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Central Coast Sand Quarry Project Noise Management Plan

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Central Coast Sand Quarry Project

Noise Management Plan

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DOCUMENT CONTROL

Reference	Status	Date	Prepared	Checked	Authorised
630.01872-R1R3	Revision 3	3 January 2018	Belinda Pignone	Andrew Driver	Andrew Driver
630.01872-R1R2	Revision 2	11 October 2017	Belinda Pignone	Andrew Driver	Andrew Driver
630.01872-R1R1	Revision 1	24 October 2014	Ryan Wakeling	Dick Godson	Dick Godson
630.01872-R1R0	Revision 0	22 October 2014	Ryan Wakeling	Dick Godson	Dick Godson

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1. INTRODUCTION

The Minister for Planning and Infrastructure has conditionally approved the continued operation of the Central Coast Sand Quarry (CCSQ), NSW until 30 June 2044.

The following report contains the Noise Management Plan (NMP) for CCSQ, detailing monitoring locations, methods of monitoring noise as well as the correct compliance checking procedures for the subsequent reporting in accordance with the Department of Planning and Environment (DP&E) and the Environment Protection Authority (EPA) requirements.

Condition 2, Schedule 5 of the Project Approval (hereafter the "Approval") contains the requirements for the CCSQ Management Plans and states that:

Management Plan Requirements

2. *The proponent shall ensure that the Management Plans required under this approval are prepared in accordance with any relevant guidelines, and include:*

- a) *detailed baseline data;*
- b) *a description of:*
 - (i) *the relevant statutory requirements (including any relevant approval, licence or lease conditions);*
 - (ii) *any relevant limits or performance measures/criteria; and*
 - (iii) *the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;*
- c) *a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;*
- d) *a program to monitor and report on the:*
 - (i) *impacts and environmental performance of the project; and*
 - (ii) *effectiveness of any management measures (see (c) above);*
- e) *a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;*
- f) *a program to investigate and implement ways to improve the environmental performance of the project over time;*
- g) *a protocol for managing and reporting any:*
 - (i) *incidents;*
 - (ii) *complaints;*
 - (iii) *non-compliances with statutory requirements; and*
 - (iv) *exceedances of the impact assessment criteria and/or performance criteria; and*
- h) *a protocol for periodic review of the plan.*

Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.

Table 1 provides a summary of the planned noise monitoring program and identifies the relevant sections in the NMP that contain the detailed program description.

Table 1 Summary of Planned Noise Monitoring Program

Monitoring Timing	Activity Monitored	Requirements and Program Reference
1. Undertaken when operational equipment commences work on site	Noise emission level	Criteria and Program Sections 2 and 4 respectively
2. Undertaken quarterly (B, C, D) and annually (G, R) after all components of the project are operating	Quantification of intrusive noise emissions	Program Section 4.2 for on-site monitoring and Section 4.3 for community monitoring
3. Undertaken when a non-compliance is identified in Item 2 above	Actions to be determined at the time of non-compliance and would be specific to the individual situation May require unattended continuous noise logging	Section 4.3

2. PROJECT NOISE MANAGEMENT PLANS/EMISSION LIMITS

Condition 12, Schedule 3 of the Approval states that:

Noise Management Plan

12. *The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must:*

- a) *be prepared in consultation with the EPA, and be submitted to the Secretary for approval prior to undertaking quarrying operations in the Quarry Extension Area or by November 2014, whichever is the sooner;*
- b) *describe the measures that would be implemented to ensure:*
 - (i) *compliance with the relevant conditions of this approval;*
 - (ii) *best management practice is being employed; and*
 - (iii) *the noise impacts of the project are minimised during meteorological conditions under which the noise criteria in this approval do not apply;*
- c) *describe the proposed noise management system; and*
- d) *include a monitoring program that:*
 - (i) *uses attended monitoring to evaluate the compliance of the project against the noise criteria in this approval;*
 - (ii) *evaluates and reports on the effectiveness of the noise management system and the best practice noise management measures; and*
 - (iii) *defines what constitutes a noise incident at the project, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any noise incidents.*

Table 2 of the Approval and the associated notes and references are as follows:

Table 2 Noise criteria dB(A)

Location	Day	Evening	Morning	Shoulder
	L _{Aeq} (15 min)	L _{Aeq} (15 min)	L _{Aeq} (15 min)	LA1(1 min)
B	37		37	
C	37		38	
D	38		40	
G	36	35	38	47
R	36		38	
All other privately-owned land	35		35	

Noise generated by the project is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy. Appendix 5 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, the noise criteria in Table 2 do not apply if the Proponent has an agreement with the relevant landowner to exceed the noise criteria, and the Proponent has advised the Department in writing of the terms of the agreement.

