consultation and agreement with the occupant and may change subject to landholder agreement. In the event that access is not available to undertake sensitive receiver monitoring as described above, an alternative noise assessment method deemed acceptable by the EPA will be employed (refer to Section 11 of the INP (EPA, 2000)).



## 6.3 Meteorological Monitoring

In accordance with Condition 12 Schedule 3 of the Development Consent, for the life of the development, Dixon Sand must ensure that there is a suitable meteorological station operating in the vicinity of Maroota Public School that:

- complies with the requirements in the *Approved Methods for Sampling and Analysis of Air Pollutants in NSW* (DEC, 2007); and
- Is capable of measuring meteorological conditions in accordance with the *NSW Noise Policy for Industry* (EPA, 2017),

As such, meteorological data is sourced from the Dixon Sand's weather station as shown on **Figure 6.1**.

The weather station, in accordance with Condition M4 of the EPL, will monitor the parameters specified in **Table 6.1**, and will use the sampling method, units of measure, averaging period and sample at the frequency specified in the other columns of **Table 6.1**.

**Table 6.1: Meteorological Monitoring Parameters and Methods**

Parameter	Units of measure	Frequency	Averaging Period	Sampling Method
Temperature at 10 metres	°C	Continuous	1 hour	AM-4
Wind direction at 10 metres	-	Continuous	15 minute	AM-2 & AM-4
Wind speed at 10 metres	m/s	Continuous	15 minute	AM-2 & AM-4
Sigma theta	-	Continuous	15 minute	AM-2 & AM-4
Rainfall	mm	Continuous	24 hour	AM-4

*Note: Sampling methods are as per Approved Methods for Sampling and Analysis of Air Pollutants in NSW guideline (DEC, 2007)*

## 6.4 Evaluation of Performance

Dixon Sand will require the operator conducting the attended monitoring to advise the Quarry Manager (or delegate) as soon as possible if an exceedance of the noise criteria is recorded (refer to **Section 7.2**).

The results from the attended noise monitoring program provide a quantitative assessment of noise levels from the quarrying activities at each of the respective monitoring locations. Following receipt of the results of the attended noise monitoring, Dixon Sand will review and compare the results with the noise criteria defined in Condition 3 Schedule 3 of the Development Consent (taking into account the provisions of Appendix 5 of the Development Consent) to determine compliance.

The monitoring program will be used to assess the performance of the Quarry, including the Quarry machinery. Dixon Sand is considered to be compliant if, at the time of monitoring, the measured noise levels from the Quarry do not exceed the noise criteria. As quarrying in the Mod 1 extraction area progresses and monitoring data is gathered, this will be compared with the predicted noise impacts in the Environmental Assessment for the modification (Umwelt, 2016). Trends in the data will also be analysed to determine potential ways in which performance can be improved.

### 6.4.1 Noise Compliance Assessment

Appendix 5 of the Development Consent (Modification 1) requires Dixon Sand to undertake a noise compliance assessment within 6 months of the approval of Mod 1, i.e. by July 2018. The assessment must be conducted by a suitably qualified and experienced acoustical practitioner and must assess compliance with the noise criteria outlined in **Section 4.0**. A report must be provided to the Secretary and EPA within 1 month of the assessment.

Dixon Sand completed the noise compliance assessment in accordance with the requirements of the Development Consent (PES, 2018). Attended monitoring at noise sources and at receivers was undertaken on four separate days during June 2018.

Attended noise monitoring was undertaken at the receivers R1, R3, R6, R7 and R10 for day (7am to 5pm) and shoulder (6am to 7am) periods. No permission was granted by the property owners to undertake attended noise monitoring at R4, R5, R8, R9 and R11. At-source noise monitoring was undertaken at Stage 2 (west) extraction area which was the only active extraction area at the time of the compliance assessment (PES, 2018).

The results of the attended noise monitoring and predicted noise impacts from setback calculations indicate that Dixon Sand's Haerses Road Quarry operations were in compliance with the noise assessment criteria at receivers R1 to R11 (inclusive) under the meteorological conditions at the time of monitoring (PES, 2018).

In accordance with the Development Consent (Modification 1), Dixon Sand provided the noise compliance assessment (PES, 2018) to DPE and the EPA on 27 July 2018. In order to further evaluate the performance of the Quarry against the noise criteria, Dixon Sand will undertake noise monitoring as outlined in **Section 6.0**.

