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# Noise Report Addendum



**BYLONG** COAL PROJECT
Environmental Impact Statement

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Pacific Environment Limited

Consulting • Technologies • Monitoring • Toxicology

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Dear Nathan

**RE: Bylong Noise Report Addendum**

# 1 INTRODUCTION

This report is an addendum to the Noise and Blasting Impact Assessment (NBIA) dated 10th July 2015 (document ACO-NW-001-05832) prepared by Pacific Environment to support the Bylong Coal Project Environmental Impact Statement (EIS) (**Hansen Bailey, 2015**).

This revised assessment was completed for Hansen Bailey on behalf of WorleyParsons Services Pty Limited (WorleyParsons) as the project manager for the Bylong Coal Project (the Project), which is owned by KEPCO Bylong Australia Pty Ltd (KEPCO).

This report presents the noise predictions for the revised haul road layout developed to accommodate the realigned Upper Bylong Road (North Link Road) as the preferred alternative of providing access to landholders to the south of the Project in response to submissions to the EIS.

Modelling of traffic noise impacts has also been undertaken for revised traffic flows into the Project during the construction phase for a no Workers' Accommodation Facility (WAF) scenario which has been requested in a submission.

Unless otherwise stated, all modelling assumptions and scenarios are consistent with the NBIA.

# 2 OVERVIEW

This document presents the findings of revised haul road designs passing over the North Link Road as presented in the following drawing in Appendix A:

- HB 1538 BYLONG (RTS) - FIGURE 7 - North Link Road (17-Feb-16)

This document has been completed in consideration of the following documents and guidelines:

- Industrial Noise Policy (INP) (**EPA, 2000**);
- Draft Industrial Noise Guideline (ING) (**EPA, 2015**); and
- Department of Planning and Environment (DP&E) Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments (VLAM) (**DP&E, 2014**).

# 3 MODIFICATIONS

Modifications to the original proposed haul road design were required in order to raise the level of the two mine haul roads over the proposed North Link Road.

**Appendix A** presents the revised haul road layout. The two crossings are located to the west of the ROM pad (northern crossing) and the west of the eastern open cut / emplacement area (southern crossing). The revised design will raise the hauls road by approximately 4.5 m for the northern crossing and 3.9 m for the southern crossing. Noise model topographic data and noise source alignments were updated with the revised haul road vertical alignments.

# 4 NOISE MODELLING

Noise predictions for each of the mine assessment years were rerun to include the revised haul road topography. This included operational scenarios for Year 3, Year 5, Year 9 and Year 9 Underground only. Model reruns also included each of the meteorological conditions assessed as part of the NBIA.

**Table 4-1** reproduces the meteorological conditions included in the NBIA and consistently utilised within the revised assessment.

**Table 4-1: Meteorological Modelling Conditions**

| ID | Period | Meteorological Conditions | Modelling Parameters | | | |
|---|---|---|---|---|---|---|
| | | | Wind | Pasquil-Gifford Stability Class | Relative Humidity | Air Temperature |
| 1 | Day | Neutral | No Wind | D | 70% | 20°C |
| 2 | Day | Gradient Wind | 3 m/s ESE | D | 70% | 20°C |
| 3 | Day | Gradient Wind | 3 m/s S | D | 70% | 20°C |
| 4 | Day | Gradient Wind | 3 m/s WSW | D | 70% | 20°C |
| 5 | Evening/Night | Neutral | No Wind | D | 90% | 10°C |
| 6 | Evening/Night | Gradient Wind | 3 m/s S | D | 90% | 10°C |
| 7 | Evening/Night | Gradient Wind | 3 m/s SE | D | 90% | 10°C |
| 8 | Evening/Night | Gradient Wind | 3 m/s WSW | D | 90% | 10°C |
| 9 | Evening/Night | Temperature Inversion | No Wind | F | 90% | 10°C |
| 10 | Evening/Night | Temperature Inversion and Drainage Flow | 2 m/s SSE | F | 90% | 10°C |

Source: NBIA (**Pacific Environment, 2015**).

# 5 OPERATIONAL MODELLING RESULTS

Predicted noise levels for impacted receivers for each period of the day and meteorological conditions described in **Table 4-1** are presented in **Table 5-1** for Years 3, 5 and 9 mine years and Year 9 underground only. The results are inclusive of adopted mitigation measures (as stipulated in Section 5.4 of the NBIA) and revised haul road design. Detailed noise modelling results at sensitive receivers are presented in **Appendix B**.

Colour coding in **Table 5-1** indicates exceedances of the PSNL as described in the VLAM policy.

## Table 5-1: Predicted Impacts to Receivers All Mining Years – Revised Haul Road Design

| Period[1] / Condition / ID / Receiver ID | Criteria $L_{Aeq,15min}$ | Predicted Noise Level $L_{Aeq,15min}$ dB(A) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Day 1 | Day 2 | Day 3 | Day 4 | Eve/ Night 5 | Eve/ Night 6 | Eve/ Night 7 | Eve/ Night 8 | Eve/ Night 9 | Eve/ Night 10 |
| **Year 3** | | | | | | | | | | | |
| 56 | 35 | 30 | 35 | 35 | 25 | 31 | 37 | 37 | 26 | 37 | 36 |
| 58 | 35 | 31 | 37 | 37 | 26 | 33 | 38 | 38 | 27 | 38 | 37 |
| 60 | 35 | 35 | 40 | 40 | 32 | 37 | 41 | 41 | 33 | 41 | 40 |
| 65A | 35 | 35 | 39 | 39 | 32 | 36 | 40 | 40 | 32 | 40 | 40 |
| 63 | 35 | 35 | 40 | 40 | 32 | 37 | 41 | 41 | 33 | 41 | 40 |
| 68 | 35 | 34 | 39 | 39 | 33 | 36 | 40 | 40 | 34 | 40 | 39 |
| 69 | 35 | 38 | 42 | 42 | 40 | 40 | 43 | 43 | 40 | 43 | 43 |
| 141 | 35 | 27 | 24 | 27 | 34 | 29 | 25 | 30 | 36 | 36 | 31 |
| **Year 5** | | | | | | | | | | | |
| 56 | 35 | 28 | 34 | 34 | 25 | 29 | 36 | 36 | 26 | 36 | 35 |
| 57A | 35 | 27 | 33 | 33 | 23 | 28 | 36 | 35 | 24 | 36 | 34 |
| 57C | 35 | 26 | 33 | 33 | 22 | 28 | 36 | 35 | 24 | 36 | 34 |
| 58 | 35 | 29 | 36 | 36 | 26 | 31 | 38 | 38 | 27 | 38 | 37 |
| 60 | 35 | 32 | 38 | 38 | 32 | 33 | 40 | 40 | 33 | 40 | 39 |
| 65A | 35 | 31 | 38 | 38 | 32 | 33 | 39 | 39 | 34 | 39 | 39 |
| 63 | 35 | 31 | 38 | 38 | 32 | 33 | 40 | 40 | 34 | 40 | 39 |
| 68 | 35 | 31 | 37 | 37 | 33 | 32 | 39 | 39 | 35 | 39 | 38 |
| 69 | 35 | 34 | 40 | 40 | 36 | 36 | 42 | 42 | 38 | 42 | 42 |
| 141 | 35 | 26 | 23 | 23 | 33 | 28 | 24 | 24 | 35 | 35 | 28 |
| 151 | 35 | 31 | 30 | 27 | 27 | 33 | 29 | 29 | 29 | 39 | 33 |
| 158 | 35 | 30 | 26 | 26 | 27 | 31 | 27 | 27 | 28 | 38 | 31 |
| **Year 9** | | | | | | | | | | | |
| 60 | 35 | 31 | 36 | 36 | 27 | 32 | 38 | 38 | 29 | 38 | 38 |
| 65A | 35 | 30 | 36 | 36 | 27 | 31 | 38 | 38 | 28 | 38 | 37 |
| 63 | 35 | 30 | 36 | 36 | 27 | 32 | 38 | 38 | 29 | 38 | 37 |
| 68 | 35 | 30 | 36 | 36 | 27 | 31 | 38 | 38 | 29 | 38 | 37 |
| 69 | 35 | 33 | 39 | 39 | 32 | 35 | 41 | 41 | 33 | 41 | 41 |
| 141 | 35 | 31 | 27 | 37 | 38 | 33 | 29 | 39 | 40 | 40 | 39 |
| 151 | 35 | 30 | 32 | 26 | 26 | 32 | 28 | 28 | 28 | 39 | 32 |
| 158 | 35 | 29 | 27 | 25 | 25 | 30 | 26 | 26 | 26 | 37 | 30 |
| **Year 9 UG only** | | | | | | | | | | | |
| 60 | 35 | 29 | 34 | 34 | 26 | 30 | 36 | 36 | 27 | 36 | 36 |
| 65A | 35 | 28 | 34 | 34 | 25 | 30 | 36 | 36 | 26 | 36 | 35 |
| 63 | 35 | 29 | 34 | 34 | 25 | 30 | 36 | 36 | 26 | 36 | 36 |
| 69 | 35 | 32 | 37 | 37 | 30 | 33 | 39 | 39 | 31 | 39 | 39 |

Note: 1. Period: Day (7.00am-6.00pm Monday to Saturday and 8.00am-6.00pm Sundays and Public Holidays), Evening (6.00pm-10.00pm), Night (10.00pm-7.00am, unless preceding a Sunday or Public Holiday).
2. Cells are shaded light blue for negligible impacts, blue for moderate impacts and dark blue for significant impacts.

## 5.1 Discussion

The noise predictions indicate that the modified haul road design will impact up to 12 receivers above Project Specific Noise Level (PSNL) of 35 dBA.

Three receivers are predicted to be significantly impacted (receivers 60, 63 and 69), six moderately impacted (receivers 58, 65A, 68, 141, 151 and 158). Negligible impacts are predicted at three receivers (receivers 56, 57A and 57C).

These findings are generally consistent with the outcomes of the NBIA, with noise levels found to increase marginally from NBIA predictions. Noise levels were predicted to increase by a maximum of 0.3 dB for Year 3, 0.3 dB for Year 5, 0.6 dB dB for Year 9, and 0.1 dB for the underground only scenario. The increases only occurred at limited number of receivers.

All receivers not shown in **Table 5-1** above were predicted to receive noise levels below PSNL for all assessed meteorological conditions.

**Table 5-2** presents a summary of the receivers which are predicted to receive moderate or significant impacts (using the greatest predicted noise level) and the type of treatment recommended in consideration of the DP&E VLAM Policy.

In comparison to the outcomes of the NBIA, the number of privately owned residences eligible for acquisition or treatment remains the same.

**Table 5-2: Residually Affected Receivers and Treatment**

| Receiver ID | Impact Significance | | | | Treatment |
|---|---|---|---|---|---|
| | Year 3 | Year 5 | Year 9 | UG | |
| 56 | Negligible[1] | Negligible[1] | - | - | - |
| 57A | - | Negligible[1] | - | - | - |
| 57C | - | Negligible[1] | - | - | - |
| 58 | Moderate | Moderate | - | - | At property mitigation |
| 60 | Significant | Moderate | Moderate | Negligible | At property mitigation or acquisition |
| 65A | Moderate | Moderate | Moderate | Negligible | At property mitigation |
| 63 | Significant | Moderate | Moderate | Negligible | At property mitigation or acquisition |
| 68 | Moderate | Moderate | Moderate | - | At property mitigation |
| 69 | Significant | Significant | Significant | Moderate | At property mitigation or acquisition |
| 141 | Negligible | Moderate | Moderate | - | At property mitigation |
| 151 | - | Moderate | Moderate | - | At property mitigation |
| 158 | - | Moderate | Negligible | - | At property mitigation |

Note: 1. Indicates change from NBIA (2015).

## 5.2 Voluntary Land Acquisition Rights Assessment

The updated haul road design did not impact the privately owned land subject to land acquisition in accordance with DP&E VLAM Policy. The outcomes of the NBIA (2015) will be unchanged.

# 6 LOW FREQUENCY NOISE

Section 4.1.3 of the NBIA provides an outline of the assessment methodology for low frequency noise impacts. Research and literature reviews over recent years have demonstrated that the assessment of low frequency noise using the INP method is not necessarily appropriate in all circumstances. This has been identified and recognised by industry, and modified approaches, including contemporary methodologies have been adopted in a number of recent assessments and approved by regulatory

authorities. The NBIA included the Broner method for low frequency noise assessment, which has been used in a number of assessments in NSW.

In light of the impediments present in implementing the INP approach to the assessment of low frequency noise, the NSW EPA has recently modified the approach to be implemented in the draft Industrial Noise Guideline (Draft ING) (**EPA, 2015**). The Draft ING methodology includes further investigation into the received low frequency spectrum to determine whether or not a low frequency noise penalty should be applied.

Further assessment of low frequency noise has been completed in consideration of the Draft ING (**EPA, 2015**). This guideline has been released by the EPA in recognition that assessment of low frequency noise has been difficult to implement based on current (INP) policy. While this is not yet in force, it is understood that this methodology will be used in the future. The Draft ING outlines modifying factor corrections to be applied to the measured or modelled noise level at the receiver before comparison with the project noise trigger levels (referred to as project specific noise levels in the INP).

**Table 6-1** is an extract of Table C1 of the Draft ING, outlining the modifying factors to be applied.

**Table 6-1: Modifying Factor Corrections**

| Factor | Assessment / measurement | When to Apply | Correction[1] | Comments |
|---|---|---|---|---|
| Low frequency noise | Measurement of overall C-weighted and A-weighted level and one-third octave measurements in the range 10–160Hz | Measure/assess C- and A-weighted Leq,T levels over same time period. Correction to be applied where the C-A level exceeds 15 dB and:<br>• where any of the 1/3 octave noise levels in Table C2 are exceeded by up to 5dB and cannot be mitigated, a 2 dB(A) positive adjustment to measured/predicted A weighted levels applies for the evening/night period; or<br>• where any of the 1/3 octave noise levels in Table C2 are exceeded by more than 5dB and cannot be mitigated, a 5 dB(A) positive adjustment to measured/predicted A weighted levels applies for the evening/night period and a 2dB positive adjustment applies for the daytime period. | 2 or 5 dB[2] | A difference of 15dB or more between C- and A-weighted measurements identifies the potential for an unbalance spectrum and potential increased annoyance. The values in Table C2 are derived from Moorhouse et al, 2011 for DEFRA fluctuating low frequency noise criteria with corrections to reflect external assessment locations |

Source: Draft ING (**EPA, 2015**).
Notes: 1. Corrections to be added to the measured or predicted levels, except in the case of duration where the adjustment is to be made to the criterion.
2. Where a source emits tonal and low-frequency noise, only one 5-dB correction should be applied if the tone is in the low-frequency range.