In turn, Appendix 5 of the Approval, Noise Compliance Assessment, contains the following:

1. The noise criteria in Table 2 of the conditions are to apply under all meteorological conditions except the following:
 - a) during periods of rain or hail; or
 - b) wind speeds greater than 3 m/s measured at 10 m above ground level.

Determination of Meteorological Conditions

2. Except for wind speed at microphone height, the data to be used for determining meteorological conditions shall be that recorded by the meteorological station on or in the vicinity of the site.

Compliance Monitoring

3. Attended monitoring is to be used to evaluate compliance with the relevant conditions of this approval.
4. Unless otherwise agreed with the Secretary, this monitoring is to be carried out in accordance with the relevant requirements for reviewing performance set out in the NSW Industrial Noise Policy (as amended from time to time), in particular the requirements relating to:
 1. monitoring locations for the collection of representative noise data;
 2. meteorological conditions during which collection of noise data is not appropriate;
 3. equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; and
 4. modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration.

3. NOISE MANAGEMENT MEASURES

Condition 6b, Schedule 3 of the Approval states that:

- b) *describe the measures that would be implemented to ensure:*
- (i) compliance with the relevant conditions of this approval;*
 - (ii) best management practice is being employed; and*
 - (iii) the noise impacts of the project are minimised during meteorological conditions under which the noise criteria in this approval do not apply;*

The following best practice construction, operational and transport noise management measures are implemented at Central Coast Sand Quarry.

Site Procedures

- Optimise the site design and layout.
 - The construction and maintenance of the 5m high earth bund along the extension area boundary. This bund will be a permanent fixture and will remain for the duration of quarry operations.
- Raise the awareness and understanding of noise issues and the use of quiet work practices via site inductions for all staff, contractors and visitors to Central Coast Sand Quarry.
- Avoid the simultaneous use of significant noise generating equipment wherever possible. The least amount of equipment as possible will be used for each project operation.
- Where practical, site noisy equipment behind structures that act as barriers (noise barrier/bund), or at the greatest distance from noise-sensitive areas, or orienting the equipment so that noise emissions are directed away from any sensitive areas in order to achieve the maximum attenuation of noise.
- Minimise noise impacts of the project during meteorological conditions
 - The Quarry Manager or Quarry Supervisor will assess the risk, taking into account all variables to ultimately decide whether to continue production or delay to a later time.
 - This risk based assessment allows flexibility for the Quarry Manager or Quarry Supervisor to manage quarry staff and the unpredictability of adverse weather conditions.

Plan Equipment

- All machinery and plant used on site will be regularly maintained in order to minimise excessive noise generation.
- Where applicable, maintain the effectiveness of any noise suppression equipment (e.g. acoustic attenuator) on the plant to ensure that a defective plant is not operated until repaired.
- The least intrusive types of reversing alarms will be used.
- Specify maximum noise/sound levels when purchasing equipment.

Source and Transmission Noise Controls

- Enclosure of specific fixed plant and noise intensive areas such as hopper bins and loading bay – where equipment is enclosed, ensure that equipment is well maintained and, if openable, kept closed when not in use.

4. NOISE MONITORING PROGRAM

As discussed, Condition 12, Schedule 3 of the Approval states that:

- d) *include a monitoring program that:*
- (i) uses attended monitoring to evaluate the compliance of the project against the noise criteria in this approval;*
 - (ii) evaluates and reports on the effectiveness of the noise management system and the best practice noise management measures; and*
 - (iii) defines what constitutes a noise incident at the project, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any noise incidents.*

4.1 General Requirements

The noise measurement procedures employed throughout the monitoring program will be in accordance with the requirements of AS 1055 1997 "Acoustics - Description and Measurement of Environmental Noise" and the NSW EPA's Industrial Noise Policy, 2000 (INP).

4.2 Operator Attended Noise Surveys

Operator attended noise measurements and recordings will be conducted to quantify the intrusive noise emissions from quarrying and processing operations as well as the overall level of ambient noise.

