

HAERSES ROAD QUARRY

ACOUSTIC BUND CONSTRUCTION NOISE MANAGEMENT PLAN

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Version V1

Client: Dixon Sand (No. 1) Pty Ltd

Prepared by: Project Environmental Services Pty Ltd

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Document Control

Revision No.	Reviewer		Approved for Issue		Comments
	Name	Date	Name	Date	
Umwelt V1 to V5					CNMP versions V1 (Apr 2018) to V5 (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 CNMP V5 (Apr 2020) were transferred to PES document template. The CNMP was reviewed and revised to address the requirements of DA Modifications 3 and 4 consent conditions.

Table of Contents

1.0	Introduction	1
1.1	Background	1
1.2	Purpose and Scope	1
2.0	Regulatory Requirements	5
2.1	Development Consent Conditions	5
2.1.1	EIS Environmental Management Commitments	6
2.2	Environment Protection Licence	7
2.3	Guidelines, Policies and Standards	8
2.4	Further Studies	8
2.5	Hold Points	8
3.0	Existing Noise Environment	9
3.1	Sensitive Receivers	9
4.0	Construction Noise Guidelines	11
5.0	Noise Management Controls and Consultation	12
5.1	Extraction Area Biodiversity Management Controls	12
5.2	Proactive Management Measures	13
5.2.1	Training and Awareness	14
5.2.2	Community Notification Process	14
5.3	Reactive Management Measures	15
5.4	Complaints Management	17
6.0	Construction Noise Monitoring	18
7.0	Reporting	19
7.1	External Reporting	19
8.0	Review and Improvement	20
9.0	Responsibilities	21
10.0	Definitions	22
11.0	References	23

Figures

Figure 1.1	Locality Plan	3
Figure 1.2	Haerses Road Quarry	4
Figure 3.1	Haerses Road Quarry Noise Receiver Locations and Acoustic Bunds	10

Tables

Table 2.1: Noise Related Development Consent Conditions	5
Table 2.2: Relevant EIS Noise Management Commitments	6
Table 2.3.3: Relevant Environment Protection Licence Conditions.....	7
Table 3.3.1: Rating Background Levels (RBLs)	9
Table 4.1: ICNG Construction Noise Management Levels, dB(A) (DECC 2009)	11
Table 4.2: Haerses Road Quarry Construction Noise Management Levels at Residential Receivers, dB(A)	11
Table 5.1: Acoustic Bund Naming Convention	12
Table 5.2: Proactive Construction Noise Management Measures	13
Table 5.3: Residential noise receivers surrounding Haerses Road Quarry	14
Table 5.4: Reactive Construction Noise Management Measures	16
Table 9.9.1: Roles and responsibilities	21
Table 10.1: Definitions	22

Appendices

Appendix 1	Checklist – DPIE Environment Management Plan Guidelines
Appendix 2	Complaint Register Form

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, Maroota in 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) approved 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

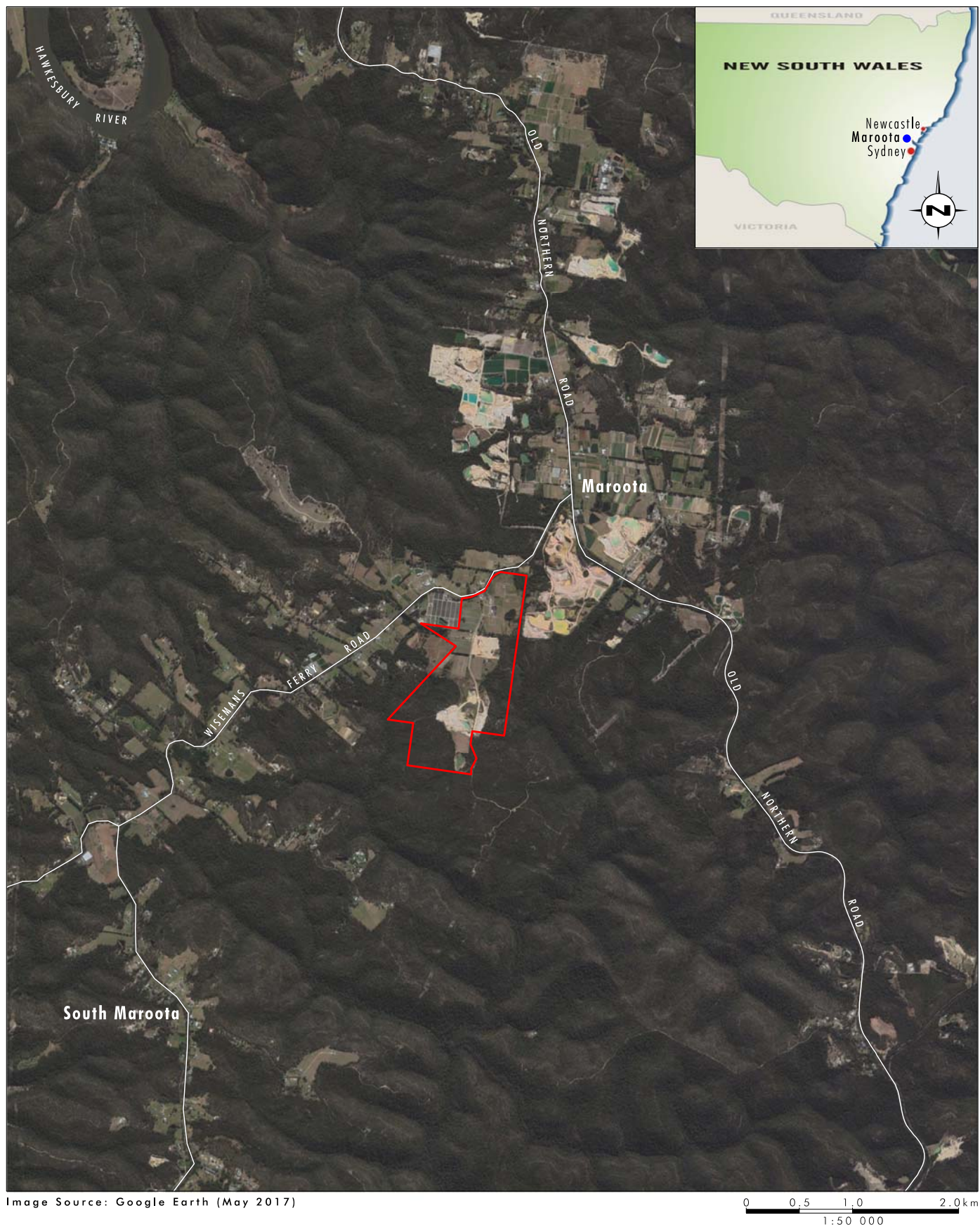
The Acoustic Bund Construction Noise Management Plan (CNMP) has been prepared for the construction of three acoustic bunds within Haerses Road Quarry. The CNMP provides a description of the noise management strategies, procedures, controls and monitoring programs to be implemented. The purpose of the CNMP is to detail the procedures that will be undertaken to:

