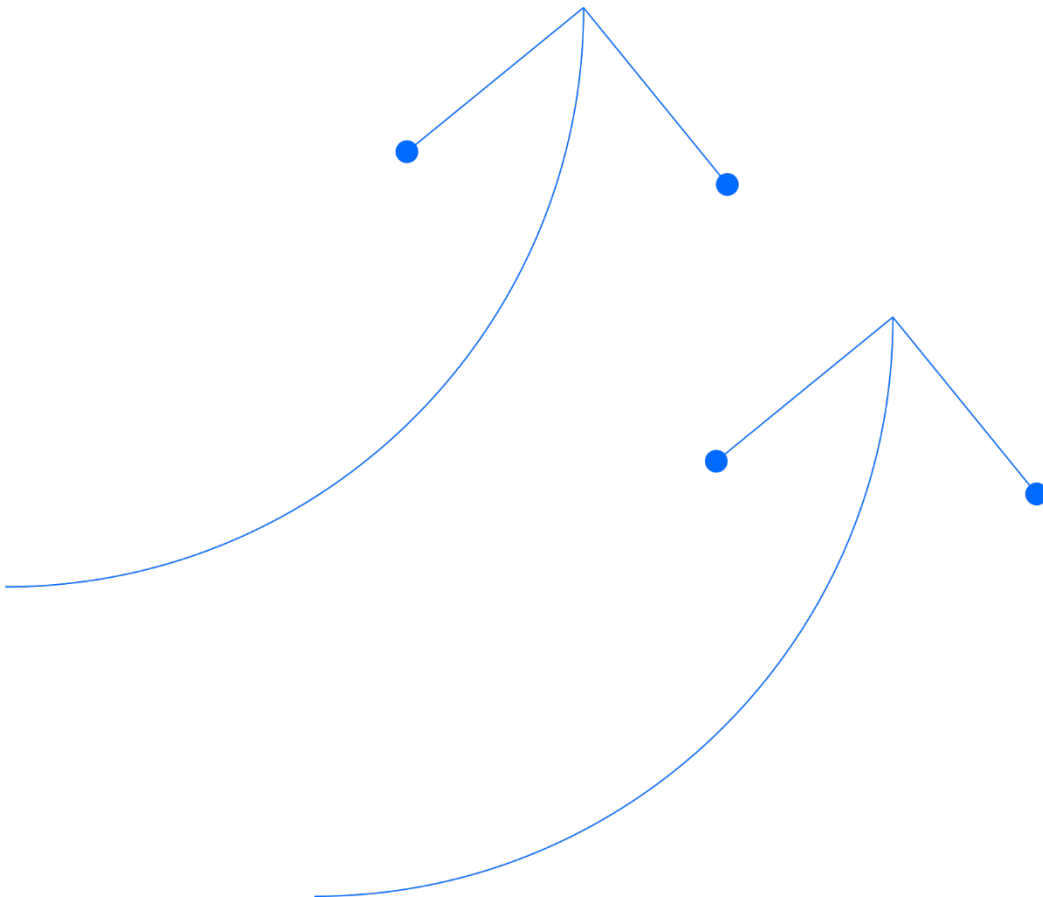


STAGE 1 – PRELIMINARY WORKS CONSTRUCTION NOISE MANAGEMENT PLAN

November 2023



Project name		Hunter Gas Pipeline					
Document title		Stage 1 – Preliminary Works Construction Noise Management Plan					
Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S3	0	C Doyle GHD	E Dunlop Santos	On file	T Dunn	On file	13/09/2023
S4	1	C Doyle E Milton GHD	E Dunlop Santos	On file	T Dunn	On file	25/10/2023
S4	2	E Milton GHD	E Dunlop Santos	On file	T Dunn Santos	On file	29/11/2023

Table of contents

Terms and abbreviations	v
1 Introduction	1
1.1 Purpose and scope of the CNMP	1
1.2 Objectives	1
1.3 Structure of this CNMP	1
1.4 Distribution	2
2 Works description	3
3 Regulatory requirements and criteria	6
3.1 Conditions of approval	6
3.2 Statement of commitments	8
3.3 Relevant codes, standards, policies and guidelines	9
4 Existing environment	10
4.1 Land use	10
4.2 Sensitive receivers	10
5 Relevant criteria	12
5.1 Conditions of approval	12
5.2 Statement of Commitments	12
5.3 Negotiated agreements	13
5.4 Summary of noise management levels	13
6 Stage 1 noise and vibration assessment	14
6.1 Noise and vibration assessment protocol	14
6.2 Preliminary Works Site 1 modelling scenarios	14
6.3 Receiver noise levels	16
7 Noise management	17
7.1 Noise management measures	17
7.2 Stakeholder engagement	21

Tables

Table 3.1 – Conditions of consent for this CNMP 6

Table 3.2 – Statement of commitments relevant to noise management 8

Table 3.3 – Relevant codes, standards, policies, and guidelines 9

Table 4.1 – Noise impact and receiver type 10

Table 5.1 – Relevant noise management levels 13

Table 6.1 – Noise Modelling Scenarios and Activity Sound Power Levels 15

Table 6.2 – Receiver noise levels 16

Table 7.1 – Noise mitigation measures 18

Figures

Figure 2.1 – Indicative Preliminary Works Site 1 Layout 4

Figure 2.2 – Site locality in relation to local townships 5

Figure 4.1 – Sensitive receivers and indicative noise monitoring station within the vicinity of the Preliminary Works Site 1 11