Section C2 of the Draft ING outlines the implementation of the above corrections, and presents third-octave low frequency noise thresholds to be applied to the linear low frequency spectra. These values are presented in **Table 6-2**.

**Table 6-2: One-Third Octave $L_{Zeq,15\text{-}min}$ Low Frequency Noise Thresholds**

| f,Hz | 10 | 12.5 | 16 | 20 | 25 | 31.5 | 40 | 50 | 63 | 80 | 100 | 125 | 160 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| dB(Z) | 92 | 89 | 86 | 77 | 69 | 61 | 54 | 50 | 50 | 48 | 48 | 46 | 44 |

Source: Table C2 of the Draft ING (**EPA, 2015**).

The difference between the A and C weighted noise levels in addition to low frequency thresholds have been used to predict whether impacts are likely to occur. As outlined within the Draft ING, where the predicted noise level exceeds both criteria, adverse impacts are likely and should be considered as part of noise management measures.

The results of this assessment are presented in **Appendix B**. The thresholds for the low frequency assessment have been compared to the 63 and 125 Hz octave bands.

The results indicate that low frequency noise thresholds, as defined by the draft ING (**EPA, 2015**), are identified to be exceeded for the 63 Hz band at receiver 69 under calm day and night time conditions during Year 3 operations. Including a 2 dB penalty, noise levels during Year 3 calm conditions would be 40 dB(A) and 42 dB(A).

Noise levels also exceed the 63 Hz threshold at this receiver for Year 5 under meteorological conditions 2 and 3 (refer **Table 4-1**). Including the 2 dB penalty, noise levels during Year 3 calm conditions would be 42 dB(A) for both meteorological conditions.

Low frequency thresholds are also identified as being exceeded at receiver 69 for Year 5 under meteorological conditions 6 and 7, 9 and 10 (refer **Table 4-1**), however the difference between C-A noise levels is less than 15 dB, therefore the low frequency thresholds are not applicable

Receiver 69 has already been identified as receiving residual significant noise levels as presented in **Section 5.1** of this report.

### 6.1 Sleep disturbance

The proposed changes in haul road alignments are not anticipated to significantly influence sleep disturbance noise sources as assessed within the NBIA. Accordingly, the sleep disturbance assessment within the NBIA does not require revision.

## 7 CONSTRUCTION NOISE

Changes to construction noise impacts are not anticipated to vary significantly based on the changes to the haul road design. While construction may involve the use of additional equipment and piling techniques, it is considered that the construction noise impacts will be consistent with those presented in Section 7 of the NBIA.

## 8 ROAD TRAFFIC NOISE

During the construction phase, a workers accommodation facility (WAF) was proposed to the north of the site off Wollar Road for the temporary accommodation of the construction work force. Based on response to submissions from Mid-Western Regional Council which did not support housing workers in Bylong, an additional scenario has been developed to assess additional traffic noise generation. This scenario would only be applicable to the Year 2 scenario, which represents the peak year of construction activities. Once the construction phase is completed, road traffic noise impacts consistent with the EIS are anticipated.

Assumptions regarding shift change times are consistent with the EIS. **Table 8-1** shows the existing scenario without the Project. **Table 8-2** presents the WAF scenario and **Table 8-3** show the No WAF scenario. Each table presents the total number of vehicles, day and night time split and percentage heavy vehicles for Project Year 2. Traffic volumes for the No WAF scenario were based on additional traffic generation from workers travelling to and from the Project at the morning and afternoon shift change.

**Table 8-1: Year 2 Traffic Volumes (Without Project)**

| Road | Section | Total traffic (24hrs) | Daytime 7.00am to 10.00pm (15 hrs) | | Night 10.00pm to 7.00am (9 hrs) | |
|---|---|---|---|---|---|---|
| | | | Total traffic | % heavy vehicles | Total traffic | % heavy vehicles |
| Bylong Valley Way | East of Wollar Road | 313 | 295 | 21% | 18 | 6% |
| Bylong Valley Way | West of Wollar Road | 299 | 282 | 13% | 17 | 0% |
| Wollar Road | - | 154 | 132 | 60% | 22 | 5% |
| Bylong Valley Way | North of Upper Bylong Road | 306 | 288 | 14% | 18 | 6% |
| Bylong Valley Way | South of Upper Bylong Road | 318 | 300 | 13% | 19 | 6% |
| Upper Bylong Road | - | 186 | 176 | 12% | 10 | 0% |

**Table 8-2: Year 2 Traffic Volumes (With Project) – WAF scenario**

| Road | Section | Total traffic (24hrs) | Daytime 7.00am to 10.00pm (15 hrs) | | Night 10.00pm to 7.00am (9 hrs) | |
|---|---|---|---|---|---|---|
| | | | Total traffic | % heavy vehicles | Total traffic | % heavy vehicles |
| Bylong Valley Way | East of Wollar Road | 360 | 333 | 24% | 27 | 26% |
| Bylong Valley Way | West of Wollar Road | 815 | 738 | 21% | 77 | 13% |
| Wollar Road | - | 623 | 550 | 33% | 73 | 7% |
| Bylong Valley Way | North of Upper Bylong Road | 815 | 744 | 21% | 78 | 14% |
| Bylong Valley Way | South of Upper Bylong Road | 341 | 320 | 12% | 22 | 5% |
| Upper Bylong Road | - | 725 | 652 | 21% | 73 | 14% |

**Table 8-3: Year 2 Traffic Volumes (With Project) – No WAF scenario**

| Road | Section | Total traffic (24hrs) | Daytime 7.00am to 10.00pm (15 hrs) | | Night 10.00pm to 7.00am (9 hrs) | |
|---|---|---|---|---|---|---|
| | | | Total traffic | % heavy vehicles | Total traffic | % heavy vehicles |
| Bylong Valley Way | East of Wollar Road | 383 | 339 | 24% | 44 | 11% |
| Bylong Valley Way | West of Wollar Road | 1072 | 826 | 19% | 246 | 2% |
| Wollar Road | - | 920 | 624 | 29% | 296 | 7% |
| Bylong Valley Way | North of Upper Bylong Road | 1079 | 832 | 19% | 247 | 2% |
| Bylong Valley Way | South of Upper Bylong Road | 365 | 326 | 11% | 39 | 5% |
| Upper Bylong Road | - | 1097 | 746 | 18% | 351 | 1% |

Road traffic noise levels were predicted using the US Federal Highway Administration's Traffic Noise Model 2.5 (TNM) (**FHWA, 2004**) consistent with the EIS.

**Table 8-4** and **Table 8-5** present the predicted road traffic noise levels for Year 2 with and without the WAF.

The potentially most affected receivers were identified in the vicinity of Project related roads, consistent with the EIS. Where compliance is achieved at these receivers, compliance would be expected at receivers further from the road. These receivers and their offset from the roads are:

- Receiver 44 Wollar Road (100 m).
- Receiver 65 – Bylong Valley Way and Upper Bylong Road (17 m and 420 m).
- Receiver 68 – Bylong Valley Way and Upper Bylong Road (23 m and 34 m).
- Receiver 69 – Upper Bylong Road (144 m).
- 5036 Bylong Valley Way, Growee Bylong Valley Way south (30 m).
- 2272 Bylong Valley Way, Widden Bylong Valley Way east (22 m).

**Table 8-4: Year 2 Calculated Traffic Noise Levels – with WAF**

| Receiver ID | Without Project | | With Project | | Increase (dB) | |
|---|---|---|---|---|---|---|
| | Day $L_{Aeq,15hr}$ | Night $L_{Aeq,9hr}$ | Day $L_{Aeq,15hr}$ | Night $L_{Aeq,9hr}$ | Day | Night |
| 44 | 45 | 30 | 49 | 37 | 3.7 | 6.2 |
| 65 | 47 | 35 | 47 | 36 | 0.0 | 0.4 |
| 68 | 49 | 36 | 52 | 43 | 3.0 | 7.0 |
| 69 | 36 | 30[1] | 43 | 35 | 7.6 | 5.0 |
| 5036 Bylong Valley Way | 50 | 39 | 50 | 39 | 0.0 | 0.2 |
| 2272 Bylong Valley Way | 54 | 41 | 55 | 46 | 0.9 | 5.6 |

Note: 1. Where calculated traffic noise levels are less than 30 dB(A), they are set to 30 dB(A)

**Table 8-5: Year 2 Calculated Traffic Noise Levels – without WAF**

| Receiver ID | Without Project | | With Project | | Increase (dB) | |
|---|---|---|---|---|---|---|
| | Day $L_{Aeq,15hr}$ | Night $L_{Aeq,9hr}$ | Day $L_{Aeq,15hr}$ | Night $L_{Aeq,9hr}$ | Day | Night |
| 44 | 45 | 30 | 49 | 43 | 3.8 | 12.3 |
| 65 | 47 | 35 | 48 | 39 | 0.5 | 3.4 |
| 68 | 49 | 36 | 52 | 43 | 2.9 | 7.2 |
| 69 | 36 | 30[1] | 43 | 35 | 7.7 | 5.0 |
| 5036 Bylong Valley Way | 50 | 39 | 50 | 42 | 0.0 | 2.8 |
| 2272 Bylong Valley Way | 54 | 41 | 55 | 46 | 1.1 | 5.3 |

Note: 1. Where calculated traffic noise levels are less than 30 dB(A), they are set to 30 dB(A)
Predicted Noise levels are rounded to nearest 1 decibel.

The results in **Table 8-4** and **Table 8-5** indicate that during Year 2, the largest increases in noise level are expected to be up to 8 dB at receiver 69 during the day. Receiver 44 is predicted to receive increases of up to 12 dB during the night. These changes represent the largest potential increase as a result of the Project in the Year 2 scenario since this year contains the most site generated traffic. The NSW Road Noise Policy (**EPA 2011**) sets an increase criteria of 12 dB(A) above the existing level when noise levels are below the criteria level. The Increase at receiver 44 is at this limit.

With reference to the criteria in Section 4.6 of the EIS, the noise levels without the WAF will comply with relevant road traffic noise goals of $L_{Aeq,15hr}$ 60 dB(A) and $L_{Aeq,9hr}$ 55 dB(A) at the nearest sensitive receivers. The relative increase criterion is met at all receivers.

# 9 CONCLUSION

This assessment has been completed to reassess noise impacts at private receivers from minor adjustments in haul road alignments to accommodate the construction of the North Link Road as an alternative public access road into Upper Bylong.

The assessment has found that changes to noise impacts are marginal for Year 3, Year 5, Year 9 and only underground scenarios. Noise impacts were found to be consistent with the findings of the NBIA.

Low frequency noise has been assessed in consideration of the Draft ING methodology for low frequency noise. Analysed noise levels are not predicted to trigger modifying factor penalties and no modification to predicted noise levels has been applied.

With regard to privately owned land subject to land acquisition in accordance with DP&E VLAM Policy, the outcomes of the NBIA will be unchanged.

Additional noise impacts in the absence of the WAF have been assessed, and noise levels are predicted to increase at receiver 69 by up to 8 dB during the day. Receiver 44 is predicted to receive increases of up to 12 dB during the night. Upon completion of the construction phase, noise impacts would be consistent with the findings of the EIS.

# 10 REFERENCES

Hansen Bailey (2015). *Bylong Coal Project Environmental Impact Statement*.

Pacific Environment Limited (2015). *Bylong Coal Project Noise and Blasting Impact Assessment*.

Broner, N. *A simple outdoor criterion for assessment of low frequency noise emission,* Acoustics Australia Vol 39, April 2011.

Department of Planning and Environment (2014). *Voluntary Land Acquisition and Mitigation Policy For State Significant Mining, Petroleum and Extractive Industry Developments*.