The requirement of this specific noise compliance assessment for the Development Consent (Modification 1) has been fulfilled.

### 6.4.2 Noise Management System

Dixon Sand is committed to ensuring that the noise monitoring program effectively supports the noise management system for the Quarry. The noise monitoring program will be evaluated as described above, and as part of the review and improvement measures described in **Section 8.0** in respect of this NMP. The review will reflect changes in environmental expectations, technology and operational procedures.



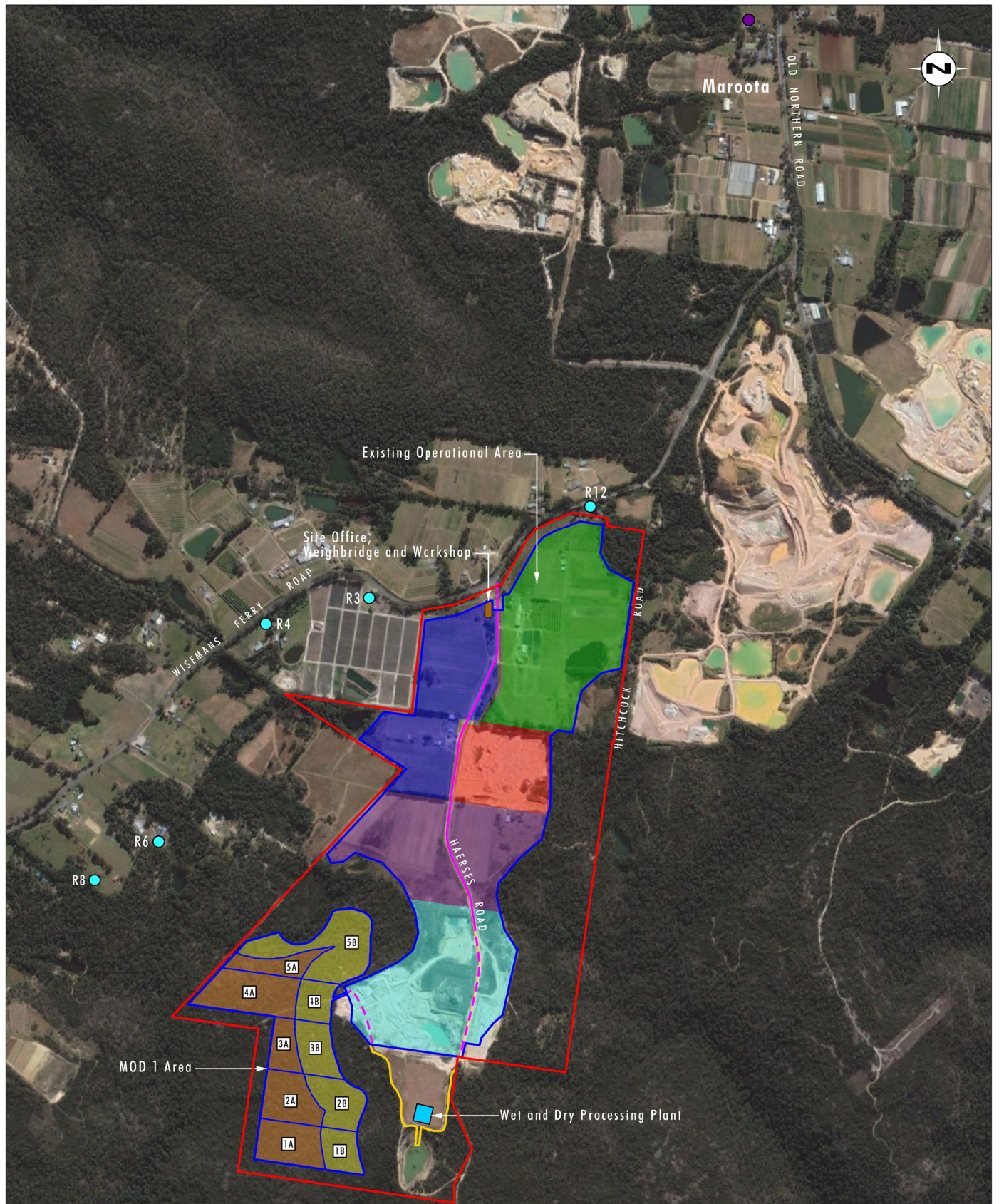


Image Source: Google Earth (Sep 2017)

Data Source: Mc Kinlay Morgan & Associates Pty Ltd (2014)