Terms and abbreviations

Abbreviations	Terms
AS	Australian Standard
CEMP	Construction Environmental Management Plan
CNMP	Construction Noise Management Plan
CoA	Conditions of approval for the HGP MP 06_0286
CSSI	Critical State Significant Infrastructure
dBA	A-weighted decibel
DECC	The former NSW Department of Environment and Climate Change
DPE	NSW Department of Planning and Environment
EA	Queensland Hunter Gas Pipeline Environmental Assessment (Manidis Roberts, 2008)
EMS	Environmental Management Strategy
EPA	NSW Environment Protection Authority
HGP	Hunter Gas Pipeline
ICNG	<i>Interim Construction Noise Guideline</i> (DEC 2009)
ISO	International Organisation for Standardisation
km	kilometre
NPfi	<i>Noise Policy for Industry 2017</i> (EPA)
RBL	rating background level
SoC	Statement of commitments
SPL	Sound Power Level

1 Introduction

1.1 Purpose and scope of the CNMP

This Construction Noise Management Plan (CNMP) has been prepared as a sub-plan to the Hunter Gas Pipeline (HGP) Stage 1 – Preliminary Works Construction Environmental Management Plan (CEMP) and must be read in conjunction with the CEMP. The CNMP has been prepared considering the following approval documents, noise management guidelines and other relevant Project documents:

- Conditions of Project Approval MP 06_0286 (CoA) as modified (Mod 1)
- Interim Construction Noise Guideline (ICNG) (DEC 2009)
- The Environmental Assessment (EA) (as defined by the CoA) – *Queensland Hunter Gas Pipeline Environmental Assessment* (Manidis Roberts 2008) as modified by the:
 - Submissions Report for the Queensland Hunter Gas Pipeline (November 2008); and
 - Request to modify the approved project, dated 18 October 2018, including the associated Response to Submissions dated 27 December 2018 and Additional Information provided to the Department dated May 2019.

This CNMP provides details on the management and mitigation of noise generated during the construction and use of the Preliminary Works Site 1 to minimise any potential impacts on nearby sensitive receivers and acoustic amenity.

1.2 Objectives

The objectives of this CNMP are to:

- Detail the relevant statutory requirements (including any relevant approval conditions) for the proposed Stage 1 works
- Detail the relevant commitments or recommendations identified in the EA for the proposed Stage 1 works
- Identify sensitive receivers and noise sensitive areas relevant to the proposed Stage 1 works
- Outline relevant noise criteria for the range of expected activities
- Describe management measures to minimise noise generation and impacts
- Outline noise monitoring and recording requirements
- Describe reporting protocols to notify the regulator, relevant stakeholders and affected residents.

1.3 Structure of this CNMP

The CNMP sets out the details required by the Approval Condition 6.3 and provides additional noise management requirements to address the objectives in section 1.2. The structure of this CNMP is as follows:

- Section 1: Outlines the context, scope, purpose and objectives of this CNMP
- Section 2: Provides an introduction to the project and the proposed Stage 1 activities
- Section 3: Outlines the statutory provisions relevant to the management of noise generated by the Stage 1 activities
- Section 4: Describes the characteristics of the Preliminary Works Site 1, including details about the sensitive receivers and noise sensitive areas
- Section 5: Outlines the noise criteria required under the CoA
- Section 6: Provides the noise assessment protocol and a preliminary noise and vibration assessment of the Stage 1 activities

- Section 7: Outlines the controls for management of noise, assessment protocol, stakeholder engagement and record keeping.

1.4 Distribution

A copy of the approved CNMP will be made available to all Santos personnel and contractors via the Santos intranet.

2 Works description

Stage 1 works involve the establishment and use of Preliminary Works Site 1. The Preliminary Works Site 1 will be used primarily for temporary equipment and machinery storage, pipe storage and will house a site office. Refer to Figure 2.1 for the proposed layout of the Preliminary Works Site 1. Further details of construction and use of Preliminary Works Site 1 including work activities, work program, workforce and traffic generation, are provided in section 1 and 2 of the CEMP.

Preliminary Works Site 1 is located at lot on plan 1/596894, 40 Nicholsons Lagoon Rd, Quipolly, NSW 2343, about 65 kilometres (km) southwest of Tamworth in the Liverpool Plains Local Government Area (Figure 2.2). The site is situated approximately 20 km northwest of the township of Quirindi. The land is classified as RU1 and has been cleared for the purpose of primary production, being dominated by highly disturbed pastures. Land surrounding the site is also used for primary production.

The Preliminary Works Site 1 is dominated by disturbed, non-native pasture. The site has been located to avoid crossing or disturbing watercourses, clearing of native vegetation, flora and fauna habitat, as well as maximising the distance to sensitive receptors. The site has been located so that it is in close proximity to the approved HGP corridor as well as major transportation routes, including existing major highways and rail yards.