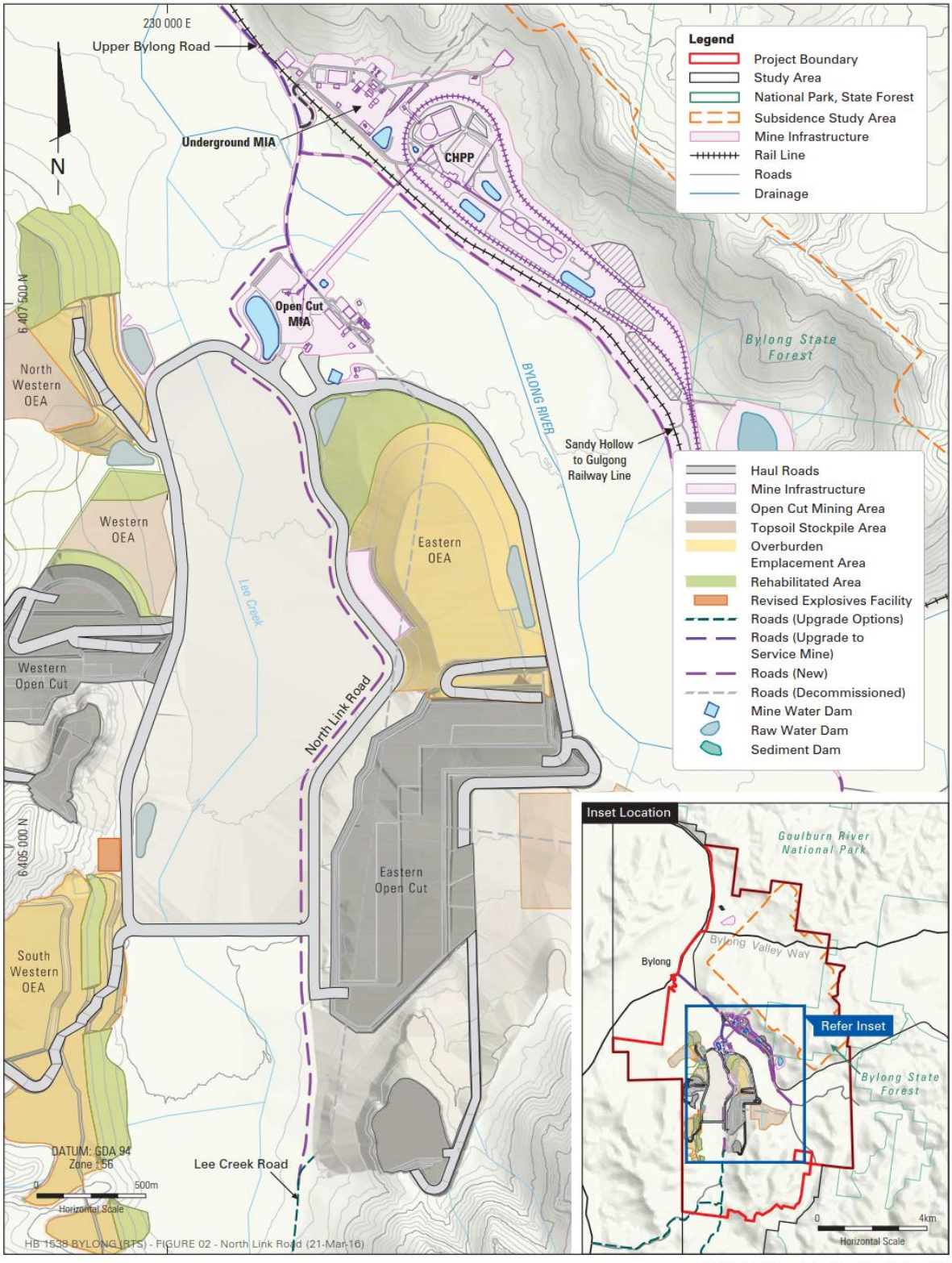
Moorhouse A, Waddington D and Adams M (2011). *Procedure for the assessment of low frequency noise complaints. Department for Environment Food and Rural Affairs* (Contract No. NANR45, Revision 1).

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

NSW Environmental Protection Authority (2011). *Road Noise Policy*.

NSW Environmental Protection Authority (2015). *Draft Industrial Noise Guideline*.

# APPENDIX A: REVISED HAUL ROAD – REALIGNED UPPER BYLONG ROAD




BYLONG COAL PROJECT

Conceptual North Link Road

# APPENDIX B: REVISED OPERATIONAL NOISE MODELLING RESULTS

## OPERATIONAL NOISE MODELLING RESULTS

**Table B-1: Year 3 Noise Modelling Results – Revised Haul Road Design**

| | Predicted Noise Level $L_{Aeq,15min}$ dB(A) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Period | Day | Day | Day | Day | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night |
| Condition ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Receiver ID | | | | | | | | | | |
| 4 | 15 | 21 | 21 | 14 | 15 | 22 | 22 | 14 | 22 | 19 |
| 5 | 15 | 21 | 21 | 14 | 16 | 22 | 22 | 15 | 22 | 20 |
| 41A | 16 | 23 | 23 | 16 | 17 | 24 | 24 | 17 | 24 | 21 |
| 41B | 17 | 23 | 23 | 16 | 17 | 24 | 24 | 17 | 24 | 21 |
| 42 | 18 | 24 | 24 | 18 | 19 | 25 | 25 | 19 | 25 | 22 |
| 43 | 17 | 23 | 23 | 19 | 18 | 24 | 24 | 20 | 24 | 21 |
| 44 | 18 | 24 | 24 | 23 | 19 | 26 | 26 | 24 | 26 | 23 |
| 47 | 18 | 24 | 24 | 21 | 19 | 25 | 25 | 22 | 25 | 23 |
| 49 | 19 | 25 | 25 | 24 | 20 | 27 | 27 | 25 | 27 | 24 |
| 50 | 19 | 26 | 26 | 25 | 21 | 28 | 28 | 27 | 28 | 25 |
| 56 | 30 | 35 | 35 | 25 | 31 | 37 | 37 | 26 | 37 | 36 |
| 57A | 28 | 34 | 34 | 23 | 29 | 35 | 35 | 24 | 35 | 34 |
| 57B | 27 | 34 | 33 | 23 | 29 | 35 | 35 | 24 | 35 | 34 |
| 57C | 27 | 34 | 34 | 23 | 29 | 35 | 35 | 24 | 35 | 34 |
| 58 | 31 | 37 | 37 | 26 | 33 | 38 | 38 | 27 | 38 | 37 |
| 60 | 35 | 40 | 40 | 32 | 37 | 41 | 41 | 33 | 41 | 40 |
| 61A | 34 | 39 | 39 | 31 | 36 | 40 | 40 | 32 | 40 | 40 |
| 61B | 34 | 39 | 39 | 31 | 36 | 40 | 40 | 32 | 40 | 40 |
| 65A | 35 | 39 | 39 | 32 | 36 | 40 | 40 | 32 | 40 | 40 |
| 63 | 35 | 40 | 40 | 32 | 37 | 41 | 41 | 33 | 41 | 40 |
| 68 | 34 | 39 | 39 | 33 | 36 | 40 | 40 | 34 | 40 | 39 |

| Period | Day | Day | Day | Day | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night |
|---|---|---|---|---|---|---|---|---|---|---|
| | Predicted Noise Level $L_{Aeq,15min}$ dB(A) | | | | | | | | | |
| Condition ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Receiver ID | | | | | | | | | | |
| 69 | 38 | 42 | 42 | 40 | 40 | 43 | 43 | 40 | 43 | 43 |
| 141 | 27 | 24 | 27 | 34 | 29 | 25 | 30 | 36 | 36 | 31 |
| 146 | 25 | 21 | 21 | 31 | 27 | 22 | 22 | 34 | 34 | 27 |
| 151 | 23 | 22 | 21 | 21 | 25 | 24 | 24 | 24 | 35 | 28 |
| 158 | 23 | 22 | 22 | 23 | 24 | 24 | 24 | 27 | 35 | 28 |
| 161 | 21 | 19 | 19 | 21 | 23 | 22 | 22 | 25 | 33 | 26 |
| 162 | 20 | 17 | 17 | 19 | 21 | 19 | 19 | 22 | 31 | 24 |
| 165 | 19 | 17 | 17 | 17 | 21 | 19 | 19 | 19 | 31 | 23 |
| 168 | 19 | 16 | 15 | 15 | 20 | 17 | 17 | 17 | 30 | 22 |
| 349 | 15 | 11 | 11 | 11 | 16 | 12 | 12 | 12 | 24 | 17 |
| 348 | 16 | 12 | 12 | 12 | 17 | 14 | 14 | 14 | 26 | 18 |
| 181A | 25 | 32 | 26 | 21 | 27 | 34 | 29 | 22 | 34 | 32 |
| 181B | 25 | 32 | 26 | 21 | 27 | 34 | 29 | 22 | 34 | 32 |
| 181C | 25 | 32 | 26 | 21 | 27 | 34 | 29 | 22 | 34 | 32 |
| 181D | 25 | 32 | 27 | 21 | 27 | 34 | 29 | 22 | 34 | 32 |
| 225 | 21 | 28 | 17 | 17 | 23 | 23 | 18 | 18 | 30 | 23 |
| 226 | 19 | 25 | 15 | 15 | 20 | 19 | 15 | 15 | 27 | 19 |
| 242 | 15 | 16 | 12 | 12 | 16 | 13 | 13 | 13 | 25 | 17 |
| 292 | 20 | 28 | 17 | 17 | 22 | 26 | 18 | 18 | 30 | 26 |
| 317 | 12 | 12 | 8 | 8 | 12 | 9 | 9 | 9 | 20 | 13 |
| 17 | 21 | 27 | 27 | 27 | 22 | 29 | 29 | 29 | 29 | 26 |
| Bylong Oval | 35 | 39 | 39 | 32 | 36 | 40 | 40 | 32 | 40 | 40 |
| Bylong Community Hall | 35 | 39 | 39 | 31 | 36 | 40 | 40 | 32 | 40 | 40 |
| Bylong Quarry | 27 | 24 | 34 | 34 | 29 | 32 | 36 | 36 | 36 | 34 |

Note: Cells are shaded light blue for negligible impacts, blue for moderate impacts and dark blue for significant impacts.

## Table B-2: Year 5 Noise Modelling Results– Revised Haul Road Design

| | Predicted Noise Level $L_{Aeq,15min}$ dB(A) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Period | Day | Day | Day | Day | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night |
| Condition ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Receiver ID | | | | | | | | | | |
| 4 | 14 | 21 | 21 | 14 | 15 | 22 | 22 | 14 | 22 | 19 |
| 5 | 15 | 21 | 21 | 14 | 15 | 22 | 22 | 15 | 22 | 20 |
| 41A | 16 | 23 | 23 | 17 | 17 | 24 | 24 | 18 | 24 | 21 |
| 41B | 16 | 23 | 23 | 17 | 17 | 24 | 24 | 18 | 24 | 21 |
| 42 | 17 | 24 | 24 | 20 | 18 | 25 | 25 | 21 | 25 | 22 |
| 43 | 16 | 23 | 23 | 19 | 17 | 24 | 24 | 21 | 24 | 21 |
| 44 | 17 | 24 | 24 | 22 | 18 | 25 | 25 | 24 | 25 | 23 |
| 47 | 17 | 24 | 24 | 21 | 18 | 25 | 25 | 22 | 25 | 22 |
| 49 | 18 | 25 | 25 | 23 | 19 | 26 | 26 | 25 | 26 | 23 |
| 50 | 19 | 26 | 26 | 25 | 20 | 27 | 27 | 26 | 27 | 24 |
| 56 | 28 | 34 | 34 | 25 | 29 | 36 | 36 | 26 | 36 | 35 |
| 57A | 27 | 33 | 33 | 23 | 28 | 36 | 35 | 24 | 36 | 34 |
| 57B | 26 | 33 | 33 | 22 | 28 | 35 | 35 | 24 | 35 | 34 |
| 57C | 26 | 33 | 33 | 22 | 28 | 36 | 35 | 24 | 36 | 34 |
| 58 | 29 | 36 | 36 | 26 | 31 | 38 | 38 | 27 | 38 | 37 |
| 60 | 32 | 38 | 38 | 32 | 33 | 40 | 40 | 33 | 40 | 39 |
| 61A | 31 | 37 | 37 | 31 | 32 | 39 | 39 | 33 | 39 | 38 |
| 61B | 31 | 37 | 37 | 31 | 32 | 39 | 39 | 33 | 39 | 38 |
| 65A | 31 | 38 | 38 | 32 | 33 | 39 | 39 | 34 | 39 | 39 |
| 63 | 31 | 38 | 38 | 32 | 33 | 40 | 40 | 34 | 40 | 39 |
| 68 | 31 | 37 | 37 | 33 | 32 | 39 | 39 | 35 | 39 | 38 |
| 69 | 34 | 40 | 40 | 36 | 36 | 42 | 42 | 38 | 42 | 42 |
| 141 | 29 | 25 | 33 | 36 | 31 | 27 | 35 | 38 | 38 | 34 |

| Predicted Noise Level $L_{Aeq,15min}$ dB(A) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Period | Day | Day | Day | Day | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night |
| Condition ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Receiver ID | | | | | | | | | | |
| 146 | 26 | 23 | 23 | 33 | 28 | 24 | 24 | 35 | 35 | 28 |
| 151 | 31 | 30 | 27 | 27 | 33 | 29 | 29 | 29 | 39 | 33 |
| 158 | 30 | 26 | 26 | 27 | 31 | 27 | 27 | 28 | 38 | 31 |
| 161 | 27 | 23 | 23 | 25 | 29 | 25 | 25 | 26 | 35 | 29 |
| 162 | 24 | 20 | 20 | 22 | 25 | 21 | 21 | 24 | 33 | 25 |
| 165 | 24 | 22 | 20 | 20 | 25 | 21 | 21 | 21 | 33 | 25 |
| 168 | 23 | 21 | 19 | 19 | 24 | 20 | 20 | 20 | 32 | 24 |
| 349 | 18 | 15 | 14 | 14 | 19 | 15 | 15 | 15 | 27 | 19 |
| 348 | 19 | 16 | 15 | 15 | 20 | 16 | 16 | 16 | 28 | 20 |
| 181A | 25 | 32 | 32 | 21 | 27 | 34 | 34 | 23 | 34 | 33 |
| 181B | 25 | 32 | 31 | 21 | 27 | 34 | 34 | 23 | 34 | 33 |
| 181C | 25 | 32 | 31 | 21 | 27 | 34 | 33 | 23 | 34 | 32 |
| 181D | 25 | 32 | 32 | 21 | 27 | 34 | 34 | 23 | 34 | 33 |
| 225 | 24 | 31 | 20 | 20 | 25 | 31 | 21 | 21 | 32 | 30 |
| 226 | 21 | 28 | 17 | 17 | 23 | 26 | 18 | 18 | 30 | 26 |
| 242 | 19 | 23 | 15 | 15 | 20 | 17 | 15 | 15 | 27 | 20 |
| 292 | 24 | 31 | 20 | 20 | 25 | 30 | 21 | 21 | 33 | 30 |
| 317 | 13 | 13 | 10 | 10 | 14 | 10 | 10 | 10 | 21 | 14 |
| 17 | 20 | 27 | 27 | 27 | 21 | 28 | 28 | 28 | 28 | 26 |
| Bylong Oval | 31 | 37 | 37 | 31 | 33 | 39 | 39 | 33 | 39 | 38 |
| Bylong Community Hall | 31 | 37 | 37 | 31 | 32 | 39 | 39 | 33 | 39 | 38 |
| Bylong Quarry | 26 | 24 | 33 | 33 | 28 | 32 | 35 | 35 | 35 | 34 |

Note: Cells are shaded light blue for negligible impacts, blue for moderate impacts and dark blue for significant impacts.