The operator will quantify and characterise the maximum (L_{Amax}) and the average (L_{Aeq}(15minute)) intrusive noise level from quarrying and processing operations over a 15 minute measurement period. In addition, the operator shall quantify and characterise the overall levels of ambient noise (ie L_{Amax}, LA1, LA10, LA50, LA90, LA99, L_{Amin}) over the 15 minute measurement interval.

4.3 Monitoring Locations and Intervals

In order to check compliance, noise measurements will be carried out at the closest monitoring locations (B, C, D, G and R) identified in Table 2, Schedule 3 of the Approval. Figure 1 (Appendix 4 of the Approval) shows the location of the closest adjoining residences identified in Table 2.

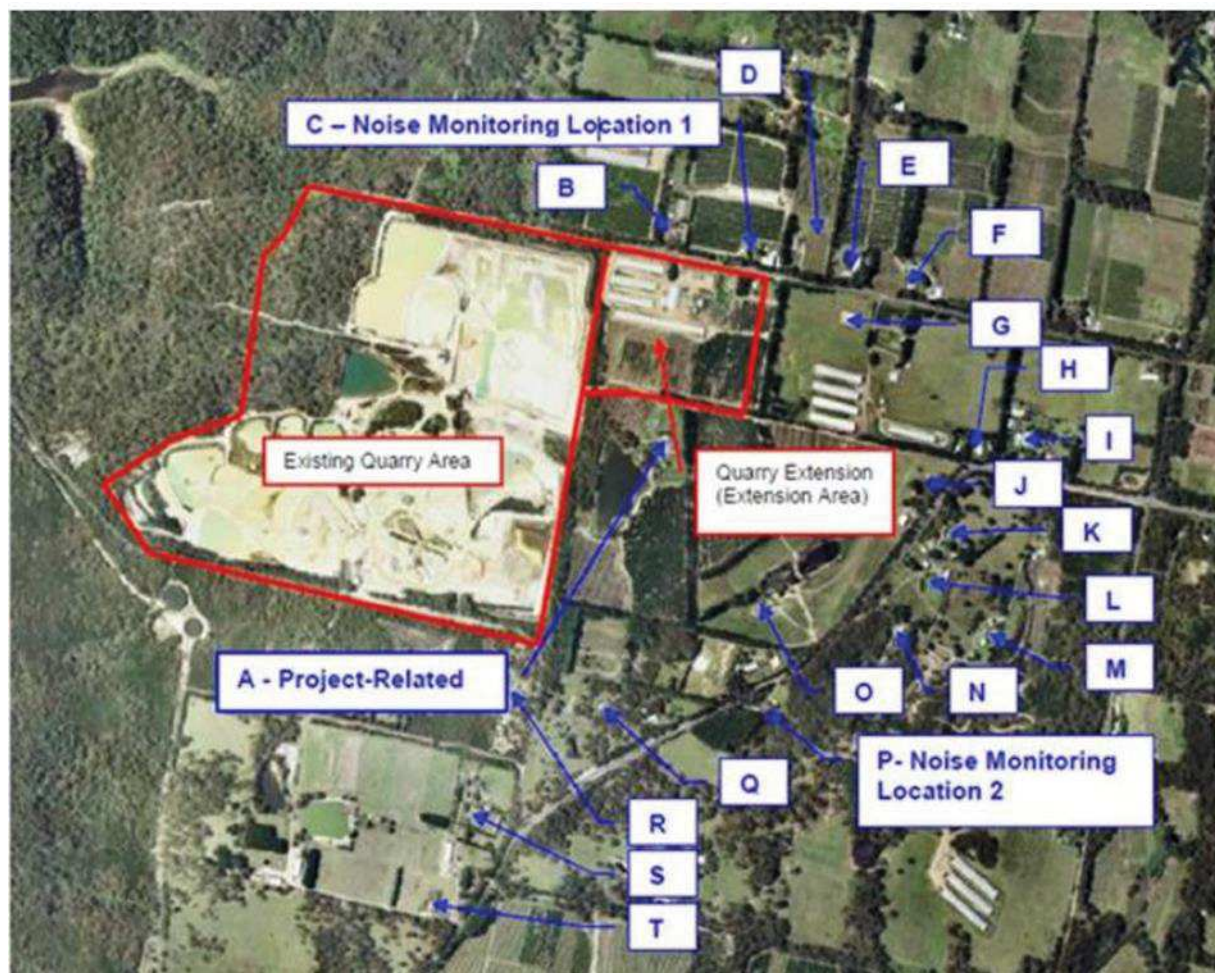


Figure 1 Location of the Closest Receivers to the Quarry

Quarterly attended noise monitoring at B, C, D (Keighley Avenue) will be conducted for the first three (3) years after all components of the project are operating. All other monitoring locations (G, R) will have noise measurements conducted annually after all components of the project are operating.