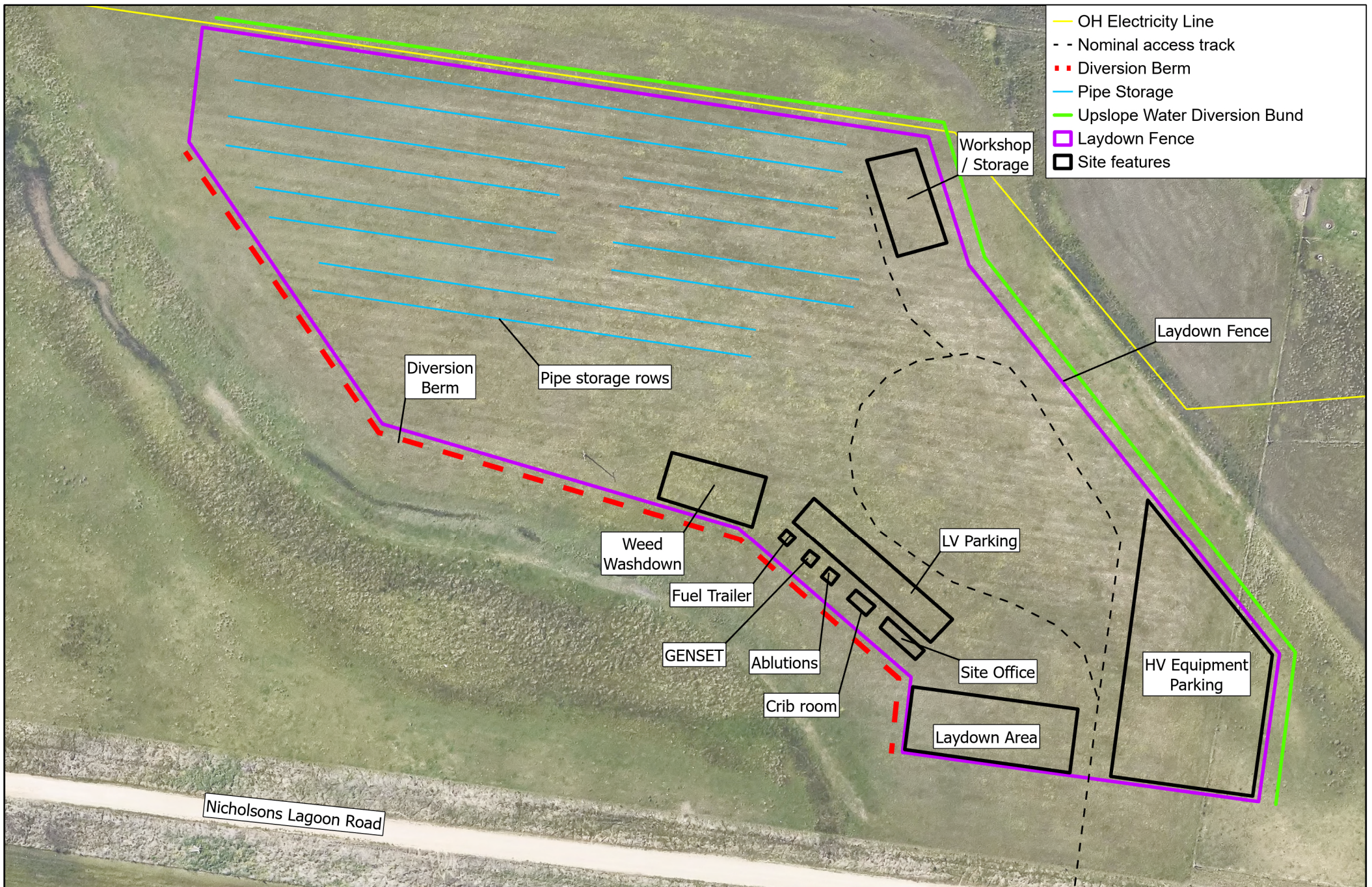
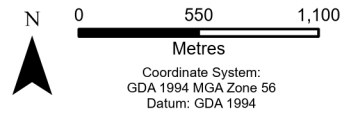


Figure 2.1
Indicative Preliminary Works Site 1 Layout



- Preliminary works site 1
- HGP Corridor
- Road, DTDB
- Cadastre

Figure 2.2
Site locality in relation to local townships



Certain information in this map is provided under license from third parties and is subject to intellectual property rights. Hunter Gas Pipeline has made every effort to ensure that information is accurate and up-to-date but does not guarantee or warrant the accuracy, completeness or currency of, and takes no responsibility for any error or omission relating to, this map. Hunter Gas Pipeline and its related bodies corporate accept no responsibility for any errors or omissions. The "User" acknowledges that information and maps are in a constant state of change and accepts all limitations. To the maximum extent permitted by law, Hunter Gas Pipeline and its related bodies corporate will not be liable for any cost, loss or damage arising out of the use of this map.

3 Regulatory requirements and criteria

The project was approved under the *Environmental Planning and Assessment Act 1979* and subsequently declared a Critical State Significant Infrastructure (CSSI) project.

Stage 1 activities will be carried out in accordance with the:

- Relevant CoA
- Statement of commitments, and
- The EA.

3.1 Conditions of approval

Table 3.1 provides the CoA that are relevant to the management of noise for Stage 1 and have been addressed in this CNMP. Note that no blasting is proposed for the Preliminary Works Site 1 therefore conditions relating to blasting (CoA 3.2-3.5) have not been referred to in this CNMP.

Table 3.1 – Conditions of consent for this CNMP

Condition Number	Condition	Where addressed
CoA-3.1	<p>The Proponent shall only undertake construction activities associated with the project, other than blasting, that would generate an audible noise at any residential or sensitive receiver during the following hours:</p> <ul style="list-style-type: none"> a) 7:00 am to 6:00 pm, Mondays to Fridays, inclusive; b) 8:00 am to 1:00 pm on Saturdays; and c) at no time on Sundays or public holidays. <p>Subject to the Secretary’s approval of the Construction Environmental Management Plan (under condition 6.2), construction activities may occur outside these hours (for example a 28-day construction, 9 day respite construction schedule approach).</p> <p>This condition does not apply in the event of a direction from police or other relevant authority for safety reasons, or to avoid immediate environmental harm.</p> <p>NOTE: the 28-day on/ 9-day off cycle is generally accepted as appropriate construction hours, however it is important that recognition is given to noise sensitive areas and an alternative schedule be developed for these areas through the Construction Environmental Management Plan.</p>	<p>Section 5.1</p> <p>Note: that for Stage 1 activities no out of hours works will be undertaken</p>
CoA-6.2 i) iii)	<p>Details of how the environmental performance of the construction works will be monitored, and what actions will be taken to minimise environmental impacts. In particular, the following environmental performance issues shall be addressed in the Plan:</p> <ul style="list-style-type: none"> iii) measures to monitor and minimise noise emissions during construction works; 	<p>Sections 6.1 and 7.1</p>
CoA-6.3	<p>The Construction Environmental Management Plan required under condition 6.2 must include:</p>	-
CoA-6.3 a)	<p>A Construction Noise Management Plan to minimise noise impacts during construction. The Plan must include but not necessarily be limited to:</p>	<p>This CNMP is for Stage 1 works</p>