0 250 500 750m  
1:15 000

### Legend

- Haerses Road Quarry Site
- Approved Extraction Area
- Sensitive Receiver Noise Monitoring Location
- Weather Station
- Extraction Area Stage 1
- Extraction Area Stage 2
- Extraction Area Stage 3
- Extraction Area Stage 4
- Extraction Area Stage 5
- Extraction Area A
- Extraction Area B
- Extraction Cell Number
- Site Office, Weighbridge and Workshop
- Wet Processing Plant
- Indicative Unsealed Haul Road
- Sealed Haul Road
- Processing and Stockpiling Area

FIGURE 6.1

Noise Monitoring Areas  
and Locations

## 7.0 Reporting

### 7.1 External Reporting

A summary of noise monitoring results and statements of compliance with Development Consent and EPL conditions will be provided in the Annual Review. The Annual Review will be prepared and submitted to the Secretary, in accordance with Condition 12 Schedule 5 of the Development Consent. The Annual Review will be made available to the public through the Community Consultative Committee (CCC) and the Dixon Sand web site (<http://www.dixonsand.com.au>).

In addition, in accordance with Condition 15 Schedule 5 of the Development Consent, Dixon Sand will publish noise monitoring results on the Dixon Sand website.

A discussion of the effectiveness of the noise management measures utilised at the Quarry will be reported to DPE in the Annual Review. The Annual Review will also identify whether any additional noise controls are proposed to be implemented at the Quarry.

Any investigations related to exceedances will be detailed in the Annual Review.

### 7.2 Noise Exceedance Protocol

Compliance with the noise criteria will be determined through the noise monitoring program (refer to **Section 6**).

If an exceedance of the noise criteria is measured during the attended noise monitoring, the operator conducting the monitoring is required to advise the Quarry Manager (or delegate) of the exceedance as soon as possible, and conduct another 15 minute attended noise survey within 75 minutes to confirm that noise levels have returned to below the criteria.

If the second measurement also results in an exceedance of the noise criteria, another attended noise monitoring survey will be scheduled and completed within 1 week following the exceedance.

In accordance with Condition 9 of Schedule 5 of the Development Consent, in the event that Dixon Sand becomes aware of an **incident** related to noise, the Quarry Manager or delegate will immediately notify the Department and any other relevant agencies of any such incident.

The notification is to be in writing via the Major Projects Website and clearly identify the development (including the development application number and name) and set out the location and nature of the incident.

Within 7 days of becoming aware of a non-compliance, Dixon Sand will notify the Department of the non-compliance. Notification will be in writing via the Major Projects Website and will identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

In accordance with Condition 1 Schedule 4 of the Development Consent, as soon as practicable, and no longer than 7 days, after obtaining monitoring result showing an exceedance of noise criteria (outlined in **Section 4.0**), the applicant must notify the affected landowners in writing of the exceedance, and provide regular monitoring results, at least every 3 months, to each affected landowner until the development is again complying with the noise criteria.



## 7.3 Adaptive Management

In accordance with Condition 7 Schedule 5 of the Development Consent, the Quarry will assess and manage noise related risks to facilitate compliance with the criteria outlined in **Section 4.0**.

Where an exceedance of the noise criteria in **Section 4.0** has occurred, Dixon Sand will, as soon as becoming aware of the exceedance and to the satisfaction of the Secretary:

- take all reasonable and feasible steps to ensure the exceedance ceases and does not reoccur;
- consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and
- implement remediation measures as directed by the Planning Secretary.

## 7.4 Community Complaints

Complaints relating to noise from the Quarry are to be managed in accordance with the requirements of the Quarry EMS and the reactive management procedures outlined in **Section 5.2**. A register of complaints will be published on the Dixon Sand website and will be updated monthly. A summary of complaints will be provided in the Annual Review.

## 7.5 Independent Review

In the event a landowner considers the Quarry is exceeding noise criteria at his or her property, the landowner may request an independent review of the noise impacts at the property. The independent review will be conducted in accordance with the procedure described in Condition 2 Schedule 4 of the Development Consent.



## 8.0 Review and Improvement

Ongoing monitoring and review of the performance and implementation of this NMP will be undertaken

in accordance with the Condition 5 Schedule 5 of the Development Consent, which states that review of the plan will occur within 3 months of the submission of an:

- incident report under Condition 10 Schedule 5;
- annual review under Condition 12 Schedule 5;
- independent Environmental Audit report under Condition 14 Schedule 5; and
- any modifications to this consent.