If non-compliance is identified, it will be addressed appropriately. This may require unattended continuous noise logging in order to quantify the overall ambient noise levels resulting from quarrying and processing operations as well as from other environmental noise sources.

Noise monitoring may be discontinued if compliance with the nominated criteria is demonstrated at all monitoring locations after three (3) consecutive years.

5. INSTRUMENTATION AND MEASUREMENT PARAMETERS

5.1 Operator-Attended Surveys

All acoustic instrumentation employed throughout the monitoring program will be designed to comply with the requirements of AS 1259.2-1990, "Sound Level Meters" and carry current NATA or manufacturer calibration certificates.

All instrumentation will be programmed to record continuously statistical noise level indices in 15 minute intervals which may include the LAmax, LA1, LA50, LA10, LA50, LA90, LA99, LAmin and the LAeq.

Instrument calibration will be checked before and after each measurement survey, with the variation in calibrated levels not to exceed ± 0.5 dB.

5.2 Weather Monitoring Instrumentation

All noise measurements will be accompanied by both a qualitative description (including cloud cover) and quantitative measurements of the prevailing local weather conditions throughout the survey period.

Meteorological measurements will be guided by the requirements of AS 2923 1987 "Ambient Air- Guide for Measurements of Horizontal Wind for Air Quality Applications". An automatic weather station will be used to continuously record the meteorological parameters as shown in Table 2.

Table 3 Meteorological Measurement Parameters

Measured Parameter	Unit	Sample Interval
Mean wind speed	km/hr (or m/s)	15 minute
Mean wind direction	Degrees	15 minute
Sigma-theta	Degrees	15 minute
Aggregate rainfall	mm	15 minute
Mean air temperature	°C	15 minute
Mean relative humidity	%RH	15 minute

5.3 Plant and Equipment Observations and Log

During the attended noise measurements, the operator will record any significant quarry generated noise sources (ie haul trucks, dozers, crushers, etc) and collect information regarding the operating equipment and machinery. In addition, the operator will obtain copies of the relevant fixed plant and mobile quarrying equipment operating shift logs.

6. DOCUMENTING, REPORTING AND CORRECTIVE ACTION

6.1 Operator Attended Noise Surveys

The measured contributed noise emissions from quarrying, processing and transporting operations will be evaluated and assessed with the noise emission criteria presented in Table 2 of the Approval.

6.2 Reporting

The CCSQ reporting requirements are outlined in Condition 12, Schedule 3 of the Approval. Condition 12 requires the Proponent to report on the effectiveness of the noise management system on the site. This would, in turn, require reporting any exceedance of the goals/limits/performance criteria or an incident causing (or threatening to cause) material harm to the environment. Such a report would be submitted to the Secretary and any other relevant agencies within 7 days of the exceedances or incident (refer to Condition 7, Schedule 5 of the Approval).

Condition 4, Schedule 5 of the Approval requires the Proponent to submit an annual review of environmental performance to the satisfaction of the Secretary each March. The first of these reports is due to be submitted by the end of March 2015.

6.3 Excessive Noise Emissions and Corrective Action

Condition 3, Schedule 5 of the Approval details procedures to follow should a situation occur where monitored project impacts are greater than the relevant impact assessment criteria.

Condition 3 states that:

“Where any exceedance of these criteria and/or performance measures has occurred, the Proponent shall, at the earliest opportunity:

- a) *take all reasonable and feasible measures to ensure that the exceedance ceases and does not recur;*
- b) *consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measure or other course of action; and*
- c) *implement remediation measures as directed by the Director-General (now Secretary) I, to the satisfaction of the Director-General (now Secretary).”*

Where the noise monitoring identifies non-compliance with the relevant criteria, the Proponent will plan and carry out corrective action.