Condition Number	Condition	Where addressed
CoA-6.3 a) i)	Revised noise predictions for the final route of the pipeline, taking in consideration the proposed mitigation measures;	The pipeline route is not applicable to this CNMP however noise predictions associated with the Preliminary Works Site 1 are included in Section 6.3.
CoA-6.3 a) ii)	<p>Details of the scheduling and management of construction works outside the hours specified under condition 3.1, where relevant, including:</p> <ul style="list-style-type: none"> • identification of construction works and construction areas for which construction noise will be audible or inaudible at respective residential and sensitive receivers; • for construction works identified as audible at residential and sensitive receivers, provisions for consultation with affected receivers with respect to any construction works outside the hours specified under condition 3.1, including provisions for the establishment of negotiated agreements with those receivers for out-of-hours works; • reflection of a general 28-day construction, 9-day respite scheduling approach, unless the intensity of works and/ or nature of impacted residential or sensitive receivers requires otherwise. In such circumstances, the Plan shall demonstrate that consideration has been given to additional noise mitigation (at-source and/ or at receiver), or alternatively that the 28-day/ 9- day scheduling cycle has been refined in recognition of the impacted receivers; • reflection of an approach to scheduling construction activities that takes into account the intensity, characteristics (tonality/ frequency/ impulsiveness) and duration of construction noise and the need for provision of respite for affected receivers; • recognition of special arrangements required for public and religious holidays, sensitive receivers (hospitals, schools etc) and sensitive periods (for example, school exam periods); • proactive and reactive monitoring and management measures for all audible out-of-hours construction works; • auditing and reporting requirements, where relevant, to ensure that residential and sensitive receivers are not being adversely impacted by construction noise associated with the project; 	Not applicable. No out of hours works will be undertaken for Stage 1.
CoA-6.3 a) iii)	Details of the measures that would be implemented to minimise the construction noise impacts of the project, having regard to the best practice requirements outlined in the <i>Interim Construction Noise Guideline</i> (DECC, 2009), or its latest version; and	Section 7.1
CoA-6.3 a) iv)	Details, where impacts cannot be mitigated to meet the relevant highly noise affected criterion in the <i>Interim Construction Noise Guideline</i> , of effective consultation and/or negotiation with affected receptors.	Section 7.2

3.2 Statement of commitments

The Submissions Report (QHGP 2008) outlines the commitment to the objectives and actions that must be taken for managing the environmental impacts of the Project to minimise or avoid adverse outcomes. The Statement of Commitments (SoC) from the Submissions Report relevant to this CNMP have been provided below in Table 3.2. Note that no blasting is proposed for the Preliminary Works Site 1 therefore commitments relating to blasting have not been referred to in this CNMP.

Table 3.2 – Statement of commitments relevant to noise management

Reference	Commitment	Where addressed
SoC-CM2	Construction camps, pipeline storage areas and vehicle depots will be located in accordance with the criteria set out in Chapter 5 (Table 5.3 of the EA – Distance from dwellings or other sensitive receivers is to be at least 100 metres for associated pipeline infrastructure)	Section 4.2
SoC-CM3	Construction works would be undertaken between 7am and 6pm, seven days a week for 28 days and then nine days off, except in the following instances where extended construction hours may occur when: <ul style="list-style-type: none"> • HDD drill rig is in operation until completion of the HDD bore (continuity of process required). • Boring is in operation until completion of the boring. • Water filling of the pipeline and pumping pressure is required to be obtained for hydro-testing (continuity of process required). • Extenuating circumstances out of the control of the project (such as weather, industrial relations) result in delays to the pipeline program, notice would be given to the DoP Director-General [DPE Secretary] with an outline of proposed work hours and schedule. • Works do not pose an audible disturbance to any residences. • Transport of plant, equipment and pipe by oversized trucks outside of hours as required by authorities for safety reasons. • It is required in an emergency to avoid injury or loss of life, property and/or to prevent environmental harm. • Agreement is reached with local residents in order to reduce the duration of construction activities and/or manage other traffic, amenity or disturbance issues. 	Section 5.1 Note: that for Stage 1 activities no out of hours works will be undertaken
SoC-CM4	Where construction noise is audible at the major level at sensitive receivers, consultation with impacted residents will be undertaken 48 hours in advance of work and during the local construction period as necessary. The level of major audibility at sensitive receivers is 50dBA at isolated residences and 55dBA at township residences.	Section 7.2
SoC-N1	Construction noise and vibration management strategies will be outlined in the CEMP. Construction and operation measures will include: <ul style="list-style-type: none"> • Liaising with community to advise on likely timing and duration of noisy activities • Resolving complaints received from residents and landowners • Using noise abatement measures where reasonable and feasible. 	Sections 6.1, 7.1 and 7.2

3.3 Relevant codes, standards, policies and guidelines

The guidelines, standards and policies relevant to noise management for Stage 1 of HGP are outlined in Table 3.3.