- Keep surrounding residents informed of the proposed timing and duration of construction of the acoustic bunds;
- Minimise and mitigate the noise impacts generated by the construction of the noise bunds; and
- Receive, handle and respond to complaints relating to the construction of the noise bunds.

This CNMP addresses the relevant requirements of the Development Consent and Environmental Protection Licence (EPL) 12513. The Development Consent conditions, Environmental Assessment (EA), and Statement of Environmental Effects (SEE) (Umwelt, 2019) management commitments relevant to this plan are provided in **Section 2.1**. EPL 12513 licence conditions relevant to this plan are provided in **Section 2.2**.

This CNMP has also been developed in accordance with the requirements of the Department of Planning, Industry and Environment's (DPIE) *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 this CNMP is specific to the construction of the acoustic bunds only. A separate Noise Management Plan (NMP) has been developed for the Haerses Road Quarry operations.



Legend

Haerses Road Quarry Site

FIGURE 1.1
Locality Map

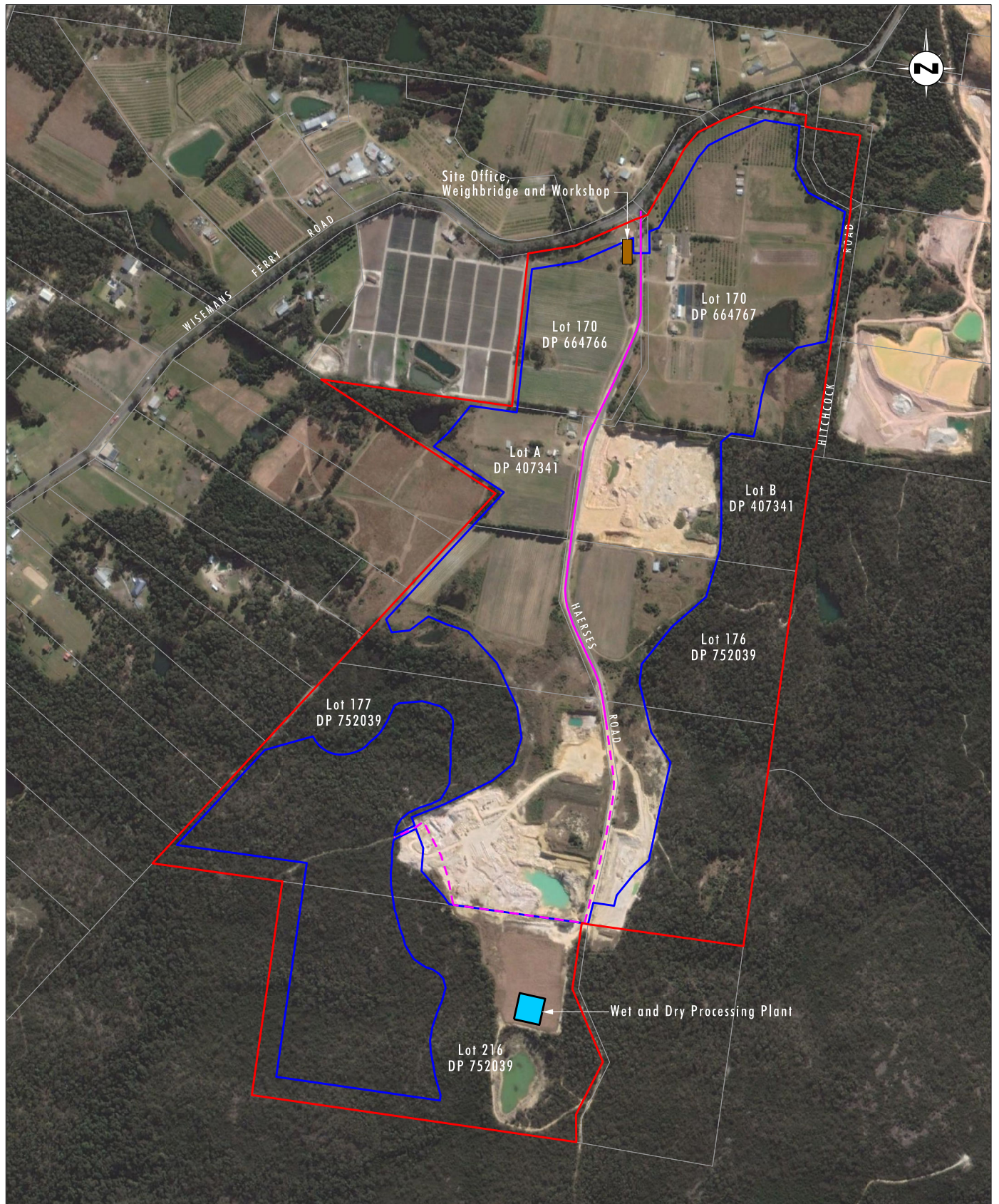


Image Source: Google Earth (Sep 2017)
Data Source: Mc Kinlay Morgan & Associates Pty Ltd (2014)

0 100 250 500m
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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 construction noise related Development Consent conditions and where they have been addressed within this CNMP.

Table 2.1: Noise Related Development Consent Conditions

Condition	Description	Section/s Addressed													
Schedule 3 – Specific Environmental Conditions															
Hours of Operation															
1	The Applicant must comply with the operating hours set out in Table 1. <i>Table 1: Operating hours</i> <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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	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														
4	The Applicant must manage noise from construction activities (including acoustic bund construction) in accordance with the noise management levels defined in Table 2 of the Interim Construction Noise Guideline, except where the Applicant has an agreement with the relevant landowner to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of the agreement.	Section 4.0 and Section 5.0													
Acoustic Bund Construction															
5	The Applicant must: (a) design, construct and maintain the acoustic bunds shown in Appendix 3 to the satisfaction of the Secretary; and (b) limit all bund construction activities to a period of not more than 4 weeks in any calendar year, unless otherwise approved by the Secretary.	Section 5.0													