The Quarry will notify DPE in writing of any review of this NMP. The revised NMP will be submitted to DPE within 6 weeks of the review.

Updated versions of this NMP will be made publicly available on the Dixon Sand website in accordance with Condition 15 Schedule 5 of the Development Consent.

## 9.0 Responsibilities

Environmental management at Dixon Sand will be the responsibility of all employees and contractors, with the Quarry Manager having overall responsibility for environmental management of the operations. Environmental roles and responsibilities for the project personnel are outlined below. Environmental responsibilities are included in the position description of all employees.

General environmental responsibilities for key personnel at the Quarry are outlined in **Table 9.1** below.

**Table 9.1: Roles and Responsibilities**

Role	Accountabilities for this document
<b>Dixon Sand Managing Director</b>	<ul style="list-style-type: none"> <li>Ensure that sufficient resources are allocated for the implementation of this NMP</li> </ul>
<b>Haerses Road Quarry Manager</b>	<ul style="list-style-type: none"> <li>Oversee the implementation of this NMP</li> <li>Have working knowledge of this NMP</li> <li>Ensure reviews of meteorological forecasts are undertaken on a daily basis prior to the commencement of operations</li> <li>Coordinate the implementation of noise management measures and strategies in accordance with this NMP (refer to <b>Section 5.0</b>)</li> <li>Be aware of the environmental legislative requirements associated with the Quarry and take measure to ensure compliance</li> <li>Ensure employees are competent through training and awareness programs</li> </ul>
<b>Environmental Officer</b>	<ul style="list-style-type: none"> <li>Coordinate the review of this NMP in accordance with the requirements of the Development Consent</li> <li>Coordinate the noise monitoring requirements of this NMP</li> <li>Evaluate and report monitoring results as required</li> <li>Coordinate noise related incidents investigations and reporting as required by legislation and internal standards and guidelines</li> <li>Provide primary contact for complaints and supply follow-up information to any complainant</li> <li>Initiate investigations of complaints as received from the public or government agency</li> <li>Prepare a report to government agencies or neighbours following an incident (refer to <b>Section 7.0</b>)</li> <li>Inform the Quarry Manager of any identified causes resulting in elevated noise during operations</li> <li>Undertaken regular review of this NMP in accordance with the requirements of the Development Consent.</li> </ul>
<b>All employees and contractors</b>	<ul style="list-style-type: none"> <li>Comply with all requirements in this NMP</li> <li>Report all potential environmental incidents to the Quarry Manager immediately</li> <li>Operate in a manner that minimises risks of incidents to themselves, fellow workers or the surrounding environment</li> <li>Seek approval from the Quarry Manager prior to making changes to infrastructure/processes which may result in increased noise risks</li> <li>Follow any instructions provided by the Quarry Manager</li> <li>Follow all requirements relating to the management of noise within the Drivers Policy</li> </ul>

## 10.0 Definitions

The terminology utilised within this NMP is defined in **Table 10.1** below.

**Table 10.1: Definitions**

Term	Definition
<b>CCC</b>	Community Consultative Committee
<b>DA</b>	Development Application
<b>DEC</b>	Department of Environment and Conservation
<b>Development Consent</b>	DA 165-7-2005 Mod 3
<b>DPE</b>	Department of Planning and Environment
<b>DPIE</b>	Department of Planning, Industry and Environment (now DPE - Department of Planning and Environment)
<b>EA</b>	Environmental Assessment
<b>EIS</b>	Environmental Impact Statement
<b>EMP</b>	Environmental Monitoring Program
<b>EMS</b>	Environmental Management System
<b>EPA</b>	Environment Protection Authority
<b>EP&amp;A Act</b>	NSW <i>Environmental Planning and Assessment Act 1979</i>
<b>EPL</b>	Environment Protection Licence
<b>Incident</b>	A set of circumstances that: <ul style="list-style-type: none"> <li>causes or threatens to cause material harm to the environment; and/or</li> <li>breaches or exceeds the limits or performance measures/criteria in the consent</li> </ul>
<b>INP</b>	Industrial Noise Policy
<b>NMP</b>	Noise Management Plan
<b>Secretary</b>	The Secretary of the NSW Department of Planning and Environment, including any authorised delegate or nominee.
<b>SEE</b>	Statement of Environmental Effects