Table 3.3 – Relevant codes, standards, policies, and guidelines

Reference Document	Function	Applicability to CNMP
<i>Interim Construction Noise Guideline (ICNG) (DEC 2009)</i>	The Guideline is specifically aimed at managing noise from construction works regulated by NSW, and is used in setting statutory conditions in licences or other regulatory instruments.	The Stage 1 noise and vibration assessment in Section 6 has been completed in accordance with the processes set out in the ICNG e.g., identifying noise sensitive receivers and noise assessment criteria, and the noise management measures in Section 7 are generally in accordance with the ICNG.
<i>AS2436: 2010 – Guide to noise and vibration control on construction, demolition, and maintenance sites.</i>	The Australian Standard provides guidance in the control of noise and vibration on construction sites, and provides guidance on the assessment of noise and vibration.	The equipment sound power levels for the Stage 1 noise and vibration assessment in Section 6.2 were drawn from AS2436:2010.
<i>Noise Policy for Industry (EPA, 2017) (NPfI)</i>	The Policy is aimed at providing guidance on the regulation and management of noise from industrial sites and is used by the NSW Environment Protection Authority (EPA) to inform its decision-making when regulating and managing noise from industrial sources.	The recommended minimum background noise levels for the Stage 1 noise and vibration assessment in Section 5.1 were taken from the NPfI.
<i>ISO9613 Acoustics — Attenuation of sound during propagation outdoors — Part 2: General method of calculation</i>	This part of ISO9613 specifies an engineering method to calculate the attenuation of sound during propagation outdoors in order to predict the levels of environmental noise at a distance from a variety of sources.	The prediction method utilised in the Stage 1 noise and vibration assessment protocol in Section 6.1 was taken from ISO9613.
<i>AS1055:2018 Acoustics – Description and measurement of environmental noise</i>	Outlines general procedures for the description and measurement of environmental noise. The Standard defines quantities to be used in the description of noise and provides procedures for the determination of these quantities.	Measurement and reporting of noise levels will comply with AS1055.

4 Existing environment

4.1 Land use

The land where Preliminary Works Site 1 is located is classified as RU1. The land has been cleared for the purpose of primary production and is dominated by highly disturbed, non-native pastures. Land surrounding the site is also used for primary production.

4.2 Sensitive receivers

Five residential receivers have been identified within the vicinity of the Preliminary Works Site 1. Details of these receivers and their location are provided in Table 4.1 and illustrated in Figure 4.1. The residence on the same lot as the Preliminary Works Site 1 (situated immediately east of the site boundary) is considered a part of the Preliminary Works Site 1 and is not a sensitive receiver for the purposes of this plan.

Table 4.1 – Noise impact and receiver type

Receiver	Distance to Preliminary Works Site 1	Address
R1	280 metres	111 Nicholsons Lagoon Road, Quipolly
R2	480 metres	43 Nicholsons Lagoon Road, Quipolly
R3	610 metres	2976 Kamilaroi Highway, Quipolly
R4	630 metres	145 Nicholsons Lagoon Road, Quipolly
R5	680 metres	242 Nicholsons Lagoon Road, Quipolly