## Table B-3: Year 9 Noise Modelling Results– Revised Haul Road Design

| | Predicted Noise Level $L_{Aeq,15min}$ dB(A) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Period | Day | Day | Day | Day | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night |
| Condition ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Receiver ID | | | | | | | | | | |
| 4 | 13 | 20 | 20 | 13 | 14 | 21 | 21 | 13 | 21 | 18 |
| 5 | 14 | 20 | 20 | 13 | 14 | 21 | 21 | 13 | 21 | 19 |
| 41A | 15 | 22 | 22 | 15 | 16 | 23 | 23 | 16 | 23 | 20 |
| 41B | 15 | 22 | 22 | 15 | 16 | 23 | 23 | 16 | 23 | 20 |
| 42 | 16 | 23 | 23 | 16 | 17 | 24 | 24 | 17 | 24 | 21 |
| 43 | 15 | 22 | 22 | 15 | 16 | 23 | 23 | 16 | 23 | 20 |
| 44 | 16 | 23 | 23 | 21 | 17 | 25 | 25 | 22 | 25 | 22 |
| 47 | 16 | 23 | 23 | 18 | 17 | 24 | 24 | 19 | 24 | 21 |
| 49 | 17 | 24 | 24 | 21 | 18 | 25 | 25 | 23 | 25 | 23 |
| 50 | 18 | 25 | 25 | 23 | 19 | 26 | 26 | 24 | 26 | 24 |
| 56 | 26 | 32 | 32 | 23 | 27 | 34 | 34 | 23 | 34 | 33 |
| 57A | 24 | 30 | 30 | 20 | 25 | 32 | 32 | 21 | 32 | 30 |
| 57B | 24 | 30 | 30 | 20 | 25 | 32 | 32 | 21 | 32 | 30 |
| 57C | 23 | 30 | 30 | 19 | 25 | 32 | 32 | 21 | 32 | 30 |
| 58 | 26 | 33 | 32 | 22 | 28 | 35 | 34 | 24 | 35 | 33 |
| 60 | 31 | 36 | 36 | 27 | 32 | 38 | 38 | 29 | 38 | 38 |
| 61A | 30 | 36 | 36 | 27 | 31 | 38 | 38 | 28 | 38 | 37 |
| 61B | 30 | 36 | 36 | 27 | 31 | 38 | 38 | 28 | 38 | 37 |
| 65A | 30 | 36 | 36 | 27 | 32 | 38 | 38 | 29 | 38 | 37 |
| 63 | 30 | 36 | 36 | 27 | 32 | 38 | 38 | 29 | 38 | 37 |
| 68 | 30 | 36 | 36 | 27 | 31 | 38 | 38 | 29 | 38 | 37 |
| 69 | 33 | 39 | 39 | 32 | 35 | 41 | 41 | 33 | 41 | 41 |
| 141 | 31 | 27 | 37 | 38 | 33 | 29 | 39 | 40 | 40 | 39 |

| Period | Day | Day | Day | Day | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night |
|---|---|---|---|---|---|---|---|---|---|---|
| Condition ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Receiver ID | Predicted Noise Level $L_{Aeq,15min}$ dB(A) | | | | | | | | | |
| 146 | 27 | 23 | 23 | 33 | 28 | 24 | 24 | 34 | 35 | 28 |
| 151 | 30 | 32 | 26 | 26 | 32 | 28 | 28 | 28 | 39 | 32 |
| 158 | 29 | 27 | 25 | 25 | 30 | 26 | 26 | 26 | 37 | 30 |
| 161 | 24 | 21 | 21 | 21 | 26 | 22 | 22 | 22 | 33 | 26 |
| 162 | 22 | 18 | 18 | 18 | 23 | 19 | 19 | 19 | 30 | 23 |
| 165 | 22 | 20 | 18 | 18 | 24 | 19 | 19 | 19 | 31 | 24 |
| 168 | 22 | 22 | 18 | 18 | 24 | 19 | 19 | 19 | 31 | 24 |
| 349 | 18 | 16 | 14 | 14 | 19 | 15 | 15 | 15 | 26 | 19 |
| 348 | 19 | 17 | 15 | 15 | 20 | 16 | 16 | 16 | 28 | 20 |
| 181A | 22 | 29 | 27 | 18 | 23 | 31 | 29 | 19 | 31 | 29 |
| 181B | 22 | 29 | 27 | 18 | 23 | 31 | 29 | 19 | 31 | 29 |
| 181C | 22 | 29 | 27 | 18 | 23 | 31 | 29 | 19 | 31 | 29 |
| 181D | 22 | 29 | 27 | 18 | 24 | 31 | 29 | 19 | 31 | 29 |
| 225 | 23 | 30 | 19 | 19 | 25 | 32 | 21 | 21 | 32 | 32 |
| 226 | 21 | 28 | 17 | 17 | 22 | 29 | 18 | 18 | 30 | 29 |
| 242 | 18 | 24 | 14 | 14 | 19 | 18 | 15 | 15 | 27 | 19 |
| 292 | 21 | 28 | 17 | 17 | 23 | 30 | 19 | 19 | 30 | 30 |
| 317 | 13 | 13 | 9 | 9 | 13 | 9 | 9 | 9 | 21 | 13 |
| 17 | 19 | 26 | 26 | 25 | 20 | 27 | 27 | 27 | 27 | 25 |
| Bylong Oval | 30 | 36 | 36 | 27 | 32 | 38 | 38 | 28 | 38 | 37 |
| Bylong Community Hall | 30 | 36 | 36 | 27 | 31 | 38 | 38 | 28 | 38 | 37 |
| Bylong Quarry | 26 | 26 | 33 | 33 | 27 | 32 | 34 | 34 | 34 | 33 |

Note: Cells are shaded light blue for negligible impacts, blue for moderate impacts and dark blue for significant impacts.

## Table B-4: Underground Only Noise Modelling Results– Revised Haul Road Design

| | Predicted Noise Level $L_{Aeq,15min}$ dB(A) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Period | Day | Day | Day | Day | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night |
| Condition ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Receiver ID | | | | | | | | | | |
| 4 | 10 | 17 | 17 | 10 | 11 | 18 | 18 | 10 | 18 | 15 |
| 5 | 10 | 17 | 17 | 9 | 11 | 18 | 18 | 9 | 18 | 15 |
| 41A | 12 | 19 | 19 | 12 | 13 | 20 | 20 | 13 | 20 | 17 |
| 41B | 12 | 19 | 19 | 12 | 13 | 20 | 20 | 13 | 20 | 17 |
| 42 | 13 | 20 | 20 | 13 | 13 | 21 | 21 | 13 | 21 | 18 |
| 43 | 12 | 19 | 19 | 12 | 12 | 20 | 20 | 13 | 20 | 17 |
| 44 | 14 | 20 | 20 | 17 | 14 | 22 | 22 | 18 | 22 | 19 |
| 47 | 13 | 20 | 20 | 14 | 14 | 21 | 21 | 15 | 21 | 18 |
| 49 | 14 | 21 | 21 | 18 | 15 | 23 | 23 | 19 | 23 | 20 |
| 50 | 15 | 22 | 22 | 19 | 16 | 24 | 24 | 21 | 24 | 21 |
| 56 | 25 | 30 | 30 | 21 | 26 | 31 | 31 | 22 | 31 | 30 |
| 57A | 21 | 27 | 26 | 17 | 22 | 29 | 28 | 18 | 29 | 28 |
| 57B | 21 | 27 | 26 | 17 | 22 | 29 | 27 | 18 | 29 | 27 |
| 57C | 20 | 27 | 26 | 16 | 22 | 29 | 27 | 17 | 29 | 27 |
| 58 | 23 | 30 | 29 | 19 | 25 | 32 | 30 | 21 | 32 | 31 |
| 60 | 29 | 34 | 34 | 26 | 30 | 36 | 36 | 27 | 36 | 36 |
| 61A | 28 | 34 | 34 | 25 | 30 | 35 | 35 | 26 | 35 | 35 |
| 61B | 28 | 34 | 34 | 25 | 30 | 35 | 35 | 26 | 35 | 35 |
| 65A | 28 | 34 | 34 | 25 | 30 | 36 | 36 | 26 | 36 | 35 |
| 63 | 29 | 34 | 34 | 25 | 30 | 36 | 36 | 26 | 36 | 36 |
| 68 | 28 | 34 | 34 | 25 | 29 | 35 | 35 | 26 | 35 | 35 |
| 69 | 32 | 37 | 37 | 30 | 33 | 39 | 39 | 31 | 39 | 39 |
| 141 | 24 | 21 | 26 | 31 | 26 | 22 | 27 | 33 | 33 | 29 |

| Period | Day | Day | Day | Day | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night |
|---|---|---|---|---|---|---|---|---|---|---|
| | Predicted Noise Level $L_{Aeq,15min}$ dB(A) | | | | | | | | | |
| Condition ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Receiver ID | | | | | | | | | | |
| 146 | 23 | 19 | 19 | 29 | 24 | 20 | 20 | 31 | 31 | 24 |
| 151 | 19 | 19 | 15 | 15 | 21 | 16 | 16 | 16 | 28 | 21 |
| 158 | 18 | 16 | 15 | 15 | 20 | 16 | 16 | 16 | 27 | 20 |
| 161 | 17 | 13 | 13 | 13 | 18 | 14 | 14 | 14 | 26 | 18 |
| 162 | 16 | 12 | 12 | 12 | 17 | 13 | 13 | 13 | 25 | 17 |
| 165 | 15 | 12 | 11 | 11 | 16 | 12 | 12 | 12 | 24 | 16 |
| 168 | 14 | 12 | 10 | 10 | 15 | 11 | 11 | 11 | 23 | 15 |
| 349 | 11 | 8 | 7 | 7 | 11 | 7 | 7 | 7 | 19 | 11 |
| 348 | 11 | 8 | 7 | 7 | 12 | 8 | 8 | 8 | 20 | 12 |
| 181A | 18 | 25 | 20 | 14 | 19 | 27 | 21 | 15 | 27 | 25 |
| 181B | 18 | 25 | 19 | 14 | 19 | 27 | 21 | 15 | 27 | 25 |
| 181C | 18 | 25 | 19 | 14 | 19 | 27 | 21 | 15 | 27 | 25 |
| 181D | 18 | 25 | 19 | 14 | 20 | 27 | 21 | 15 | 27 | 25 |
| 225 | 16 | 23 | 12 | 12 | 17 | 19 | 13 | 13 | 25 | 19 |
| 226 | 14 | 21 | 10 | 10 | 15 | 16 | 11 | 11 | 22 | 16 |
| 242 | 11 | 14 | 7 | 7 | 12 | 8 | 7 | 7 | 19 | 12 |
| 292 | 15 | 22 | 11 | 11 | 16 | 20 | 12 | 12 | 23 | 20 |
| 317 | 8 | 8 | 5 | 5 | 9 | 5 | 5 | 5 | 16 | 9 |
| 17 | 16 | 23 | 23 | 23 | 17 | 25 | 25 | 25 | 25 | 22 |
| Bylong Oval | 29 | 34 | 34 | 25 | 30 | 36 | 36 | 26 | 36 | 35 |
| Bylong Community Hall | 28 | 34 | 34 | 25 | 29 | 35 | 35 | 26 | 35 | 35 |
| Bylong Quarry | 24 | 21 | 31 | 31 | 25 | 28 | 32 | 32 | 32 | 31 |

Note: Cells are shaded light blue for negligible impacts, blue for moderate impacts and dark blue for significant impacts.

## A.1 C-WEIGHTED NOISE MODELLING RESULTS

**Table B-5: Year 3 C-Weighted Noise Modelling Results– Revised Haul Road Design**

| | Predicted Noise Level $L_{Ceq,15min}$ dB(C) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Period | Day | Day | Day | Day | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night |
| Condition ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Receiver ID | | | | | | | | | | |
| 4 | 36 | 39 | 39 | 35 | 36 | 39 | 39 | 35 | 39 | 40 |
| 5 | 36 | 40 | 40 | 35 | 36 | 39 | 39 | 35 | 39 | 40 |
| 41A | 37 | 41 | 41 | 37 | 37 | 40 | 40 | 37 | 40 | 41 |
| 41B | 37 | 41 | 41 | 37 | 37 | 40 | 40 | 37 | 40 | 41 |
| 42 | 38 | 41 | 41 | 38 | 38 | 41 | 41 | 38 | 41 | 41 |
| 43 | 37 | 41 | 41 | 38 | 37 | 40 | 40 | 38 | 40 | 41 |
| 44 | 38 | 41 | 41 | 40 | 38 | 41 | 41 | 40 | 41 | 42 |
| 47 | 38 | 41 | 41 | 39 | 38 | 41 | 41 | 39 | 41 | 42 |
| 49 | 39 | 42 | 42 | 41 | 39 | 42 | 42 | 41 | 42 | 42 |
| 50 | 39 | 43 | 43 | 42 | 39 | 43 | 43 | 42 | 43 | 43 |
| 56 | 49 | 52 | 52 | 46 | 49 | 52 | 52 | 45 | 52 | 52 |
| 57A | 45 | 48 | 48 | 42 | 45 | 48 | 48 | 41 | 48 | 48 |
| 57B | 45 | 48 | 47 | 41 | 45 | 48 | 47 | 41 | 48 | 48 |
| 57C | 44 | 47 | 47 | 40 | 44 | 47 | 47 | 40 | 47 | 47 |
| 58 | 46 | 49 | 49 | 43 | 46 | 49 | 49 | 42 | 49 | 49 |
| 60 | 52 | 54 | 54 | 49 | 52 | 54 | 54 | 49 | 54 | 54 |
| 61A | 51 | 54 | 54 | 49 | 51 | 54 | 54 | 48 | 54 | 54 |
| 61B | 51 | 54 | 54 | 49 | 51 | 54 | 54 | 48 | 54 | 54 |
| 65A | 53 | 53 | 53 | 48 | 53 | 53 | 53 | 48 | 53 | 53 |
| 63 | 53 | 54 | 54 | 49 | 53 | 54 | 54 | 49 | 54 | 54 |
| 68 | 52 | 52 | 52 | 48 | 52 | 52 | 52 | 48 | 52 | 52 |