6	Prior to the construction of any acoustic bunds, the Applicant must prepare an Acoustic Bund CNMP, which details the procedures that would be undertaken to: (a) keep surrounding residents informed of the proposed timing and duration of bund construction; (b) minimise and mitigate the noise impacts generated by the works; and (c) receive, handle and respond to complaints relating to the works. The Applicant must implement the Acoustic Bund CNMP as approved by the Secretary.	Whole Document													

2.1.1 EIS Environmental Management Commitments

Table 2.2 summarises the management commitments relating to acoustic bund construction noise management that have been identified in the EIS (ERM 2005), EMP (Dixon Sand 2017) and EA (Umwelt 2016).

Table 2.2: Relevant EIS Noise Management Commitments

Source	Description	Section/s Addressed
EIS Section 4.1.4 (ERM 2005)	The proposal will require the progressive construction of acoustic bunds to maintain the amenity of the surrounding area.	Section 5.0
EIS Section 6.8.5 (ERM 2005)	<i>Noise Mitigation</i> The following noise mitigation was assumed in all modelling calculations in addition to the shielding provided by topographic features and box cut high walls and would be constructed during Stage 1 from the Quarry overburden: 5 m high earth mound above the natural ground level at the northern end of Stage 5; and 5 m high earth mound above the natural ground level at the western side of Stage 4. The slope of the earth mound batter has been assumed to be typically 33% (1 in 3, vertical to horizontal). For high barrier requirements or moderate space limitations, earth mounds can be combined with a noise wall on top of the mound to achieve the required attenuation. Figure 6.8 provides graphical details of the noise barrier locations and length	Section 50 Note: Refer to Figure 3.1 for acoustic bund locations and Figure 5.1 for acoustic bund naming conventions.
EIS Section 6.8.6 (ERM 2005)	Calculations show that worst case bulldozer noise emissions would be 55 to 60 dB(A) at the nearest receptors during noise barrier construction. However, because the noise disturbance is relatively short term and not indicative of daily sand extraction activities, best management practices would be adopted to minimise noise impacts where possible.	Section 5.0
EIS Section 7.2.2 (ERM 2005)	Noise mitigation measure include: - consultation with exposed residents within 200 m of any construction works to advise them of impending activity and the relatively high noise levels; - construction of a 5 m high earth mound above the natural ground level at the northern end of Stage 5; - construction of a 5 m high earth mound above the natural ground level at the western side of Stage 4; and - ensuring machines are in a well-maintained condition (eg mufflers) and reducing “track slap” annoyance by limiting the use of higher gears if possible.	Section 5.0