## 11.0 References

- Department of Environment and Conservation, 2007, *Approved Methods for Sampling and Analysis of Air Pollutants in NSW*.
- Department of Planning and Environment, 2006, *Conditions of Consent DA 165-7-2005*.
- Department of Planning and Environment, 2006, *Conditions of Consent DA 165-7-2005 Modification 1*.
- Department of Planning and Environment, 2006, *Conditions of Consent DA 165-7-2005 Modification 2*.
- Department of Planning and Environment, 2006, *Conditions of Consent DA 165-7-2005 Modification 3*.
- Department of Planning and Environment, 2006, *Conditions of Consent DA 165-7-2005 Modification 4*.
- Dixon Sand (Penrith) Pty Ltd (Dixon Sand), 2016, *Dixon Sand (Penrith) Pty Ltd - Old Northern Road and Haerses Road, Maroota Annual Review (Annual Environmental Management Report) 2015 – 2016*.
- Dixon Sand (Penrith) Pty Ltd (Dixon Sand), 2017, *Dixon Sand (Penrith) Pty Ltd - Old Northern Road and Haerses Road, Maroota Annual Review 2016 – 2017*.
- Environmental Protection Authority (EPA), 2000, *NSW Industrial Noise Policy*.
- Environmental Protection Authority (EPA), 2017, *Noise Policy for Industry*.
- Environmental Resources Management Australia Pty Ltd (ERM), 2005, *Proposed Sand Quarry at Haerses Road, Maroota, Environmental Impact Statement*, Report prepared for Dixon Sand (Penrith) Pty Ltd.
- NSW Environment Protection Authority, 2011, *Environmental Protection Licence 12513*.
- Project Environmental Services Pty Ltd (PES), 2018, *Noise Compliance Assessment Report for DA 165-7-2005 Modification 1: Haerses Road Quarry, Maroota*.
- Umwelt (Australia) Pty Ltd (Umwelt), 2016, *Environmental Assessment Dixon Sand Haerses Road Quarry Extraction Area Modification*, Report prepared for Dixon Sand (Penrith) Pty Ltd.
- Umwelt (Australia) Pty Ltd (Umwelt), 2018, *Construction Noise Management Plan*, plan prepared for Dixon Sand (Penrith) Pty Ltd.
- Umwelt (Australia) Pty Ltd 2019, *Haerses Road Quarry Modification 3 – Statement of Environmental Effects. Protection of the Environment Operations (Clean Air) Regulation 2010*.
- Umwelt (Australia) Pty Ltd, 2016, *Environmental Assessment Dixon Sand Haerses Road Quarry Extraction Area Modification, Report prepared for Dixon Sand (Penrith) Pty Ltd*.
- Umwelt (Australia) Pty Ltd, 2016, *Application to modify DA 165-7-2005 for Haerses Road Quarry under Section 4.55(1) of the Environmental Planning & Assessment Act 1979*.
- Umwelt (Australia) Pty Ltd 2019, *Haerses Road Quarry Modification 3 – Statement of Environmental Effects*.

# Appendix 1

## Plan Preparation Checklist and Certification



## Appendix 1 - Plan Preparation Checklist & Certification

The Environmental Management Plan Requirements guidelines state that the following checklist must be completed and supplied to the Department with an Environmental Management Plan (EMP) and Sub-plans. *(Note: the items marked as NA are not required to be included in the Sub-plan).*