| Predicted Noise Level $L_{Ceq,15min}$ dB(C) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Period | Day | Day | Day | Day | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night |
| Condition ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Receiver ID | | | | | | | | | | |
| 69 | 55 | 55 | 55 | 52 | 55 | 54 | 54 | 51 | 54 | 55 |
| 141 | 44 | 42 | 45 | 49 | 44 | 43 | 47 | 50 | 50 | 48 |
| 146 | 43 | 39 | 39 | 46 | 43 | 39 | 39 | 46 | 46 | 43 |
| 151 | 41 | 40 | 39 | 39 | 41 | 40 | 40 | 40 | 47 | 43 |
| 158 | 41 | 42 | 42 | 44 | 41 | 44 | 44 | 46 | 50 | 47 |
| 161 | 40 | 40 | 40 | 43 | 40 | 42 | 42 | 45 | 49 | 46 |
| 162 | 39 | 36 | 36 | 38 | 39 | 37 | 37 | 39 | 44 | 40 |
| 165 | 39 | 36 | 36 | 36 | 39 | 37 | 37 | 37 | 44 | 40 |
| 168 | 38 | 35 | 35 | 35 | 38 | 36 | 36 | 36 | 43 | 39 |
| 349 | 36 | 32 | 32 | 32 | 36 | 32 | 32 | 32 | 40 | 36 |
| 348 | 36 | 33 | 33 | 33 | 36 | 33 | 33 | 33 | 41 | 37 |
| 181A | 42 | 46 | 43 | 39 | 42 | 46 | 43 | 39 | 46 | 46 |
| 181B | 42 | 46 | 43 | 39 | 42 | 46 | 43 | 39 | 46 | 46 |
| 181C | 42 | 46 | 42 | 39 | 42 | 46 | 43 | 39 | 46 | 46 |
| 181D | 43 | 46 | 43 | 39 | 43 | 46 | 43 | 39 | 46 | 46 |
| 225 | 40 | 43 | 36 | 36 | 40 | 40 | 36 | 36 | 44 | 40 |
| 226 | 39 | 42 | 35 | 35 | 39 | 38 | 34 | 34 | 42 | 38 |
| 242 | 36 | 36 | 32 | 32 | 36 | 33 | 33 | 33 | 41 | 37 |
| 292 | 39 | 43 | 36 | 36 | 39 | 41 | 36 | 36 | 44 | 41 |
| 317 | 33 | 33 | 29 | 29 | 33 | 29 | 29 | 29 | 37 | 33 |
| 17 | 42 | 43 | 43 | 43 | 42 | 43 | 43 | 43 | 43 | 43 |
| Bylong Oval | 53 | 54 | 54 | 49 | 53 | 54 | 54 | 49 | 54 | 54 |
| Bylong Community Hall | 53 | 54 | 54 | 49 | 53 | 54 | 54 | 49 | 54 | 55 |
| Bylong Quarry | 45 | 42 | 48 | 48 | 45 | 46 | 48 | 48 | 48 | 48 |

Note: Cells are shaded light blue for negligible impacts, blue for moderate impacts and dark blue for significant impacts.

## Table B-6: Year 5 C-Weighted Noise Modelling Results– Revised Haul Road Design

| | Predicted Noise Level $L_{Ceq,15min}$ dB(C) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Period | Day | Day | Day | Day | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night |
| Condition ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Receiver ID | | | | | | | | | | |
| 4 | 35 | 39 | 39 | 35 | 35 | 39 | 39 | 35 | 39 | 41 |
| 5 | 36 | 40 | 40 | 35 | 36 | 40 | 40 | 35 | 40 | 41 |
| 41A | 37 | 41 | 41 | 37 | 37 | 41 | 41 | 37 | 41 | 42 |
| 41B | 37 | 41 | 41 | 37 | 37 | 41 | 41 | 37 | 41 | 42 |
| 42 | 37 | 41 | 41 | 39 | 37 | 41 | 41 | 39 | 41 | 42 |
| 43 | 37 | 41 | 41 | 39 | 37 | 41 | 41 | 39 | 41 | 42 |
| 44 | 38 | 42 | 42 | 40 | 38 | 42 | 42 | 40 | 42 | 42 |
| 47 | 38 | 41 | 41 | 40 | 38 | 42 | 42 | 40 | 42 | 42 |
| 49 | 38 | 42 | 42 | 41 | 38 | 42 | 42 | 41 | 42 | 43 |
| 50 | 39 | 43 | 43 | 42 | 39 | 43 | 43 | 42 | 43 | 43 |
| 56 | 49 | 52 | 52 | 46 | 49 | 52 | 52 | 46 | 52 | 52 |
| 57A | 45 | 49 | 48 | 42 | 45 | 49 | 48 | 42 | 49 | 49 |
| 57B | 45 | 49 | 48 | 42 | 45 | 49 | 48 | 42 | 49 | 49 |
| 57C | 44 | 48 | 47 | 41 | 44 | 48 | 47 | 41 | 48 | 48 |
| 58 | 46 | 49 | 49 | 43 | 46 | 50 | 49 | 43 | 50 | 49 |
| 60 | 51 | 54 | 54 | 49 | 51 | 54 | 54 | 49 | 54 | 54 |
| 61A | 50 | 53 | 53 | 48 | 50 | 53 | 53 | 48 | 53 | 53 |
| 61B | 50 | 53 | 53 | 48 | 50 | 53 | 53 | 48 | 53 | 53 |
| 65A | 51 | 54 | 54 | 49 | 51 | 54 | 54 | 49 | 54 | 54 |
| 63 | 50 | 53 | 53 | 49 | 50 | 53 | 53 | 49 | 53 | 53 |
| 68 | 50 | 52 | 52 | 49 | 50 | 53 | 53 | 49 | 53 | 53 |
| 69 | 53 | 55 | 55 | 52 | 53 | 55 | 55 | 52 | 55 | 56 |
| 141 | 47 | 44 | 49 | 50 | 47 | 44 | 49 | 50 | 50 | 49 |

| Period | Day | Day | Day | Day | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night |
|---|---|---|---|---|---|---|---|---|---|---|
| Condition ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Receiver ID | Predicted Noise Level $L_{Ceq,15min}$ dB(C) | | | | | | | | | |
| 146 | 43 | 40 | 40 | 47 | 43 | 40 | 40 | 47 | 47 | 43 |
| 151 | 51 | 51 | 48 | 48 | 51 | 48 | 48 | 48 | 54 | 51 |
| 158 | 48 | 45 | 45 | 46 | 48 | 45 | 45 | 46 | 51 | 48 |
| 161 | 48 | 45 | 45 | 46 | 48 | 45 | 45 | 46 | 51 | 48 |
| 162 | 42 | 38 | 38 | 40 | 42 | 38 | 38 | 40 | 46 | 42 |
| 165 | 42 | 40 | 39 | 39 | 42 | 39 | 39 | 39 | 46 | 42 |
| 168 | 42 | 40 | 38 | 38 | 42 | 38 | 38 | 38 | 45 | 42 |
| 349 | 38 | 35 | 35 | 35 | 38 | 34 | 34 | 34 | 42 | 38 |
| 348 | 39 | 36 | 35 | 35 | 39 | 35 | 35 | 35 | 43 | 39 |
| 181A | 43 | 47 | 46 | 40 | 43 | 47 | 46 | 40 | 47 | 47 |
| 181B | 43 | 47 | 46 | 40 | 43 | 47 | 46 | 40 | 47 | 47 |
| 181C | 43 | 47 | 46 | 40 | 43 | 47 | 46 | 40 | 47 | 47 |
| 181D | 43 | 47 | 46 | 40 | 43 | 47 | 46 | 40 | 47 | 47 |
| 225 | 42 | 46 | 39 | 39 | 42 | 44 | 39 | 39 | 46 | 44 |
| 226 | 40 | 44 | 37 | 37 | 40 | 42 | 37 | 37 | 44 | 41 |
| 242 | 39 | 41 | 35 | 35 | 39 | 36 | 35 | 35 | 43 | 39 |
| 292 | 42 | 46 | 39 | 39 | 42 | 44 | 39 | 39 | 46 | 44 |
| 317 | 34 | 34 | 30 | 30 | 34 | 30 | 30 | 30 | 38 | 34 |
| 17 | 40 | 43 | 43 | 43 | 40 | 44 | 44 | 44 | 44 | 44 |
| Bylong Oval | 50 | 53 | 53 | 48 | 50 | 53 | 53 | 48 | 53 | 53 |
| Bylong Community Hall | 51 | 53 | 53 | 49 | 51 | 53 | 53 | 49 | 53 | 54 |
| Bylong Quarry | 44 | 42 | 48 | 48 | 44 | 46 | 48 | 48 | 48 | 48 |

Note: Cells are shaded light blue for negligible impacts, blue for moderate impacts and dark blue for significant impacts.

## Table B-7: Year 9 C-Weighted Noise Modelling Results– Revised Haul Road Design

| | Predicted Noise Level $L_{Ceq,15min}$ dB(C) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Period | Day | Day | Day | Day | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night |
| Condition ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Receiver ID | | | | | | | | | | |
| 4 | 35 | 39 | 39 | 34 | 35 | 39 | 39 | 34 | 39 | 40 |
| 5 | 35 | 39 | 39 | 34 | 35 | 39 | 39 | 34 | 39 | 40 |
| 41A | 36 | 40 | 40 | 36 | 36 | 40 | 40 | 36 | 40 | 41 |
| 41B | 36 | 40 | 40 | 36 | 36 | 40 | 40 | 36 | 40 | 41 |
| 42 | 37 | 40 | 40 | 37 | 37 | 40 | 40 | 37 | 40 | 41 |
| 43 | 36 | 40 | 40 | 36 | 36 | 40 | 40 | 36 | 40 | 41 |
| 44 | 37 | 41 | 41 | 39 | 37 | 41 | 41 | 39 | 41 | 42 |
| 47 | 37 | 41 | 41 | 38 | 37 | 41 | 41 | 38 | 41 | 41 |
| 49 | 38 | 42 | 42 | 40 | 38 | 42 | 42 | 40 | 42 | 42 |
| 50 | 38 | 42 | 42 | 40 | 38 | 42 | 42 | 40 | 42 | 43 |
| 56 | 48 | 51 | 51 | 45 | 48 | 51 | 51 | 45 | 51 | 52 |
| 57A | 44 | 47 | 46 | 40 | 44 | 47 | 46 | 40 | 47 | 47 |
| 57B | 44 | 47 | 46 | 40 | 44 | 47 | 46 | 40 | 47 | 47 |
| 57C | 42 | 46 | 45 | 38 | 42 | 46 | 45 | 38 | 46 | 46 |
| 58 | 44 | 47 | 46 | 40 | 44 | 47 | 47 | 40 | 47 | 47 |
| 60 | 51 | 53 | 53 | 48 | 51 | 54 | 54 | 48 | 54 | 54 |
| 61A | 51 | 53 | 53 | 48 | 51 | 53 | 53 | 48 | 53 | 53 |
| 61B | 51 | 53 | 53 | 48 | 51 | 53 | 53 | 48 | 53 | 53 |
| 65A | 50 | 53 | 53 | 48 | 50 | 53 | 53 | 48 | 53 | 53 |
| 63 | 50 | 53 | 53 | 47 | 50 | 53 | 53 | 47 | 53 | 53 |
| 68 | 49 | 52 | 52 | 47 | 49 | 52 | 52 | 47 | 52 | 52 |
| 69 | 51 | 54 | 54 | 50 | 51 | 54 | 54 | 50 | 54 | 54 |
| 141 | 48 | 45 | 51 | 52 | 49 | 45 | 51 | 52 | 52 | 51 |

| Predicted Noise Level $L_{Ceq,15min}$ dB(C) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Period | Day | Day | Day | Day | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night |
| Condition ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Receiver ID | | | | | | | | | | |
| 146 | 43 | 40 | 40 | 46 | 43 | 40 | 40 | 46 | 47 | 43 |
| 151 | 47 | 48 | 44 | 44 | 47 | 45 | 44 | 44 | 51 | 47 |
| 158 | 45 | 43 | 42 | 42 | 45 | 42 | 42 | 42 | 49 | 45 |
| 161 | 41 | 39 | 38 | 38 | 41 | 38 | 38 | 38 | 45 | 41 |
| 162 | 39 | 36 | 36 | 36 | 39 | 36 | 36 | 36 | 43 | 39 |
| 165 | 39 | 38 | 36 | 36 | 39 | 36 | 36 | 36 | 44 | 39 |
| 168 | 41 | 40 | 37 | 37 | 41 | 37 | 37 | 37 | 45 | 41 |
| 349 | 38 | 37 | 34 | 34 | 38 | 34 | 34 | 34 | 42 | 38 |
| 348 | 39 | 37 | 35 | 35 | 39 | 35 | 35 | 35 | 43 | 39 |
| 181A | 41 | 45 | 43 | 37 | 41 | 45 | 44 | 37 | 45 | 45 |
| 181B | 41 | 45 | 44 | 37 | 41 | 45 | 44 | 37 | 45 | 45 |
| 181C | 41 | 45 | 43 | 37 | 41 | 45 | 43 | 37 | 45 | 45 |
| 181D | 41 | 45 | 43 | 38 | 41 | 45 | 44 | 38 | 45 | 45 |
| 225 | 42 | 45 | 38 | 38 | 42 | 45 | 38 | 38 | 45 | 45 |
| 226 | 40 | 44 | 37 | 37 | 40 | 43 | 37 | 37 | 44 | 43 |
| 242 | 38 | 42 | 35 | 35 | 38 | 37 | 35 | 35 | 42 | 38 |
| 292 | 40 | 44 | 37 | 37 | 40 | 44 | 37 | 37 | 44 | 44 |
| 317 | 33 | 33 | 29 | 29 | 33 | 29 | 29 | 29 | 37 | 33 |
| 17 | 39 | 43 | 43 | 42 | 39 | 43 | 43 | 42 | 43 | 43 |
| Bylong Oval | 51 | 53 | 53 | 48 | 51 | 53 | 53 | 48 | 53 | 54 |
| Bylong Community Hall | 50 | 53 | 53 | 48 | 50 | 53 | 53 | 48 | 53 | 53 |
| Bylong Quarry | 44 | 43 | 47 | 47 | 44 | 46 | 48 | 48 | 48 | 47 |

Note: Cells are shaded light blue for negligible impacts, blue for moderate impacts and dark blue for significant impacts.