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. The following alternative feasible and practicable option has been adopted and incorporated in the noise modelling, consistent with the reasonable and feasible methodology recommended under the INP: - construct a minimum 7 m high bund (or combined bund/noise fence) along the western boundary of Cell 4, with a minimum 80 m return along the northern boundary of the cell prior to early extraction works in Cell 4 - construct a minimum 7 m high bund (or combined bund/noise fence) set back a minimum of 50 m from the western boundary of Cell 5 prior to early extraction works in Cell 5. - either one of 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 - during early extraction works (at or near surface level) in Cell 4 and Cell 5, product to be stockpiled and hauled away separately so that extraction does not occur simultaneously with haulage.	Section 5.0 Note: Refer to Figure 3.1 for acoustic bund locations and Figure 5.1 for acoustic bund naming conventions.
EA MOD Section 6.5.4.4 (Umwelt 2016)	Measures that will be implemented during bund construction works include: - consultation with the nearest residents prior to work commencement advising them of the potential for elevated noise levels during surface works and bund construction, the timing of works, duration and taking into consideration times that might be of least disturbance to them - provision of a site contact and telephone number to raise any concerns during the works	Section 5.0

2.2 Environment Protection Licence

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

Table 2.3: Relevant Environment Protection Licence Conditions

Source	Description	Section/s Addressed
L3.6	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 Sunday and Public Holidays.	Note: Construction works will be undertaken in accordance with Schedule 3 Condition 1 of the Development Consent which stipulates that permissible hours for acoustic bund construction include 8.00 to 5.00 pm Monday to Friday

Source	Description	Section/s Addressed
		and at no time on Saturdays, Sundays or public holidays.
L3.7	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

2.3 Guidelines, Policies and Standards

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

- NSW Industrial Noise Policy (EPA, 2000);
- Interim Construction Noise Guidelines (DECC, 2009);
- AS IEC 61672.1-2004 Electroacoustics – Sound level meters – Specifications ;
- AS1055.1:1997 Acoustics – Description and Measurement of Environment Noise – General Procedures.

2.4 Further Studies

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

2.5 Hold Points

In accordance with Condition 5(b) Schedule 3 of the Development Consent, all bund construction activities are limited to a period of not more than four weeks in any calendar year, unless otherwise approved by the Secretary.

3.0 Existing Noise 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 surrounding quarries (Umwelt 2016) and (Umwelt 2019).

3.1 Sensitive Receivers

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 3.3.1: Rating Background Levels (RBLs)