Requirement	Plan Reference	Yes/No/NA
<b>Document preparation and endorsement</b>		
Has the Plan been prepared in consultation with all relevant stakeholders? (Section 3.1)	Section 2.4 and Appendix 2	Yes
Have the views of the relevant stakeholders been taken into consideration, have appropriate amendments been made to the Plan and does the Plan clearly identify the location of any changes? (Section 3.1)	Section 2.4 and Appendix 2	Yes
Has the Plan been certified on behalf of the proponent? (Section 3.2)	Appendix 1	Yes
<b>Version content</b>		
Does the Plan include the required version control information? (Section 2.3)	Before Table of Contents	Yes
Does the Plan reference the project description as required in Section 2.4?	Section 1.1	Yes
Does the Plan identify the components of the project to which it applies (i.e. scope)? (Section 2.5).	Section 1.2	Yes
Does the Plan describe the proponent's Environmental Management System (EMS), and identify how the Plan relates to other documents required by the conditions of consent? (Section 2.6)	NA (Sub Plan)	NA (Sub Plan)
Does the Plan identify continuous improvements processes from the EMS that will be adopted? (Section 2.6)	NA (Sub Plan)	NA (Sub Plan)
Does the Plan include (unaltered) all the conditions of consent to the addressed by the Plan and identify where in the Plan each requirement has been addressed? (Section 2.7.1)	Section 2.1	Yes
Have all other additional approvals been identified? Has appropriate information been provided regarding how each additional approval is relevant? (Section 2.7.2)	Section 2.1.1 and Section 2.2	Yes
Have all relevant guidelines, policies and standards been identified, including details of how they are relevant? (Section 2.7.3)	Section 2.3	Yes
Has the project's organisational structure been included? (Section 2.8)	NA (Sub Plan)	NA (Sub Plan)Yes
Are the roles and responsibilities of key positions or personnel (including any specialists required by the conditions of consent) outlined? (Section 2.8)	Section 9.0	Yes
Is the process that will be adopted to identify and analyse the environmental risks included? (Section 2.9)	NA (Sub Plan)	NA (Sub Plan)
Does the Sub-plan identify the relevant sections of the EIA documents that contain the assessment of the matter/s addressed by the Plan? (Section 2.10)	Section 2.1.1	Yes
Have all further studies required to support mitigating measures been identified and included? (Section 2.11)	Section 2.5	Yes

Requirement	Plan Reference	Yes/No/NA
Have project hold points been identified and included? (Sections 2.7.2 and 2.12)	Section 2.6	Yes
Have all mitigation measures from conditions of consent been included unaltered? (Section 2.13)	Section 2.1.1	Yes
Have any new mitigation measures been written in committed language and all relevant information included? (Section 2.13)	Section 5.1	Yes
Have the tools that will be used to communicate Plan requirements to project personnel been included? (Section 2.14)	Section 5.1.1	Yes
Is an environmental inspection program described as required? (Section 2.15.1)	NA (Sub Plan)	NA (Sub Plan)
Are relevant details of environmental monitoring that will be carried out included? (Section 2.15.2)	Section 6.0	Yes
Is a compliance monitoring and reporting program (or similar) referenced? (Section 2.15.3)	Section 6.1	Yes
Is an independent auditing program referenced? (Section 2.16)	NA (Sub Plan)	NA (Sub Plan)
Are project status notification protocols that comply with conditions included? (Section 2.17.1)	NA (Sub Plan)	NA (Sub Plan)
Does the Plan reference a Community and Stakeholder Engagement Plan (or similar) or include community and stakeholder engagement actions (if required)? (Section 2.17.2)	NA (Sub Plan)	NA (Sub Plan)
Does the document include the incident notification and reporting protocols that comply with the relevant conditions of consent? (Section 2.17.3)	Section 7.0	Yes
Does the document identify the project person or position that is responsible for deciding whether an occurrence is an incident? (Section 2.17.3)	NA (Sub Plan)	NA (Sub Plan)
Does the document describe corrective and preventative action protocols that address the requirements? (Section 2.18)	NA (Sub Plan)	NA (Sub Plan)
Does the document identify training and awareness programs as required? (Section 2.19)	Section 5.1.1	Yes
Does the document include details of a document review and revision process that complies with the requirements? (Section 2.20)	Section 8.0	Yes
Does the document include details of public availability requirements? (Section 2.21)	Section 7.0	Yes

## Document Certification Form

<b>Project Name</b>	Haerses Road Quarry
<b>Project Application Number</b>	DA 165-7-2005
<b>Proponent</b>	Dixon Sand (No.1) Pty Ltd
<b>Document Title</b>	Haerses Road Quarry Noise Management Plan
<b>Document Version</b>	V1a
<b>Date of Issue</b>	17/05/2022

Haerses Road Quarry Noise Management Plan has been prepared by Project Environmental Services Pty Ltd in response to conditions of consent Schedule 5 Condition 1, DA 165-7-2005 for the Haerses Road Quarry. Subsequent reviews and changes to the Noise Management Plan have been made on behalf of Dixon Sand (No. 1) Pty Ltd.

I am authorised to and have reviewed the document on behalf of Dixon Sand (No. 1) Pty Ltd.

I certify that the Haerses Road Quarry Noise Management Plan:

- has been prepared in accordance with the relevant condition/s and the Department's Environmental Management Plan
- adequately identifies and addresses all relevant conditions of consent
- has been prepared in accordance with relevant requirements of the conditions of consent regarding stakeholder consultation.