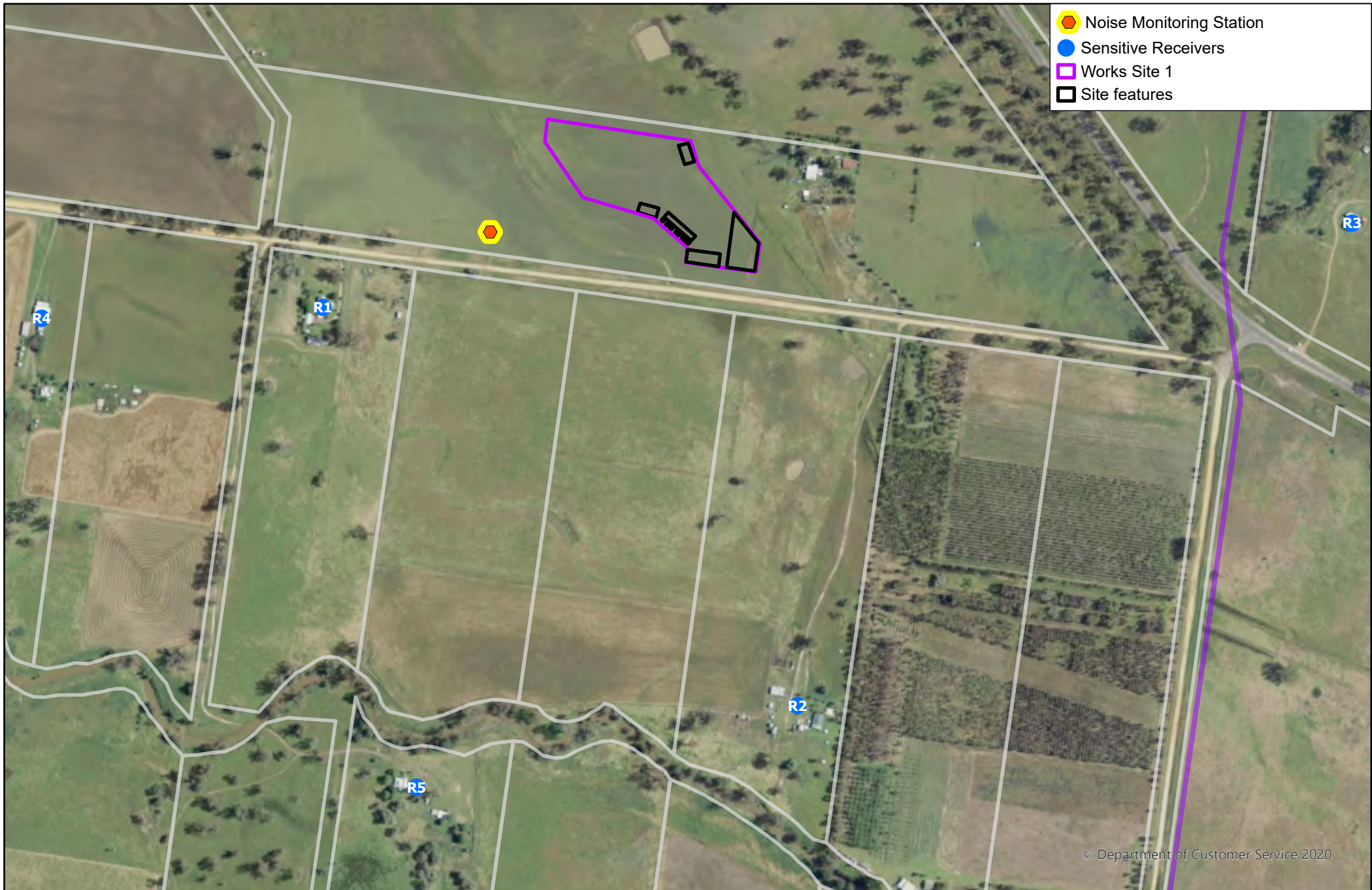


Figure 4.1
Sensitive receivers and
indicative noise monitoring station
within the vicinity of the Preliminary Works Site 1

5 Relevant criteria

5.1 Conditions of approval

5.1.1 Standard hours

The standard hours for construction and use of the site are as follows:

- 7:00 am to 6:00 pm, Monday to Friday
- 8:00 am to 1:00 pm on Saturdays
- And at no time on Sundays or public holidays.

The CoA do not provide noise management levels during standard construction hours however CoA-6.3 iii) does refer to the ICNG:

“details of the measures that would be implemented to minimise the construction noise impacts of the project, having regard to the best practice requirements outlined in the ICNG, or its latest version;”

The ICNG provides the noise affected noise management level where:

- All reasonable and feasible work practices should be applied to meet the noise affected level.
- All potentially impacted residences should be informed of the expected noise levels, duration and contact details.

The noise affected noise management level is the Rating Background Level (RBL) plus 10 dBA during standard hours of construction¹. The RBL during this period is set at a minimum of 35 dBA as adopted from the Noise Policy for Industry (EPA, 2017) therefore the noise affected noise management level during standard hours is 45 dBA.

CoA-6.3 iv) states that the CNMP must contain details of effective consultation and/or negotiation with any receiver that cannot be mitigated to meet the relevant highly noise affected criterion in the ICNG which is 75 dBA:

iv) details, where impacts cannot be mitigated to meet the relevant highly noise affected criterion in the ICNG, of effective consultation and/or negotiation with affected receptors

5.1.2 Out of hours work

Out of hours works are not proposed for the Stage 1 activities and conditions relevant to out of hours work have not been considered in this CNMP.

5.2 Statement of Commitments

SoC-CM4 makes the following principal commitment in regards to construction noise emissions:

Where construction noise is audible at the major level at sensitive receivers, consultation with impacted residents will be undertaken 48 hours in advance of work and during the local construction period as necessary. The level of major audibility at sensitive receivers is 50dBA at isolated residences and 55dBA at township residences.

This approach for consultation will be adopted however applied at the ICNG noise affected noise management level of 45 dBA as all works are to be conducted during standard hours.

¹ Noise Policy for Industry (EPA, 2017) day-time hours are defined as 7am to 6pm (Monday to Saturday) and 8am to 6pm (Sundays and Public Holidays) which covers the entire standard construction hours period of 7am to 6pm (Monday to Friday), 8am to 1pm (Saturday).

5.3 Negotiated agreements

Negotiated agreements may be established with sensitive receivers where noise levels exceed 75 dBA. Based on predicted receiver noise levels described in Section 6.3, negotiated agreements are unlikely to be required for Stage 1 activities which would occur during standard hours.

5.4 Summary of noise management levels

A summary of the relevant noise management levels and associated consultation requirements are presented in Table 5.1, where relevant negotiated agreements are not in place.

Table 5.1 – Relevant noise management levels

Requirement	Consultation action	Noise management level, dBA
CoA-6.3 iv) – Standard hours highly noise affected at any residence	Effective consultation and/or negotiation with affected receivers. Details of consultation to be included in the CNMP.	75
CoA-6.3 iii) and SoC-CM4	Consultation with impacted residents will be undertaken 48 hours in advance of work and during the local construction period as necessary. Impacted residents will be informed of the nature of construction works, expected noise levels, duration and provided Santos contact details.	45

6 Stage 1 noise and vibration assessment

6.1 Noise and vibration assessment protocol

Based on the proposed activities, the following protocol has been implemented for the assessment of noise impacts at sensitive receivers in the vicinity of the Preliminary Works Site 1. Noting that all activities will occur during standard construction hours and therefore, no outside of hours criteria, assessment protocol or mitigation are applicable.

1. Identify all planned infrastructure and activity locations.
2. Identify noise sensitive receivers in the vicinity of the Preliminary Works Site 1.
3. Based on the proposed activities expected to occur, identify the applicable noise criteria for any noise sensitive receivers.
4. Noise modelling has been used to predict noise levels at nearby noise sensitive receivers from the construction and use of the Preliminary Works Site 1.
5. The noise protocol for sensitive receivers is as follows:
 - Noise management measures presented in Section 7.1, where reasonable and feasible, would be implemented where the ICNG noise affected level is exceeded which is the RBL + 10 dBA or 45 dBA as a minimum during standard hours.
 - Sensitive receivers where the ICNG noise affected level is exceeded (45 dBA) will be informed of the nature of the works, expected noise levels, duration and provided Santos contact details.
 - For activities that cannot be mitigated to meet the relevant highly noise affected criterion in the ICNG (75 dBA), provisions of effective consultation / negotiation with the affected receivers are to be made. Note that for the Preliminary Works Site 1 there are not expected to be any exceedances to the highly noise affected criterion.
6. In the event of a noise complaint, Santos will review the measured noise levels from the noise monitoring station (as described below) and noise generating activities at the time of the event. If it is determined that noise levels are above 45 dBA LAeq 15 mins, further reasonable and feasible work practices or mitigation measures will be implemented.