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

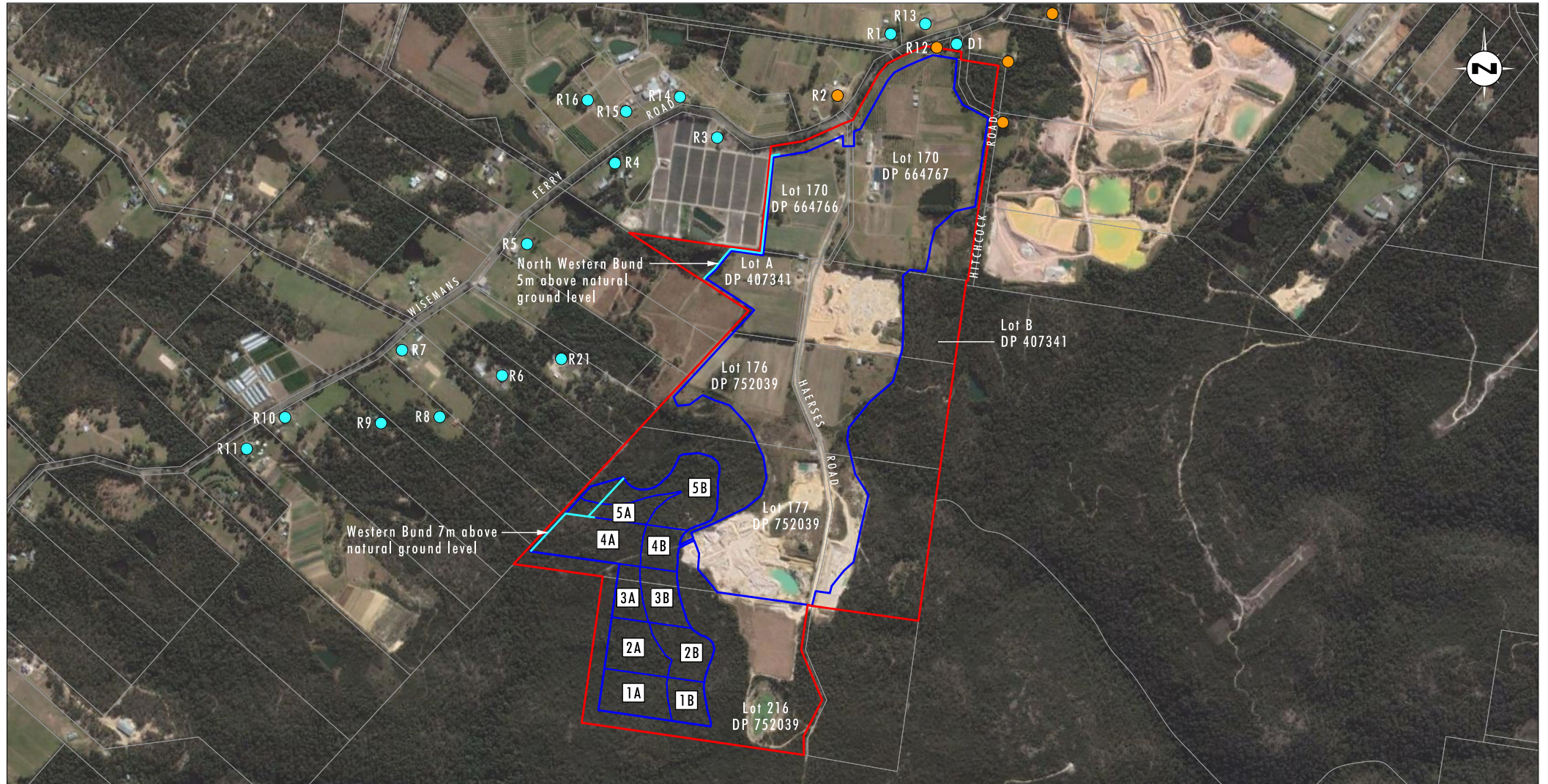


Image Source: Google Earth (Sep 2017)

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 Construction Noise Guidelines

Condition 4 Schedule 3 of the Development Consent states that Dixon Sand must manage noise from construction activities in accordance with the noise management levels provided by the *Interim Construction Noise Guideline* (ICNG) (DECC 2009) (Refer to **Table 4.1**).

The main objectives of the ICNG are to:

- promote a clear understanding of ways to identify and minimise noise from construction works
- focus on applying all 'feasible' and 'reasonable' work practices to minimise construction noise impacts
- encourage construction to be undertaken only during the recommended standard hours, unless approval is given for works that cannot be undertaken during these hours
- provide flexibility in selecting site-specific feasible and reasonable work practices in order to minimise noise impacts

The noise management levels presented in **Table 4.1** are intended to guide the need for and the selection of feasible and reasonable work practices to minimise construction noise impacts.

Table 4.1: ICNG Construction Noise Management Levels, dB(A) (DECC 2009)

Construction Time	Management Level, LAeq,15 minute
Recommended standard hours Monday to Friday 7.00 am to 6.00 pm Saturday 8.00 am to 1.00 pm No work on Sundays or public holidays	Noise Affected: Rating Background Level (RBL) + 10 dB
	Highly Noise Affected: 75 dB(A)
Outside recommended standard hours	Noise Affected: Rating Background Level (RBL) + 5 dB

Based on the above and the adopted RBLs quantified from unattended noise monitoring as part of the SEE (Umwelt, 2019) (refer to **Section 3.2 Ambient Noise Levels**), the corresponding construction noise management levels are outlined in **Table 4.2**.

Table 4.2: Haerses Road Quarry Construction Noise Management Levels at Residential Receivers, dB(A)

Receiver Description	Management Level, LAeq,15 minute Standard hours (based on day-time RBL)
Locations R5 and R6	41
All other Locations	40

Note: R2 and R12 are subject to private agreements relating to noise and is therefore not considered a sensitive receiver for the purpose of this CNMP.

The construction noise management levels for the non-sensitive receivers such as other industrial operations is 75 dB(A).

5.0 Noise Management Controls and Consultation

5.1 Extraction Area Biodiversity Management Controls

The acoustic bunds themselves are a key noise mitigation control for the Quarry. **Table 5.1** refers to the description of the 3 acoustic bunds within the 2 key environmental assessment documents, and the naming convention used for each acoustic bund in this CNMP. **Table 5.2** outlines the required specifications, timing and permissible construction hours for the acoustic bunds.