## Table B-8: Underground Only C-Weighted Noise Modelling Results– Revised Haul Road Design

| | Predicted Noise Level $L_{Ceq,15min}$ dB(C) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Period | Day | Day | Day | Day | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night |
| Condition ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Receiver ID | | | | | | | | | | |
| 4 | 31 | 35 | 35 | 31 | 31 | 35 | 35 | 31 | 35 | 36 |
| 5 | 32 | 35 | 35 | 29 | 31 | 35 | 35 | 29 | 35 | 36 |
| 41A | 33 | 36 | 36 | 33 | 33 | 37 | 37 | 33 | 37 | 37 |
| 41B | 33 | 37 | 37 | 33 | 33 | 37 | 37 | 33 | 37 | 37 |
| 42 | 33 | 37 | 37 | 33 | 33 | 37 | 37 | 33 | 37 | 37 |
| 43 | 32 | 36 | 36 | 32 | 32 | 36 | 36 | 32 | 36 | 37 |
| 44 | 34 | 38 | 38 | 35 | 34 | 38 | 38 | 35 | 38 | 38 |
| 47 | 33 | 37 | 37 | 34 | 33 | 37 | 37 | 34 | 37 | 37 |
| 49 | 35 | 38 | 38 | 36 | 35 | 38 | 38 | 36 | 38 | 39 |
| 50 | 35 | 39 | 39 | 37 | 35 | 39 | 39 | 37 | 39 | 39 |
| 56 | 48 | 50 | 50 | 44 | 48 | 50 | 50 | 44 | 50 | 51 |
| 57A | 42 | 45 | 43 | 39 | 42 | 45 | 43 | 39 | 45 | 45 |
| 57B | 42 | 45 | 43 | 39 | 42 | 45 | 43 | 39 | 45 | 45 |
| 57C | 38 | 42 | 40 | 35 | 38 | 42 | 41 | 35 | 42 | 42 |
| 58 | 40 | 44 | 42 | 37 | 40 | 44 | 43 | 37 | 44 | 44 |
| 60 | 50 | 52 | 52 | 47 | 50 | 52 | 52 | 47 | 52 | 53 |
| 61A | 50 | 52 | 52 | 47 | 50 | 52 | 52 | 47 | 52 | 52 |
| 61B | 50 | 52 | 52 | 47 | 50 | 52 | 52 | 47 | 52 | 52 |
| 65A | 49 | 51 | 51 | 46 | 49 | 51 | 51 | 46 | 51 | 52 |
| 63 | 49 | 52 | 52 | 46 | 49 | 52 | 52 | 46 | 52 | 52 |
| 68 | 47 | 50 | 50 | 44 | 47 | 50 | 50 | 44 | 50 | 50 |
| 69 | 50 | 52 | 52 | 47 | 50 | 52 | 52 | 47 | 52 | 53 |
| 141 | 41 | 38 | 40 | 45 | 41 | 38 | 40 | 45 | 45 | 42 |

| Period | Day | Day | Day | Day | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night | Eve/Night |
|---|---|---|---|---|---|---|---|---|---|---|
| | Predicted Noise Level $L_{Ceq,15min}$ dB(C) | | | | | | | | | |
| Condition ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Receiver ID | | | | | | | | | | |
| 146 | 39 | 36 | 36 | 42 | 39 | 36 | 36 | 42 | 43 | 39 |
| 151 | 37 | 35 | 33 | 33 | 37 | 33 | 33 | 33 | 41 | 37 |
| 158 | 36 | 33 | 33 | 33 | 36 | 33 | 33 | 33 | 40 | 36 |
| 161 | 35 | 32 | 32 | 32 | 35 | 32 | 32 | 32 | 39 | 35 |
| 162 | 35 | 31 | 31 | 31 | 35 | 31 | 31 | 31 | 39 | 35 |
| 165 | 34 | 31 | 31 | 31 | 34 | 31 | 31 | 31 | 38 | 34 |
| 168 | 33 | 31 | 30 | 30 | 33 | 30 | 30 | 30 | 38 | 33 |
| 349 | 31 | 28 | 27 | 27 | 31 | 27 | 27 | 27 | 35 | 31 |
| 348 | 32 | 28 | 28 | 28 | 32 | 28 | 28 | 28 | 36 | 32 |
| 181A | 37 | 40 | 37 | 33 | 37 | 41 | 37 | 33 | 41 | 40 |
| 181B | 37 | 40 | 37 | 33 | 37 | 41 | 37 | 33 | 41 | 40 |
| 181C | 37 | 40 | 36 | 33 | 37 | 41 | 36 | 33 | 41 | 40 |
| 181D | 37 | 41 | 36 | 33 | 37 | 41 | 36 | 33 | 41 | 40 |
| 225 | 35 | 39 | 31 | 31 | 35 | 36 | 31 | 31 | 39 | 36 |
| 226 | 34 | 38 | 30 | 30 | 34 | 34 | 30 | 30 | 38 | 34 |
| 242 | 31 | 32 | 28 | 28 | 31 | 28 | 27 | 27 | 36 | 31 |
| 292 | 34 | 38 | 31 | 31 | 34 | 35 | 31 | 31 | 38 | 35 |
| 317 | 30 | 30 | 26 | 26 | 29 | 26 | 26 | 26 | 34 | 29 |
| 17 | 36 | 40 | 40 | 40 | 36 | 40 | 40 | 40 | 40 | 40 |
| Bylong Oval | 50 | 52 | 52 | 47 | 50 | 52 | 52 | 47 | 52 | 53 |
| Bylong Community Hall | 49 | 51 | 51 | 46 | 49 | 51 | 51 | 46 | 51 | 51 |
| Bylong Quarry | 42 | 39 | 45 | 45 | 42 | 42 | 45 | 45 | 45 | 45 |

Note: Cells are shaded light blue for negligible impacts, blue for moderate impacts and dark blue for significant impacts.

## Z-WEIGHTED NOISE MODELLING RESULTS

**Table B-9: Year 3 Z-Weighted Noise Modelling Frequency Analysis – ING Low Frequency-63Hz**

| | Predicted Noise Level – 63 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **1/3 Octave Criteria[1]** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** |
| **Equivalent 1/1 Octave Criteria** | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 36 | | | 38 | | | 38 | | | 35 | | | 36 | | | 38 | | | 38 | | | 35 | | | 38 | | | 40 | | |
| 5 | 36 | | | 39 | | | 39 | | | 35 | | | 36 | | | 38 | | | 38 | | | 35 | | | 38 | | | 41 | | |
| 41A | 37 | | | 40 | | | 40 | | | 37 | | | 37 | | | 39 | | | 39 | | | 37 | | | 39 | | | 41 | | |
| 41B | 37 | | | 40 | | | 40 | | | 37 | | | 37 | | | 39 | | | 39 | | | 37 | | | 39 | | | 41 | | |
| 42 | 38 | | | 40 | | | 40 | | | 37 | | | 38 | | | 40 | | | 40 | | | 37 | | | 40 | | | 41 | | |
| 43 | 37 | | | 40 | | | 40 | | | 38 | | | 37 | | | 39 | | | 39 | | | 37 | | | 39 | | | 41 | | |
| 44 | 38 | | | 40 | | | 40 | | | 39 | | | 38 | | | 40 | | | 40 | | | 39 | | | 40 | | | 42 | | |
| 47 | 38 | | | 40 | | | 40 | | | 39 | | | 38 | | | 40 | | | 40 | | | 38 | | | 40 | | | 42 | | |
| 49 | 39 | | | 41 | | | 41 | | | 40 | | | 38 | | | 41 | | | 41 | | | 39 | | | 41 | | | 42 | | |
| 50 | 39 | | | 42 | | | 42 | | | 41 | | | 39 | | | 41 | | | 41 | | | 40 | | | 41 | | | 43 | | |
| 56 | 49 | | | 52 | | | 52 | | | 46 | | | 49 | | | 51 | | | 51 | | | 46 | | | 51 | | | 52 | | |
| 57A | 45 | | | 47 | | | 46 | | | 42 | | | 45 | | | 47 | | | 46 | | | 41 | | | 47 | | | 48 | | |
| 57B | 45 | | | 47 | | | 46 | | | 41 | | | 45 | | | 47 | | | 46 | | | 41 | | | 47 | | | 48 | | |
| 57C | 43 | | | 45 | | | 45 | | | 40 | | | 43 | | | 45 | | | 45 | | | 39 | | | 45 | | | 46 | | |
| 58 | 46 | | | 47 | | | 47 | | | 42 | | | 46 | | | 47 | | | 46 | | | 41 | | | 47 | | | 47 | | |
| 60 | 52 | | | 54 | | | 54 | | | 49 | | | 52 | | | 53 | | | 53 | | | 49 | | | 53 | | | 54 | | |
| 61A | 52 | | | 53 | | | 53 | | | 49 | | | 52 | | | 53 | | | 53 | | | 48 | | | 53 | | | 54 | | |
| 61B | 52 | | | 53 | | | 53 | | | 49 | | | 52 | | | 53 | | | 53 | | | 48 | | | 53 | | | 54 | | |
| 65A | 53 | | | 53 | | | 53 | | | 48 | | | 53 | | | 53 | | | 53 | | | 48 | | | 53 | | | 53 | | |
| 63 | 54 | | | 54 | | | 54 | | | 49 | | | 54 | | | 54 | | | 54 | | | 49 | | | 54 | | | 54 | | |

| Predicted Noise Level – 63 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **1/3 Octave Criteria[1]** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** |
| **Equivalent 1/1 Octave Criteria** | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 68 | | 52 | | | 51 | | | 51 | | | 47 | | | 52 | | | 51 | | | 51 | | | 47 | | | 51 | | | 51 | |
| 69 | | 55 | | | 53 | | | 53 | | | 50 | | | 55 | | | 53 | | | 53 | | | 50 | | | 53 | | | 54 | |
| 141 | | 44 | | | 42 | | | 46 | | | 48 | | | 44 | | | 43 | | | 47 | | | 49 | | | 49 | | | 48 | |
| 146 | | 43 | | | 39 | | | 39 | | | 44 | | | 42 | | | 39 | | | 39 | | | 44 | | | 45 | | | 42 | |
| 151 | | 41 | | | 40 | | | 38 | | | 38 | | | 41 | | | 39 | | | 39 | | | 39 | | | 45 | | | 42 | |
| 158 | | 41 | | | 42 | | | 42 | | | 45 | | | 41 | | | 44 | | | 44 | | | 47 | | | 50 | | | 48 | |
| 161 | | 40 | | | 41 | | | 41 | | | 43 | | | 40 | | | 43 | | | 43 | | | 46 | | | 49 | | | 46 | |
| 162 | | 39 | | | 36 | | | 36 | | | 38 | | | 39 | | | 37 | | | 37 | | | 38 | | | 43 | | | 40 | |
| 165 | | 39 | | | 36 | | | 36 | | | 36 | | | 39 | | | 36 | | | 36 | | | 36 | | | 43 | | | 40 | |
| 168 | | 38 | | | 35 | | | 35 | | | 35 | | | 38 | | | 35 | | | 35 | | | 35 | | | 42 | | | 39 | |
| 349 | | 36 | | | 32 | | | 32 | | | 32 | | | 36 | | | 32 | | | 32 | | | 32 | | | 39 | | | 36 | |
| 348 | | 36 | | | 33 | | | 33 | | | 33 | | | 36 | | | 33 | | | 33 | | | 33 | | | 40 | | | 37 | |
| 181A | | 42 | | | 44 | | | 42 | | | 38 | | | 42 | | | 44 | | | 42 | | | 38 | | | 44 | | | 45 | |
| 181B | | 42 | | | 44 | | | 42 | | | 38 | | | 42 | | | 44 | | | 42 | | | 38 | | | 44 | | | 45 | |
| 181C | | 42 | | | 44 | | | 42 | | | 38 | | | 42 | | | 44 | | | 42 | | | 38 | | | 44 | | | 45 | |
| 181D | | 42 | | | 44 | | | 42 | | | 39 | | | 42 | | | 44 | | | 42 | | | 38 | | | 44 | | | 45 | |
| 225 | | 40 | | | 42 | | | 36 | | | 36 | | | 40 | | | 40 | | | 36 | | | 36 | | | 42 | | | 40 | |
| 226 | | 39 | | | 41 | | | 34 | | | 34 | | | 39 | | | 37 | | | 34 | | | 34 | | | 40 | | | 38 | |
| 242 | | 36 | | | 36 | | | 32 | | | 32 | | | 36 | | | 33 | | | 33 | | | 33 | | | 40 | | | 37 | |
| 292 | | 39 | | | 42 | | | 36 | | | 36 | | | 39 | | | 40 | | | 36 | | | 36 | | | 42 | | | 40 | |
| 317 | | 33 | | | 33 | | | 29 | | | 29 | | | 33 | | | 29 | | | 29 | | | 29 | | | 36 | | | 33 | |
| 17 | | 42 | | | 42 | | | 42 | | | 42 | | | 42 | | | 42 | | | 42 | | | 42 | | | 42 | | | 43 | |
| Bylong Oval | | 54 | | | 53 | | | 53 | | | 49 | | | 54 | | | 53 | | | 53 | | | 49 | | | 53 | | | 54 | |

| Predicted Noise Level – 63 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **1/3 Octave Criteria[1]** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** |
| **Equivalent 1/1 Octave Criteria** | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bylong Community Hall | 54 | | | 54 | | | 54 | | | 50 | | | 54 | | | 54 | | | 54 | | | 49 | | | 54 | | | 55 | | |
| Bylong Quarry | 44 | | | 42 | | | 46 | | | 46 | | | 44 | | | 45 | | | 46 | | | 46 | | | 46 | | | 47 | | |

Note 1: Third octave thresholds from Draft ING (**EPA, 2015**).

Note 2: Exceedances of third octave criteria presented in blue.