A Class 1 IEC 61672 compliant noise monitoring station will be deployed at the indicative location shown in Figure 4.1 (subject to siting constraints). The noise monitoring station will include directional microphones to assist with filtering construction noise from ambient noise. A weather station will be co-located with the noise monitoring station to filter any data during rain events or wind speeds above 5 m/s.

The noise monitoring station location has been chosen as an intermediate location between Preliminary Works Site 1 and the nearest sensitive receiver. The preliminary noise model will be updated to establish transfer functions between the monitoring location and the receiver locations to determine noise level at the receiver.

6.2 Preliminary Works Site 1 modelling scenarios

The construction of the Preliminary Works Site 1 will consist of the following key activities:

- Clearing and grading the site including the associated access track
- Stockpiling of topsoil and subsoil for reuse across the site
- Placement of gravel across the entire site to provide a hardstand area
- Installation of erosion and sediment controls
- Installation of perimeter fencing to separate construction areas from publicly accessible areas
- Installation of public information signage on the perimeter fence as per CoA-6.2 b)
- Installation of a shaker grid at entrance to site

- Installation of pipe racks, or similar for the storage of piping
- Installation of temporary office and power including diesel generator and ablution facilities
- Installation of a self-contained weed washdown facility and associated recycled water storage tank.

From these activities, two construction scenarios have been developed and are provided below in Table 6.1. Equipment sound power levels for all equipment have been sourced from *AS2436: 2010 – Guide to noise and vibration control on construction, demolition, and maintenance sites*. These scenarios assume all equipment is operating simultaneously which is likely to be conservative for the majority of the time. Predictions have been undertaken using *ISO9613 Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation*, assuming soft ground and downwind noise propagation.

Additionally, Stage 1 includes the use of the preliminary works site until the commencement of Stage 2. The Preliminary Works Site 1 will be used by the project team to support material logistics coordination, survey, and land access activities to finalise the 30 metre easement. Activities will include:

- Storage of plant and equipment
- Storage of piping and other materials required for pipeline planning, survey or construction
- Use of the weed washdown facility.

A third scenario has been included to encompass noise emissions from the use of Preliminary Works Site 1.

Table 6.1 – Noise Modelling Scenarios and Activity Sound Power Levels

Modelling Scenario	Equipment	Sound Power Level (SWL), dBA	Activity SWL, dBA
CS01 – clearing, grading and laying of gravel	D9 Dozer	108	116
	Grader	110	
	Roller	108	
	Water Cart	107	
	Truck	107	
	Excavator	107	
	Generator	99	
CS02 – installation of pipe racks, offices, storage facilities and power generation	Truck	107	111
	Mobile Crane	104	
	Hand Tools	102	
	Welder	105	
	Generator	99	
	Shakedown/washdown pad	100	
CS03 – Use of Preliminary Works Site 1	Generator	99	110
	Shakedown/washdown pad	100	
	Truck	107	
	Vehicle (light commercial)	106	

6.3 Receiver noise levels

The predicted receiver noise levels for each receiver during each scenario are presented in Table 6.2.

Table 6.2 – Receiver noise levels

Receivers	Receiver noise level, dBA		
	CS01	CS02	CS03
R1	49	44	44
R2	44	39	38
R3	41	36	35
R4	42	37	36
R5	42	37	36

Based on an assumed worst case modelling scenario, there is the potential the noise affected noise management level during standard hours of 45 dBA is exceeded at noise sensitive receiver R1 by up to 4 dBA during the initial site clearing, grading and laying of gravel. The following actions would be taken for R1:

1. Consultation would be undertaken 48 hours in advance of work and during the local construction period as necessary. They would be informed of the nature of construction works, expected noise levels, duration and provided with Santos contact details.
2. Investigate application of reasonable and feasible work practices in Section 7.1.
3. In the event of a noise complaint, Santos will follow the process outlined in Section 6.1 (Step 6).

Based on noise modelling, all other receivers and scenarios are predicted to comply with the noise management level.

7 Noise management

The following section details mitigation measures that will be implemented throughout the construction and use of Preliminary Works Site 1 in order to manage noise impacts from the project and comply with the relevant CoA, mitigation measures in the EA and SoC commitments. Appendix A of the CEMP includes a compliance matrix which aligns with the DPIE 2020 *Environmental Management Plan Guideline*. The 'reference' columns in the following sections refer to commitments in the compliance matrix, please refer to Appendix A of the CEMP for further information.

7.1 Noise management measures

The noise management measures provided in Table 7.1 are to be implemented during the construction and use of Preliminary Works Site 1. Noise management measures are consistent with the best work practices from Section 6 of the ICNG.