Table 5.1: Acoustic Bund Naming Convention

Source Document	Acoustic Bund as described in Source	Acoustic Bund shown on Figure 3.1
EIS 2005 and SEE (Umwelt, 2019)	5 m high earth mound above the natural ground level at the northern end of Stage 5	Northern Bund
EIS 2005	5 m high earth mound above the natural ground level at the western side of Stage 4	North Western Bund
EA 2017	Construct a minimum 7 m high bund (or combined bund/ noise fence) along the western boundary of Cell 4, with a minimum 80 m return along the northern boundary of the cell prior to early extraction works in Cell 4 Construct a minimum 7 m high bund (or combined bund/ noise fence) set back a minimum of 50 m from the western boundary of Cell 5 prior to early extraction works in Cell 5.	Western Bund

Table 5.2: Acoustic Bund Specifications and Timing

Bund	Specifications	Construction Timing	Permissible hours for acoustic bund construction
Northern Bund	5 m high earth mound above the natural ground level at the northern end of Stage 5 (EIS 2005; SEE 2019)	All bund construction activities are limited to a period of not more than 4 weeks in any calendar year, unless otherwise approved by the Secretary	8.00 to 5.00 pm Monday to Friday At no time on Saturdays, Sundays or public holidays (DA 165-7-2005).
North Western Bund	5 m high earth mound above the natural ground level at the western side of Stage 4 (EIS 2005; EMP 2017)		
Western Bund	construct a minimum 7 m bund (or combined bund/noise fence) along the western boundary of Cell 4, with a minimum 80 m return along the northern boundary of the cell prior to early extraction works in Cell 4 (EA MOD 2016)		

Bund	Specifications	Construction Timing	Permissible hours for acoustic bund construction
	construct a minimum 7 m bund (or combined bund/noise fence) set back a minimum of 50 m from the western boundary of Cell 5 prior to early extraction works in Cell 5.		

5.2 Proactive Management Measures

Dixon Sand is committed to implementing all reasonable and feasible measures to minimise the potential noise impacts of the acoustic bund construction on nearby sensitive receivers. A range of noise management and mitigation measures are utilised at the Quarry to limit the generation of construction noise and mitigate noise impacts. A summary of these measures is provided in **Table 5.3**.

Table 5.2: Proactive Construction Noise Management Measures

Management or Mitigation Measure	Timing	Responsibility	Performance Indicator
Ensure all bund construction activities are limited to a period of no more than four weeks in any calendar year, unless otherwise approved by the Secretary.	Prior to and during construction of acoustic bunds	Quarry Manager/ Environmental Officer	Construction records
Compliance with approved hours of construction in the Development Consent	Ongoing	Quarry Manager/ Environmental Officer	Construction 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 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 (Section 6.0)	During construction of the acoustic bunds	Environmental Officer	Monitoring reports
Consult with the surrounding residents prior to work commencement in accordance with the community notification process (Section 5.4)	Prior to construction of acoustic bunds	Environmental Officer	Consultation/ Communication records
Regular maintenance of road surfaces, vehicles and equipment to reduce noise emissions	Ongoing	Quarry Manager/ Environmental Officer	Maintenance records

Management or Mitigation Measure	Timing	Responsibility	Performance Indicator
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

5.2.1 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. After completing the induction, workers will sign a statement of attendance and records of this are kept in the administration office.

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

5.2.2 Community Notification Process

In accordance with the EIS and Condition 6(a) Schedule 3 of the Development Consent, the following process has been developed to ensure residential noise receivers surrounding the Quarry (as per **Figure 3.1**) are informed of the proposed timing and duration of the construction works. These residents are outlined in **Table 5.3** below.

Table 5.3: Residential noise receivers surrounding Haerses Road Quarry

Receiver	Location
R01	1710 Wisemans Ferry Road, Maroota
R02*	1700 Wisemans Ferry Road, Maroota
R03	1643 Wisemans Ferry Road, Maroota
R04	1617 Wisemans Ferry Road, Maroota
R05	1579 Wisemans Ferry Road, Maroota
R06	1543 Wisemans Ferry Road, Maroota
R07	1539 Wisemans Ferry Road, Maroota
R08	1521 Wisemans Ferry Road, Maroota
R09	1517 Wisemans Ferry Road, Maroota
R10	1499 Wisemans Ferry Road, Maroota
R11	1487 Wisemans Ferry Road, Maroota
R12*	1725 Wisemans Ferry Road, Maroota
R13	1728 Wisemans Ferry Road, Maroota
R14	1638 Wisemans Ferry Road, Maroota

R15	1630 Wisemans Ferry Road, Maroota
R16	1602 Wisemans Ferry Road, Maroota
R21	1559 Wisemans Ferry Road, Maroota

**Note: Locations R2 and R12 are covered by an agreement with Dixon Sand to waiver any potential noise impacts, and as such the consent noise conditions do not apply.*

Prior to the commencement of acoustic bund construction, these residents will be informed of:

- the nature of works to be carried out
- the potential for elevated noise levels
- the proposed timing and duration of works
- relevant contact details for enquiries and complaints

Information will be provided through various methods such as letterbox drops, meetings or individual contact. A designated telephone enquiries line will be maintained, with the number advertised at the entry to the site and on Dixon Sand's website. Postal and email platforms will also be advertised and utilised for receiving community feedback.