## Table B-10: Year 3 Z-Weighted Noise Modelling Frequency Analysis – ING Low Frequency -125Hz

| Predicted Noise Level – 125 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** |
| **Equivalent 1/1 Octave Criteria** | **51** | | | **51** | | | **51** | | | **54** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 27 | | | 34 | | | 34 | | | 27 | | | 27 | | | 34 | | | 34 | | | 27 | | | 34 | | | 30 | | |
| 5 | 28 | | | 34 | | | 34 | | | 27 | | | 28 | | | 34 | | | 34 | | | 27 | | | 34 | | | 31 | | |
| 41A | 29 | | | 35 | | | 35 | | | 29 | | | 29 | | | 35 | | | 35 | | | 29 | | | 35 | | | 32 | | |
| 41B | 29 | | | 35 | | | 35 | | | 29 | | | 29 | | | 35 | | | 35 | | | 29 | | | 35 | | | 32 | | |
| 42 | 30 | | | 36 | | | 36 | | | 30 | | | 30 | | | 36 | | | 36 | | | 30 | | | 36 | | | 33 | | |
| 43 | 29 | | | 35 | | | 35 | | | 32 | | | 29 | | | 35 | | | 35 | | | 31 | | | 35 | | | 32 | | |
| 44 | 30 | | | 36 | | | 36 | | | 35 | | | 30 | | | 36 | | | 36 | | | 35 | | | 36 | | | 33 | | |
| 47 | 30 | | | 36 | | | 36 | | | 33 | | | 30 | | | 36 | | | 36 | | | 33 | | | 36 | | | 33 | | |
| 49 | 31 | | | 37 | | | 37 | | | 36 | | | 31 | | | 37 | | | 37 | | | 35 | | | 37 | | | 34 | | |
| 50 | 31 | | | 38 | | | 38 | | | 37 | | | 31 | | | 37 | | | 37 | | | 36 | | | 37 | | | 35 | | |

| Predicted Noise Level – 125 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** |
| **Equivalent 1/1 Octave Criteria** | **51** | | | **51** | | | **51** | | | **54** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 56 | | 38 | | | 43 | | | 43 | | | 35 | | | 38 | | | 43 | | | 43 | | | 35 | | | 43 | | | 41 | |
| 57A | | 37 | | | 42 | | | 42 | | | 34 | | | 37 | | | 42 | | | 41 | | | 34 | | | 42 | | | 40 | |
| 57B | | 37 | | | 42 | | | 41 | | | 34 | | | 37 | | | 42 | | | 41 | | | 33 | | | 42 | | | 40 | |
| 57C | | 37 | | | 42 | | | 42 | | | 34 | | | 37 | | | 42 | | | 41 | | | 34 | | | 42 | | | 40 | |
| 58 | | 39 | | | 44 | | | 44 | | | 36 | | | 39 | | | 44 | | | 43 | | | 36 | | | 44 | | | 42 | |
| 60 | | 42 | | | 46 | | | 46 | | | 40 | | | 42 | | | 45 | | | 45 | | | 39 | | | 45 | | | 45 | |
| 61A | | 41 | | | 45 | | | 45 | | | 39 | | | 41 | | | 45 | | | 45 | | | 39 | | | 45 | | | 44 | |
| 61B | | 41 | | | 45 | | | 45 | | | 39 | | | 41 | | | 45 | | | 45 | | | 39 | | | 45 | | | 44 | |
| 65A | | 41 | | | 45 | | | 45 | | | 39 | | | 41 | | | 45 | | | 45 | | | 39 | | | 45 | | | 44 | |
| 63 | | 41 | | | 46 | | | 46 | | | 39 | | | 41 | | | 45 | | | 45 | | | 39 | | | 45 | | | 44 | |
| 68 | | 41 | | | 45 | | | 45 | | | 40 | | | 41 | | | 45 | | | 45 | | | 40 | | | 45 | | | 44 | |
| 69 | | 43 | | | 47 | | | 47 | | | 44 | | | 43 | | | 47 | | | 47 | | | 44 | | | 47 | | | 46 | |
| 141 | | 37 | | | 34 | | | 36 | | | 43 | | | 37 | | | 34 | | | 37 | | | 43 | | | 43 | | | 38 | |
| 146 | | 35 | | | 33 | | | 33 | | | 40 | | | 35 | | | 33 | | | 33 | | | 41 | | | 41 | | | 35 | |
| 151 | | 34 | | | 33 | | | 32 | | | 32 | | | 34 | | | 33 | | | 33 | | | 33 | | | 41 | | | 35 | |
| 158 | | 34 | | | 32 | | | 32 | | | 32 | | | 34 | | | 32 | | | 32 | | | 33 | | | 41 | | | 35 | |
| 161 | | 33 | | | 30 | | | 30 | | | 31 | | | 32 | | | 31 | | | 31 | | | 31 | | | 40 | | | 33 | |
| 162 | | 31 | | | 29 | | | 29 | | | 30 | | | 31 | | | 30 | | | 30 | | | 31 | | | 39 | | | 32 | |
| 165 | | 31 | | | 29 | | | 29 | | | 29 | | | 31 | | | 29 | | | 29 | | | 29 | | | 38 | | | 32 | |
| 168 | | 31 | | | 28 | | | 28 | | | 28 | | | 31 | | | 29 | | | 29 | | | 29 | | | 38 | | | 31 | |
| 349 | | 28 | | | 25 | | | 25 | | | 25 | | | 27 | | | 25 | | | 25 | | | 25 | | | 35 | | | 28 | |
| 348 | | 28 | | | 26 | | | 26 | | | 26 | | | 28 | | | 26 | | | 26 | | | 26 | | | 36 | | | 29 | |
| 181A | | 35 | | | 41 | | | 36 | | | 32 | | | 35 | | | 41 | | | 37 | | | 32 | | | 41 | | | 39 | |

| Predicted Noise Level – 125 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** |
| **Equivalent 1/1 Octave Criteria** | **51** | | | **51** | | | **51** | | | **54** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 181B | 35 | | | 41 | | | 36 | | | 32 | | | 35 | | | 41 | | | 37 | | | 32 | | | 41 | | | 39 | | |
| 181C | 35 | | | 41 | | | 36 | | | 32 | | | 35 | | | 41 | | | 36 | | | 32 | | | 41 | | | 39 | | |
| 181D | 36 | | | 41 | | | 36 | | | 33 | | | 35 | | | 41 | | | 37 | | | 32 | | | 41 | | | 39 | | |
| 225 | 32 | | | 38 | | | 30 | | | 30 | | | 32 | | | 33 | | | 30 | | | 30 | | | 38 | | | 33 | | |
| 226 | 31 | | | 37 | | | 28 | | | 28 | | | 31 | | | 30 | | | 27 | | | 27 | | | 37 | | | 30 | | |
| 242 | 28 | | | 28 | | | 25 | | | 25 | | | 28 | | | 25 | | | 25 | | | 25 | | | 35 | | | 28 | | |
| 292 | 32 | | | 38 | | | 29 | | | 29 | | | 31 | | | 34 | | | 29 | | | 29 | | | 38 | | | 34 | | |
| 317 | 25 | | | 25 | | | 22 | | | 22 | | | 25 | | | 22 | | | 22 | | | 22 | | | 32 | | | 25 | | |
| 17 | 32 | | | 38 | | | 38 | | | 38 | | | 32 | | | 38 | | | 38 | | | 38 | | | 38 | | | 36 | | |
| Bylong Oval | 41 | | | 45 | | | 45 | | | 39 | | | 41 | | | 45 | | | 45 | | | 39 | | | 45 | | | 44 | | |
| Bylong Community Hall | 41 | | | 45 | | | 45 | | | 39 | | | 41 | | | 45 | | | 45 | | | 39 | | | 45 | | | 44 | | |
| Bylong Quarry | 37 | | | 35 | | | 43 | | | 43 | | | 37 | | | 39 | | | 42 | | | 42 | | | 42 | | | 41 | | |

Note 1: Third octave thresholds from Draft ING (**EPA, 2015**).

## Table B-11: Year 5 Z-Weighted Noise Modelling Frequency Analysis – ING Low Frequency – 63Hz

| | Predicted Noise Level – 63 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** |
| **Equivalent 1/1 Octave Criteria** | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | 36 | | | 39 | | | 39 | | | 35 | | | 35 | | | 38 | | | 38 | | | 35 | | | 38 | | | 41 | |
| 5 | | 36 | | | 39 | | | 39 | | | 35 | | | 36 | | | 39 | | | 39 | | | 35 | | | 39 | | | 41 | |
| 41A | | 37 | | | 40 | | | 40 | | | 37 | | | 37 | | | 40 | | | 40 | | | 37 | | | 40 | | | 42 | |
| 41B | | 37 | | | 40 | | | 40 | | | 37 | | | 37 | | | 40 | | | 40 | | | 37 | | | 40 | | | 42 | |
| 42 | | 37 | | | 40 | | | 40 | | | 39 | | | 37 | | | 40 | | | 40 | | | 39 | | | 40 | | | 42 | |
| 43 | | 37 | | | 40 | | | 40 | | | 38 | | | 37 | | | 40 | | | 40 | | | 38 | | | 40 | | | 42 | |
| 44 | | 38 | | | 41 | | | 41 | | | 40 | | | 38 | | | 41 | | | 41 | | | 40 | | | 41 | | | 42 | |
| 47 | | 38 | | | 40 | | | 40 | | | 39 | | | 38 | | | 40 | | | 40 | | | 39 | | | 40 | | | 42 | |
| 49 | | 38 | | | 41 | | | 41 | | | 40 | | | 38 | | | 41 | | | 41 | | | 40 | | | 41 | | | 43 | |
| 50 | | 39 | | | 42 | | | 42 | | | 41 | | | 39 | | | 42 | | | 42 | | | 41 | | | 42 | | | 43 | |
| 56 | | 49 | | | 52 | | | 52 | | | 46 | | | 49 | | | 52 | | | 52 | | | 46 | | | 52 | | | 52 | |
| 57A | | 45 | | | 48 | | | 47 | | | 42 | | | 45 | | | 48 | | | 47 | | | 42 | | | 48 | | | 48 | |
| 57B | | 45 | | | 48 | | | 47 | | | 42 | | | 45 | | | 48 | | | 47 | | | 42 | | | 48 | | | 48 | |
| 57C | | 44 | | | 46 | | | 46 | | | 40 | | | 44 | | | 46 | | | 46 | | | 40 | | | 46 | | | 47 | |
| 58 | | 45 | | | 48 | | | 47 | | | 42 | | | 45 | | | 48 | | | 47 | | | 42 | | | 48 | | | 48 | |
| 60 | | 51 | | | 54 | | | 54 | | | 49 | | | 51 | | | 53 | | | 53 | | | 49 | | | 53 | | | 54 | |
| 61A | | 50 | | | 52 | | | 52 | | | 48 | | | 50 | | | 52 | | | 52 | | | 48 | | | 52 | | | 53 | |
| 61B | | 50 | | | 52 | | | 52 | | | 48 | | | 50 | | | 52 | | | 52 | | | 48 | | | 52 | | | 53 | |
| 65A | | 51 | | | 53 | | | 53 | | | 49 | | | 51 | | | 53 | | | 53 | | | 49 | | | 53 | | | 54 | |
| 63 | | 51 | | | 53 | | | 53 | | | 49 | | | 51 | | | 53 | | | 53 | | | 49 | | | 53 | | | 53 | |
| 68 | | 50 | | | 52 | | | 52 | | | 49 | | | 50 | | | 52 | | | 52 | | | 49 | | | 52 | | | 53 | |

| Predicted Noise Level – 63 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** |
| **Equivalent 1/1 Octave Criteria** | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 69 | | 53 | | | 55 | | | 55 | | | 52 | | | 53 | | | 55 | | | 55 | | | 52 | | | 55 | | | 55 | |
| 141 | | 47 | | | 44 | | | 48 | | | 49 | | | 47 | | | 44 | | | 48 | | | 49 | | | 49 | | | 48 | |
| 146 | | 43 | | | 39 | | | 39 | | | 45 | | | 43 | | | 39 | | | 39 | | | 45 | | | 45 | | | 43 | |
| 151 | | 51 | | | 51 | | | 48 | | | 48 | | | 51 | | | 48 | | | 48 | | | 48 | | | 53 | | | 51 | |
| 158 | | 48 | | | 45 | | | 45 | | | 47 | | | 48 | | | 45 | | | 45 | | | 47 | | | 50 | | | 48 | |
| 161 | | 49 | | | 45 | | | 45 | | | 47 | | | 49 | | | 45 | | | 45 | | | 46 | | | 51 | | | 49 | |
| 162 | | 41 | | | 38 | | | 38 | | | 40 | | | 41 | | | 38 | | | 38 | | | 40 | | | 44 | | | 41 | |
| 165 | | 42 | | | 40 | | | 38 | | | 38 | | | 42 | | | 38 | | | 38 | | | 38 | | | 44 | | | 42 | |
| 168 | | 41 | | | 40 | | | 38 | | | 38 | | | 41 | | | 38 | | | 38 | | | 38 | | | 44 | | | 41 | |
| 349 | | 38 | | | 35 | | | 34 | | | 34 | | | 38 | | | 34 | | | 34 | | | 34 | | | 41 | | | 38 | |
| 348 | | 39 | | | 36 | | | 35 | | | 35 | | | 39 | | | 35 | | | 35 | | | 35 | | | 42 | | | 39 | |
| 181A | | 43 | | | 45 | | | 45 | | | 39 | | | 43 | | | 45 | | | 45 | | | 39 | | | 45 | | | 46 | |
| 181B | | 43 | | | 45 | | | 45 | | | 39 | | | 43 | | | 45 | | | 45 | | | 39 | | | 45 | | | 46 | |
| 181C | | 43 | | | 45 | | | 45 | | | 39 | | | 43 | | | 45 | | | 45 | | | 39 | | | 45 | | | 46 | |
| 181D | | 43 | | | 45 | | | 45 | | | 40 | | | 43 | | | 45 | | | 45 | | | 40 | | | 45 | | | 46 | |
| 225 | | 42 | | | 44 | | | 38 | | | 38 | | | 42 | | | 43 | | | 38 | | | 38 | | | 44 | | | 43 | |
| 226 | | 40 | | | 42 | | | 36 | | | 36 | | | 40 | | | 41 | | | 36 | | | 36 | | | 42 | | | 41 | |
| 242 | | 39 | | | 40 | | | 35 | | | 35 | | | 39 | | | 36 | | | 35 | | | 35 | | | 41 | | | 39 | |
| 292 | | 42 | | | 44 | | | 38 | | | 38 | | | 42 | | | 43 | | | 38 | | | 38 | | | 44 | | | 43 | |
| 317 | | 34 | | | 34 | | | 30 | | | 30 | | | 34 | | | 30 | | | 30 | | | 30 | | | 37 | | | 34 | |
| 17 | | 40 | | | 42 | | | 42 | | | 42 | | | 40 | | | 42 | | | 42 | | | 42 | | | 42 | | | 44 | |
| Bylong Oval | | 50 | | | 52 | | | 52 | | | 48 | | | 50 | | | 52 | | | 52 | | | 48 | | | 52 | | | 53 | |
| Bylong Community Hall | | 51 | | | 53 | | | 53 | | | 49 | | | 51 | | | 53 | | | 53 | | | 49 | | | 53 | | | 54 | |

| Predicted Noise Level – 63 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** |
| **Equivalent 1/1 Octave Criteria** | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bylong Quarry | 44 | | | 42 | | | 46 | | | 46 | | | 44 | | | 45 | | | 46 | | | 46 | | | 46 | | | 47 | | |

Note 1: Third octave thresholds from Draft ING (**EPA, 2015**).