Table 7.1 –Noise mitigation measures

Reference	Action	Timing	Frequency	Records	Responsibility
CoA-3.1 SoC-CM3 EA/AG-4.8.1A RS/AE-4.8.1A	All activities are to occur during the following hours: <ul style="list-style-type: none"> 7:00 am to 6:00 pm, Mondays to Fridays, inclusive; 8:00 am to 1:00 pm on Saturdays; and at no time on Sundays or public holidays. <p>The activity hours do not apply in the event of a direction from police or other relevant authority for safety reasons, or to avoid immediate environmental harm.</p>	During construction and use	Ongoing	Site signage Induction materials Site inspection checklist	Construction Supervisor
CoA-6.2 i) iii) EA/AG-4.8.1F RS/AE-4.8.1A	Establish a noise monitoring station near the Preliminary Works Site to monitor construction noise. As described in Section 7.1 of the NPfl, adjustments to account for the location to the receivers would be made when assessing noise levels from the monitoring station.	During construction and use	Ongoing	Noise monitoring station output files	Team Leader - Onshore Environment
EA/AG-4.8.1E	Using the data from noise monitoring station, validate the noise model during the initial stages of clearing, grading and laying of gravel (CS01).	During construction	Once	Noise monitoring station output files	Team Leader - Onshore Environment
SoC-N1 RS/AE-4.8.1D MA/A2-4.1.21A	Consult with residents 48 hours in advance of construction work commencing and during the construction period as necessary where construction noise has the potential to exceed 45 dBA during standard hours.	During construction	Ongoing	Correspondence	Team Lead - NSW Regional
SoC-N1 EA-11.7-I MA/A2-4.1.21A	Provide affected receivers (which have the potential to exceed 45 dBA during standard hours) with details on the timing and duration of noisy activities, a contact name and number for ongoing liaison.	Pre-construction	Once	Correspondence	Team Lead – NSW Regional

Reference	Action	Timing	Frequency	Records	Responsibility
SoC-N1 EA-11.7-J	Implement complaints procedure outlined in Section 7 of the Environment Management Strategy (EMS) maintaining contact and responding to all calls within 24 hours.	During construction and use	Ongoing	Complaints register	Team Lead – NSW Regional
EA-11.7-M MA/A2-4.1.21C	Induct all site personnel in the potential for noise impacts and measures to reduce noise including appropriate behaviour on site (example no shouting, slamming doors etc).	Pre-construction	Periodically	Induction register	Construction Supervisor
SoC-N1 EA-11.7-N EA/AG-4.8.1H	Keep all engine covers closed while equipment is operating.	During construction and use	Ongoing	Site inspection checklist	Construction Supervisor
CoA-1.8 a) SoC-N1 EA-11.7-H EA-11.7-N EA/AG-4.8.1E EA/AG-4.8.1H EA/AG-4.8.1I RS/AE-4.8.1A RS/AE-4.8.1B MA/A2-4.1.21B MA/A2-4.1.23B	Inspect and service plant and vehicles in line with manufacturers recommendations. Remove machines found to produce excessive noise compared to industry best practice from the site or stand them down until repairs or modifications can be made. Return hired equipment that is causing noise that is not typical for the equipment. Replace noisy plant with less noisy alternatives.	During construction	Ongoing	Servicing records Pre-start inspection records	Construction Supervisor
SoC-N1	Plan site vehicle movements to minimise reversing of vehicles.	Pre-construction	Ongoing	Traffic Control Plan	Construction Supervisor
SoC-N1 EA-11.7-N EA/AG-4.8.1H	Avoid the use of exhaust brakes wherever practicable.	During construction and use	Ongoing	Plant acceptance checklist	Construction Supervisor
SoC-N1 EA-11.7-N	Fit broadband reversing alarms to plant and vehicles, where practical.	During construction and use	Ongoing	Plant acceptance checklist	Construction Supervisor

Reference	Action	Timing	Frequency	Records	Responsibility
SoC-N1 EA-11.7-N EA/AG-4.8.1K EA/AG-4.8.1L RS/AE-4.8.1B RS/AE-4.8.1C	Provide acoustic treatments for generators	During construction	Ongoing	Site inspection checklist	Construction Supervisor
EA/AG-4.8.1H RS/AE-4.8.1B	Fit residential grade mufflers on all mobile plant utilised on site.	During construction and use	Ongoing	Plant acceptance checklist	Construction Supervisor
SoC-N1 EA-11.7-N EA/AG-4.8.1D RS/AE-4.8.1A	Maximise the offset distance between noisy plant and adjacent sensitive receivers.	During construction	Ongoing	Site inspection checklist	Construction Supervisor
SoC-N1 EA-11.7-N EA/AG-4.8.1H	Turn off plant and vehicles when not in use.	During construction and use	Ongoing	Site inspection checklist	Construction Supervisor
SoC-N1 EA-11.7-N	Direct noise-emitting plant away from sensitive receivers, where possible.	During construction	Ongoing	Site inspection checklist	Construction Supervisor
EA/AG-4.8.1C RS/AE-4.8.1A	Review required equipment for the task and where reasonable and feasible minimise the number of pieces of equipment operating simultaneously.	During construction	Ongoing	Construction scheduling program	Construction Supervisor

7.2 Stakeholder engagement

7.2.1 Notifications

The noise assessment conducted in Section 5.4 indicates that noise levels have the potential to exceed the 45 dBA noise affected noise management level during standard construction.

Where the noise affected noise management level is expected to be exceeded, then potentially affected landowners will be provided with advanced notice of the nature of the activities, expected noise levels and duration and means of contacting Santos. Santos will implement noise mitigation strategies as detailed in Section 7.1 for the duration of those activities during standard hours as far as reasonable and feasible.

No receivers were identified to exceed the highly noise affected noise management level and written agreements between Santos and landholders are not expected to be required.

7.2.2 Complaint process

Santos will maintain a Complaints Management Procedure as outlined in Section 7 of the EMS. In the event of a noise complaint, Santos will follow the process outlined in Section 6.1 (Step 6).