In accordance with Schedule 5 Condition 8, a Community Consultative Committee (CCC) for the Quarry operations exists, and has members comprised of Government representatives, Maroota Public School representative and local community representatives. Updates and consultation concerning the timing of acoustic bund construction will be communicated during these meetings.

5.3 Reactive Management Measures

In addition to the proactive controls outlined in **Section 5.2**, specific reactive management measures will be implemented in response to identified triggers. Noise triggers and responses are outlined in **Table 5.4** below.

Table 5.4: Reactive Construction Noise Management Measures

Trigger	Response/Corrective Action
Receipt of noise complaint	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: • The date and time of the complaint • Method by which the complaint was made • Personal details of the complainant • Nature of the complaint • Action taken in relation to the complaint, including follow up with the complainant; and • If no action taken, the reasons why no action was taken. All complaints will be investigated and an appropriate response provided to the complainant. The investigation may include the following: • A review of the construction being undertaken at the time of the complaint • A review of whether the construction activities outside the normal 'day-to-day' construction activities were being carried out on site at the time of the complaint • A review of whether there were any other noise generating activities which may have contributed to noise in the area • Recommendation of any actions that may be carried out to resolve the complaint and/or minimise the likelihood of further complaints.
Elevated construction noise management levels	If the Environmental Officer observes, or has a report of, an elevation in noise levels during the construction of the acoustic bunds, then as stipulated in the Interim Construction Noise Guideline (2009), Dixon Sand will apply all feasible and reasonable work practices to meet the noise affected level (Section 5.2); The following responses and action plan will also be implemented: • 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, to endeavour to reduce the noise levels in line with the noise management levels. • In the event of ongoing or regular elevation of the noise management levels, 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 construction area.
Emergency event requiring construction outside approved hours	In the event that deliveries or despatch are requested outside approved hours of construction by Policy or other public authority, or emergency work is required to avoid the loss of lives, property or to prevent environmental harm, the Quarry Manager will act appropriately to ensure the safety of employees and the local community and to seeks to prevent environmental harm.

5.4 Complaints Management

Complaints relating to the acoustic bund construction works will be received, handled and responded to in accordance with the requirements of the Quarry EMS (2021) and the reactive management procedures outlined in **Section 5.3**.

Dixon Sand's EMS (2021) procedure incorporates the following:

- site telephone number, along with postal, and email address for complaints advertised on the Quarry gate and the company website which are to be maintained and updated throughout the life of the development
- all complaints/concerns raised by local community/relevant authorities are to be recorded on the Complaints Register by the Environmental Officer or delegate. The Complaints Register is to be retained and published on the company website. All complaints are to be brought to the attention of the Environmental Officer immediately
- the Environmental Officer or delegate is to identify and initiate appropriate action in response to a complaint and make follow-up contact with complainant
- any complaints received are to be reviewed at the CCC meeting

A Complaints Register is currently maintained for the existing Quarry at Old Northern Road, and is suitable for use in recording any complaints relating to the Haerses Road operation. The Complaints Register Form is attached in **Appendix 2**. Completed Community Register forms are to be included in the Annual Review and EPL Annual Return.

6.0 Construction Noise Monitoring

Upon receipt of a noise complaint associated with the construction of the acoustic bunds, Dixon Sand will undertake an investigation in accordance with **Table 5.4** (Trigger - Receipt of Noise Complaint). Following the investigation, if deemed necessary by Dixon Sand, attended noise monitoring will be undertaken at the location where the complaint was made.

Attended construction noise 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
- 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 (LA_{max}) 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

7.0 Reporting

7.1 External Reporting

A summary of any attended noise monitoring undertaken following community complaints will be provided in the Quarry Annual Review and EPL Annual Return. 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 (www.dixonsand.com.au).

8.0 Review and Improvement

Ongoing monitoring and review on the performance and implementation of this CNMP will be undertaken in accordance with Condition 5 Schedule 5, which states that the 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 13 Schedule 5; and
- any modifications to the consent.

The Quarry will notify DPIE in writing of any review of this CNMP. Should a review lead to any revisions to this CNMP, the revised document will be submitted to DPIE within 6 weeks of the review for approval. Updated versions of this CNMP 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 9.9.1: Roles and responsibilities

Role	Accountabilities for this document
Dixon Sand's Managing Director	Ensure that sufficient resources are allocated for the implementation of this plan
Haerses Road Quarry Manager	- Oversee the implementation of this plan - Have working knowledge of this plan - Coordinate the implementation of noise management measures and strategies in accordance with this plan (see Section 5.0) - Be aware of the environmental legislative requirements associated with the quarry and take measure to ensure compliance - Ensure employees are competent through training and awareness programs
Environmental Officer	- Coordinate the review of this plan in accordance with the requirements of the Development Consent - Coordinate the noise monitoring requirements of this plan - Evaluate and report monitoring results as required - Provide primary contact for complaints and supply follow-up information to any complainant - Initiate investigations of complaints as received from the public or government agency - Inform the Quarry Manager of any identified causes resulting in elevated noise during construction
All employees and contractors	- Comply with all requirements in this Plan; - Follow any instructions provided by the Quarry Manager