The corrective action may involve supplementary monitoring in order to identify the source of the non-conformance and/or may involve modification of the quarry operations or programme to avoid any recurrence or minimise its adverse effects.

Appendix A

Consultation with EPA

Pignone, Belinda (Parramatta) AUS

From: Pignone, Belinda (Parramatta) AUS
Sent: Monday, 23 October 2017 11:10 AM
To: 'hunter.region@epa.nsw.gov.au'
Subject: FW: Hanson_Central Coast Sands Quarry AQMP & NQMP follow-up
Attachments: 610.01872-R3.pdf; 630.01872 NMP R1R2 20171011.pdf

Attention Mark Hartwell.

Good morning Mark,

I am following up on my previous emails as well as my messages left with the EPA office regarding the attached management plans. Hanson requires a response from the EPA regarding the Central Coast Sands Quarry Air Quality Management Plan and Noise Quality Management Plan, as details in my pervious emails. As you mentioned during our phone conversation on the 9th of October, EPA do not provide consultation on management plans. If this is the case, could you please provide a reply with this justification so the management plans can be finalised ASAP.

Thank you for your time.

Kind regards,

Belinda Pignone

Graduate Environ and Compl Coordinator

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From: Pignone, Belinda (Parramatta) AUS
Sent: Wednesday, 11 October 2017 9:39 AM
To: 'hunter.region@epa.nsw.gov.au'
Subject: Hanson_Central Coast Sands Quarry AQMP & NQMP follow-up

Attention Mark Hartwell.

Good morning Mark,

I am following up on my previous email sent 9 October with the inclusion of the Noise Management Plan. As stated in the DPE review of the Central Coast Sands Quarry Annual Review:

... the Department has determined that additional noise and air quality monitoring is required in the extension area as follows:

- *Quarterly attended noise monitoring at sensitive receivers in Keighley Avenue for the first three years or future timing as may be agreed by the Secretary;*
- *Installation of an additional real time air quality monitor (TEOM or BAM) in consultation with the EPA, to continuously monitor PM10. It is noted that dust gauges have been installed in the extension area but they are prone to contamination and are not considered to be "best practice" by the EPA.*

The additional monitoring is to be incorporated into revised noise and air quality management plans to the satisfactory of the Secretary.

You will be required to provide evidence of consultation with the EPA for the revised air quality management plan and noise management plan.

The Department defers to the EPA on the appropriate air quality monitoring equipment. As mentioned during the inspection, the EPA has advised the Department that a DustTrak monitor does not meet the relevant Australian Standards.

I have attached the updated Central Coast Sands Quarry Air Quality Management Plan and Noise Quality Management Plan for EPA consultation. A reply by the 12th October would be greatly appreciated as Hanson requires the resubmission of these management plans as soon as possible. Should this not be a realistic deadline, please let me know.

Belinda Pignone

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From: Pignone, Belinda (Parramatta) AUS
Sent: Monday, 9 October 2017 9:40 AM
To: 'hunter.region@epa.nsw.gov.au'
Cc: Driver, Andrew (Parramatta) AUS
Subject: Hanson_Central Coast Sands Quarry AQMP

Attention Mark Hartwell.

Good morning Mark,

Thank you for taking the time to speak to me this morning.

I have attached the updated Central Coast Sands Draft *Air Quality Management Plan* for consultation by the EPA, as requested by the Department of Planning & Environment on the 21 August 2017. Please note the following request by the DPE:

Installation of an additional real time air quality monitor (TEOM or BAM) in consultation with the EPA, to continuously monitor PM10.

It is noted that dust gauges have been installed in the extension area but they are prone to contamination and are not considered to be "best practice" by the EPA.

The additional monitoring is to be incorporated into revised noise and air quality management plans to the satisfaction of the Secretary.

You will be required to provide evidence of consultation with the EPA for the revised air quality management plan and ~~water~~ noise management plan.

The Department defers to the EPA on the appropriate air quality monitoring equipment. As mentioned during the inspection, the EPA has advised the Department that a DustTrak monitor does not meet the relevant Australian Standards.

I also note that the plan is required to be re-submitted to the Department of Planning and Environment by the 16th of October. Any comments would be appreciated by the 12th of October to allow me enough time to input these comments into the report by the due date. Should this not be a realistic deadline, please let me know.

Kind regards,

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