<b>Name of Certifier</b>	Hunny Churcher
<b>Position</b>	Environment Officer
<b>Company</b>	Project Environmental Services
<b>Date</b>	17/05/2022

## **Appendix 2**

# **Stakeholder Consultation**



DOC22/306883-1

Hunny Churcher  
Environmental Officer  
Dixon Sand Pty Ltd  
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PITT TOWN NSW 2756  
Email: [environment@dixonsand.com.au](mailto:environment@dixonsand.com.au)

4 May 2022

**Request for Comment on DA 165-7-2005 (Mod 3) Noise Management Plan –  
EPA No Comment Response**

Dear Ms Churcher,

Thank you for requesting input from the NSW Environment Protection Authority (EPA) on the Noise Management Plan (NMP) prepared in relation to Modification 3 of DA 165-7-2005 for activities proposed to be undertaken at Haerses Road Quarry (the Quarry) located on Haerses Road at Maroota, New South Wales.

The EPA generally does not review management plans, as the role of the EPA is to set objectives for environmental protection and management and not to be directly involved in the development of strategies to comply with such objectives. The licensee should ensure that the monitoring program proposed is in line with conditions within EPL 12513 to ensure ongoing compliance.

Section 2.2 of the NMP provided states that:

- *“Noise criteria listed in Condition L3.1 of the current EPL reflects the noise criteria contained in Development Consent (Modifications 1 and 2) and are inconsistent with the noise criteria of Development Consent (Modification 3). Accordingly, the current noise criteria in Condition L3.1 of the Environment Protection Licence is superseded by the noise criteria specified in the Development Consent (Modification 3).”*

The EPA understands that the licence variation application submitted by the licensee on the 11 December 2021 (Notice 1615102 – variation is currently being finalised) directly relates to the above noise criteria concerns, and that the current licence does not reflect the limits as outlined within the Development Consent.

However, the EPA would remind the licensee that until this variation has been finalised and issued with the new limit conditions, the current licence limit and monitoring conditions must be complied with. Once the variation has been issued by the EPA, the monitoring program should be updated to reflect these changes and so the licensee can ensure ongoing compliance.

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(from outside NSW)

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[www.epa.nsw.gov.au](http://www.epa.nsw.gov.au)



The impact of noise and vibration to protect the amenity and wellbeing of the community must be managed. Potential impacts should be minimised through the implementation of all feasible and reasonable mitigation measures and use of relevant published guidelines. Please see [epa.nsw.gov.au](http://epa.nsw.gov.au) for further information relating to the above to guide the assessment of these matters.

If you have any questions about this letter, please contact Jennifer Brown on (02) 8289 6829 or via email at [jennifer.brown@epa.nsw.gov.au](mailto:jennifer.brown@epa.nsw.gov.au), ensuring to copy in [info@epa.nsw.gov.au](mailto:info@epa.nsw.gov.au).

Yours sincerely



**Jacqueline Ingham**  
**Unit Head**  
**REGULATORY OPERATIONS**

Issue	Response
<p>The licensee should ensure that the monitoring program proposed is in line with conditions within EPL 12513 to ensure ongoing compliance.</p> <p>Section 2.2 of the NMP provided states that:</p> <p>- "Noise criteria listed in Condition L3.1 of the current EPL reflects the noise criteria contained in Development Consent (Modifications 1 and 2) and are inconsistent with the noise criteria of Development Consent (Modification 3). Accordingly, the current noise criteria in Condition L3.1 of the Environment Protection Licence is superseded by the noise criteria specified in the Development Consent (Modification 3)."</p> <p>The EPA understands that the licence variation application submitted by the licensee on the 11 December 2021 (Notice 1615102 – variation is currently being finalised) directly relates to the above noise criteria concerns, and that the current licence does not reflect the limits as outlined within the Development Consent.</p> <p>However, the EPA would remind the licensee that until this variation has been finalised and issued with the new limit conditions, the current licence limit and monitoring conditions must be complied with. Once the variation has been issued by the EPA, the monitoring program should be updated to reflect these changes and so the licensee can ensure ongoing compliance.</p>	<p>Noted.</p> <p>The quarry will operate in accordance with the noise criteria contained in Condition L3.1 of the current EPL 12513 (February 2020).</p> <p>Once the EPL variation is approved by the EPA, the monitoring program will be updated to reflect the new noise criteria.</p>