10.0 Definitions

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

Table 10.1: Definitions

Term	Definition
CCC	Community Consultative Committee
CNMP	Construction Noise Management Plan
DA	Development Application
DECC	Department of Environment and Climate Change
Development Consent	DA 165-7-2005 MOD 3
DPE	Department of Planning and Environment (now Department of Planning, Industry and Environment)
DPIE	Department of Planning, Industry and Environment
EP&A Act	NSW <i>Environmental Planning and Assessment Act 1979</i>
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMP	Environmental Monitoring Program
EMS	Environmental Management System
EPA	Environment Protection Authority
EPL	Environment Protection Licence
ICNG	Interim Construction Noise Guideline
Incident	An occurrence or set of circumstances that: - causes, or threatens to cause material harm to the environment; or - results in non- compliance with the consent
INP	Industrial Noise Policy
OEH	Office of Environment and Heritage
Secretary	The Secretary of the NSW Department of Planning and Environment, including any authorised delegate or nominee.
SEE	Statement of Environmental Effects

11.0 References

Department of Environment & Climate Change, 2009, *Interim Construction Noise Guideline*.

Department of Planning and Environment, 2006, *Conditions of Consent DA no. 165-7-2005*.

Department of Planning and Environment, 2006, *Conditions of Consent DA no. 165-7-2005 Modification 1*.

Department of Planning and Environment, 2006, *Conditions of Consent DA no. 165-7-2005 Modification 2*.

Department of Planning and Environment, 2006, *Conditions of Consent DA no. 165-7-2005 Modification 3*.

Department of Planning and Environment, 2006, *Conditions of Consent DA no. 165-7-2005 Modification 4*.

Dixon Sand (Penrith) Pty Ltd, 2017, *Environmental Monitoring Program – Dixon Sand Haerses Road, Maroota*, Report prepared for DP&E approval .

Dixon Sand (Penrith) Pty Ltd, 2017, *Environmental Monitoring Strategy – Dixon Sand Haerses Road, Maroota*, Report prepared for DP&E approval .

Environmental Protection Authority (EPA), 2000, *NSW Industrial Noise Policy*.

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*.

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 2019, *Haerses Road Quarry Modification 3 – Statement of Environmental Effects*.

Appendix 1

Checklist – DPIE Environment Management Plan Guidelines

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
Document preparation and endorsement		
Has the Plan been prepared in consultation with all relevant stakeholders? (Section 3.1)	NA (Sub Plan)	NA (Sub Plan)
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)	NA (Sub Plan)	NA (Sub Plan)
Has the Plan been certified on behalf of the proponent? (Section 3.2)	Appendix 1	Yes
Version content		
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 2.2	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 8.0	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)	Sections 2.1.1 and 5	Yes

Requirement	Plan Reference	Yes/No/NA
Have all further studies required to support mitigating measures been identified and included? (Section 2.11)	Section 2.4 (no further studies)	Yes
Have project hold points been identified and included? (Sections 2.7.2 and 2.12)	Section 2.5	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 5.2	Yes
Have the tools that will be used to communicate Plan requirements to project personnel been included? (Section 2.14)	Section 5.2.1	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 6.0	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)	Sections 5.2.2 and 5.4	Yes
Does the document include the incident notification and reporting protocols that comply with the relevant conditions of consent? (Section 2.17.3)	NA (Sub Plan)	NA (Sub Plan)
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 5.2.1	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

Project Name	Haerses Road Quarry
Project Application Number	DA 165-7-2005
Proponent	Dixon Sand (No.1) Pty Ltd
Document Title	Acoustic Bund Construction Noise Management Plan
Document Version	V1
Date of Issue	26 November 2021

Haerses Road Quarry Acoustic Bund Construction 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 Acoustic Bund Construction 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 Acoustic Bund Construction 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.

Name of Certifier	Hunny Churcher
Position	Environment Officer
Company	Project Environmental Services
Date	25 November 2021

Appendix 2

Complaint Register Form

DIXON SAND (No. 1) PTY LTD

COMPLAINTS REGISTER FORM

All complaints or comments received from the public to be recorded on a copy of this form. The Environmental Officer and/or Quarry Manager must be advised of the complaint immediately.

Time & Date of receipt of Complaint	
Method of Complaint (e.g. verbal, telephone, email):	
Name of Quarry in relation to the Complaint	
Nature of Complaint:	
Weather conditions at time relating to complaint (wind/rain?):	
Name / address / contact no. of Complainant: (If complainant will not provide details, provide a note to that effect)	
Complaint recorded by:	
Section to be completed by Site Supervisor:	
Recommended Action: (If no action is to be taken, provide reason why)	
Implementation required by (date):	
Complainant to be contacted on (date if required):	
Action completed: Signed / date (Quarry Manager / Enviro. Officer)	