Note 2: Exceedances of third octave criteria presented in blue.

### Table B-12: Year 5 Z-Weighted Noise Modelling Frequency Analysis – ING Low Frequency – 125Hz

| Predicted Noise Level – 125 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** |
| **Equivalent 1/1 Octave Criteria** | **51** | | | **51** | | | **51** | | | **54** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 27 | | | 34 | | | 34 | | | 27 | | | 27 | | | 34 | | | 34 | | | 27 | | | 34 | | | 31 | | |
| 5 | 27 | | | 34 | | | 34 | | | 27 | | | 27 | | | 34 | | | 34 | | | 27 | | | 34 | | | 31 | | |
| 41A | 29 | | | 35 | | | 35 | | | 29 | | | 28 | | | 35 | | | 35 | | | 29 | | | 35 | | | 32 | | |
| 41B | 29 | | | 35 | | | 35 | | | 29 | | | 29 | | | 35 | | | 35 | | | 29 | | | 35 | | | 32 | | |
| 42 | 29 | | | 36 | | | 36 | | | 32 | | | 29 | | | 36 | | | 36 | | | 32 | | | 36 | | | 33 | | |
| 43 | 29 | | | 35 | | | 35 | | | 32 | | | 29 | | | 35 | | | 35 | | | 32 | | | 35 | | | 32 | | |
| 44 | 30 | | | 36 | | | 36 | | | 35 | | | 30 | | | 36 | | | 36 | | | 35 | | | 36 | | | 33 | | |
| 47 | 30 | | | 36 | | | 36 | | | 33 | | | 29 | | | 36 | | | 36 | | | 33 | | | 36 | | | 33 | | |
| 49 | 30 | | | 37 | | | 37 | | | 36 | | | 30 | | | 37 | | | 37 | | | 36 | | | 37 | | | 34 | | |
| 50 | 31 | | | 38 | | | 38 | | | 36 | | | 31 | | | 37 | | | 37 | | | 36 | | | 37 | | | 35 | | |
| 56 | 37 | | | 43 | | | 43 | | | 35 | | | 37 | | | 43 | | | 43 | | | 35 | | | 43 | | | 41 | | |
| 57A | 36 | | | 42 | | | 42 | | | 34 | | | 36 | | | 42 | | | 42 | | | 34 | | | 42 | | | 40 | | |
| 57B | 36 | | | 42 | | | 42 | | | 34 | | | 36 | | | 42 | | | 42 | | | 34 | | | 42 | | | 40 | | |

| Predicted Noise Level – 125 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** |
| **Equivalent 1/1 Octave Criteria** | **51** | | | **51** | | | **51** | | | **54** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 57C | 36 | | | 42 | | | 42 | | | 34 | | | 36 | | | 42 | | | 42 | | | 34 | | | 42 | | | 40 | | |
| 58 | 39 | | | 44 | | | 44 | | | 36 | | | 38 | | | 44 | | | 44 | | | 36 | | | 44 | | | 43 | | |
| 60 | 40 | | | 45 | | | 45 | | | 40 | | | 40 | | | 45 | | | 45 | | | 40 | | | 45 | | | 44 | | |
| 61A | 39 | | | 45 | | | 45 | | | 39 | | | 39 | | | 45 | | | 45 | | | 39 | | | 45 | | | 43 | | |
| 61B | 39 | | | 45 | | | 45 | | | 39 | | | 39 | | | 45 | | | 45 | | | 39 | | | 45 | | | 43 | | |
| 65A | 39 | | | 45 | | | 45 | | | 40 | | | 39 | | | 45 | | | 45 | | | 40 | | | 45 | | | 44 | | |
| 63 | 40 | | | 45 | | | 45 | | | 40 | | | 40 | | | 45 | | | 45 | | | 40 | | | 45 | | | 44 | | |
| 68 | 39 | | | 45 | | | 45 | | | 41 | | | 39 | | | 44 | | | 44 | | | 41 | | | 44 | | | 43 | | |
| 69 | 41 | | | 46 | | | 46 | | | 43 | | | 41 | | | 46 | | | 46 | | | 43 | | | 46 | | | 46 | | |
| 141 | 38 | | | 36 | | | 41 | | | 44 | | | 38 | | | 36 | | | 41 | | | 44 | | | 44 | | | 41 | | |
| 146 | 37 | | | 34 | | | 34 | | | 42 | | | 37 | | | 34 | | | 34 | | | 42 | | | 42 | | | 37 | | |
| 151 | 38 | | | 38 | | | 36 | | | 36 | | | 38 | | | 36 | | | 36 | | | 36 | | | 44 | | | 38 | | |
| 158 | 38 | | | 36 | | | 36 | | | 36 | | | 38 | | | 36 | | | 36 | | | 36 | | | 44 | | | 38 | | |
| 161 | 36 | | | 34 | | | 34 | | | 34 | | | 36 | | | 34 | | | 34 | | | 34 | | | 42 | | | 36 | | |
| 162 | 35 | | | 32 | | | 32 | | | 33 | | | 35 | | | 32 | | | 32 | | | 33 | | | 41 | | | 35 | | |
| 165 | 35 | | | 33 | | | 32 | | | 32 | | | 35 | | | 32 | | | 32 | | | 32 | | | 41 | | | 35 | | |
| 168 | 34 | | | 33 | | | 31 | | | 31 | | | 34 | | | 31 | | | 31 | | | 31 | | | 40 | | | 34 | | |
| 349 | 30 | | | 28 | | | 27 | | | 27 | | | 30 | | | 27 | | | 27 | | | 27 | | | 37 | | | 30 | | |
| 348 | 31 | | | 29 | | | 28 | | | 28 | | | 31 | | | 28 | | | 28 | | | 28 | | | 38 | | | 31 | | |
| 181A | 36 | | | 42 | | | 41 | | | 33 | | | 36 | | | 42 | | | 41 | | | 33 | | | 42 | | | 40 | | |
| 181B | 36 | | | 42 | | | 41 | | | 33 | | | 36 | | | 42 | | | 41 | | | 33 | | | 42 | | | 40 | | |
| 181C | 36 | | | 42 | | | 40 | | | 33 | | | 36 | | | 42 | | | 40 | | | 33 | | | 42 | | | 40 | | |
| 181D | 36 | | | 42 | | | 41 | | | 33 | | | 36 | | | 42 | | | 41 | | | 33 | | | 42 | | | 40 | | |

| Predicted Noise Level – 125 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** |
| **Equivalent 1/1 Octave Criteria** | **51** | | | **51** | | | **51** | | | **54** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 225 | 35 | | | 41 | | | 32 | | | 32 | | | 35 | | | 39 | | | 32 | | | 32 | | | 41 | | | 38 | | |
| 226 | 33 | | | 39 | | | 30 | | | 30 | | | 33 | | | 36 | | | 30 | | | 30 | | | 39 | | | 35 | | |
| 242 | 31 | | | 35 | | | 28 | | | 28 | | | 31 | | | 29 | | | 28 | | | 28 | | | 37 | | | 31 | | |
| 292 | 34 | | | 41 | | | 32 | | | 32 | | | 34 | | | 38 | | | 32 | | | 32 | | | 40 | | | 38 | | |
| 317 | 27 | | | 27 | | | 24 | | | 24 | | | 27 | | | 24 | | | 24 | | | 24 | | | 33 | | | 27 | | |
| 17 | 32 | | | 38 | | | 38 | | | 38 | | | 32 | | | 38 | | | 38 | | | 38 | | | 38 | | | 36 | | |
| Bylong Oval | 39 | | | 45 | | | 45 | | | 40 | | | 39 | | | 45 | | | 45 | | | 40 | | | 45 | | | 43 | | |
| Bylong Community Hall | 39 | | | 45 | | | 45 | | | 40 | | | 39 | | | 45 | | | 45 | | | 40 | | | 45 | | | 43 | | |
| Bylong Quarry | 37 | | | 35 | | | 42 | | | 42 | | | 37 | | | 40 | | | 42 | | | 42 | | | 42 | | | 41 | | |

Note 1: Third octave thresholds from Draft ING (**EPA, 2015**).

**Table B-13: Year 9 Z-Weighted Noise Modelling Frequency Analysis – ING Low Frequency – 63Hz**

| Predicted Noise Level – 63 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** |
| **Equivalent 1/1 Octave Criteria** | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 35 | | | 38 | | | 38 | | | 35 | | | 35 | | | 38 | | | 38 | | | 35 | | | 38 | | | 40 | | |
| 5 | 35 | | | 38 | | | 38 | | | 34 | | | 35 | | | 38 | | | 38 | | | 34 | | | 38 | | | 41 | | |
| 41A | 36 | | | 39 | | | 39 | | | 36 | | | 36 | | | 39 | | | 39 | | | 36 | | | 39 | | | 41 | | |
| 41B | 36 | | | 39 | | | 39 | | | 36 | | | 36 | | | 39 | | | 39 | | | 36 | | | 39 | | | 41 | | |
| 42 | 37 | | | 39 | | | 39 | | | 37 | | | 37 | | | 39 | | | 39 | | | 37 | | | 39 | | | 41 | | |
| 43 | 36 | | | 39 | | | 39 | | | 36 | | | 36 | | | 39 | | | 39 | | | 36 | | | 39 | | | 41 | | |

| Predicted Noise Level – 63 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** |
| **Equivalent 1/1 Octave Criteria** | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 44 | | 37 | | | 40 | | | 40 | | | 38 | | | 37 | | | 40 | | | 40 | | | 38 | | | 40 | | | 42 | |
| 47 | | 37 | | | 40 | | | 40 | | | 38 | | | 37 | | | 40 | | | 40 | | | 37 | | | 40 | | | 42 | |
| 49 | | 38 | | | 41 | | | 41 | | | 39 | | | 38 | | | 41 | | | 41 | | | 39 | | | 41 | | | 42 | |
| 50 | | 38 | | | 41 | | | 41 | | | 40 | | | 38 | | | 41 | | | 41 | | | 40 | | | 41 | | | 43 | |
| 56 | | 49 | | | 51 | | | 51 | | | 46 | | | 49 | | | 51 | | | 51 | | | 46 | | | 51 | | | 52 | |
| 57A | | 44 | | | 47 | | | 45 | | | 41 | | | 44 | | | 47 | | | 45 | | | 41 | | | 47 | | | 47 | |
| 57B | | 44 | | | 47 | | | 45 | | | 41 | | | 44 | | | 46 | | | 45 | | | 40 | | | 46 | | | 47 | |
| 57C | | 42 | | | 44 | | | 43 | | | 38 | | | 42 | | | 44 | | | 43 | | | 38 | | | 44 | | | 45 | |
| 58 | | 43 | | | 46 | | | 45 | | | 40 | | | 43 | | | 46 | | | 45 | | | 40 | | | 46 | | | 46 | |
| 60 | | 51 | | | 54 | | | 54 | | | 49 | | | 51 | | | 54 | | | 54 | | | 49 | | | 54 | | | 54 | |
| 61A | | 51 | | | 53 | | | 53 | | | 48 | | | 51 | | | 53 | | | 53 | | | 48 | | | 53 | | | 54 | |
| 61B | | 51 | | | 53 | | | 53 | | | 48 | | | 51 | | | 53 | | | 53 | | | 48 | | | 53 | | | 54 | |
| 65A | | 51 | | | 53 | | | 53 | | | 49 | | | 51 | | | 53 | | | 53 | | | 49 | | | 53 | | | 54 | |
| 63 | | 51 | | | 53 | | | 53 | | | 48 | | | 51 | | | 53 | | | 53 | | | 48 | | | 53 | | | 53 | |
| 68 | | 49 | | | 52 | | | 52 | | | 48 | | | 49 | | | 52 | | | 52 | | | 48 | | | 52 | | | 52 | |
| 69 | | 52 | | | 54 | | | 54 | | | 50 | | | 52 | | | 54 | | | 54 | | | 50 | | | 54 | | | 54 | |
| 141 | | 49 | | | 45 | | | 50 | | | 51 | | | 49 | | | 45 | | | 50 | | | 51 | | | 51 | | | 50 | |
| 146 | | 42 | | | 39 | | | 39 | | | 43 | | | 42 | | | 39 | | | 39 | | | 43 | | | 44 | | | 42 | |
| 151 | | 47 | | | 47 | | | 44 | | | 44 | | | 47 | | | 44 | | | 44 | | | 44 | | | 49 | | | 47 | |
| 158 | | 44 | | | 43 | | | 41 | | | 41 | | | 44 | | | 41 | | | 41 | | | 41 | | | 47 | | | 44 | |
| 161 | | 41 | | | 38 | | | 37 | | | 37 | | | 41 | | | 37 | | | 37 | | | 37 | | | 43 | | | 41 | |
| 162 | | 39 | | | 35 | | | 35 | | | 35 | | | 38 | | | 35 | | | 35 | | | 35 | | | 41 | | | 38 | |
| 165 | | 39 | | | 37 | | | 35 | | | 35 | | | 39 | | | 35 | | | 35 | | | 35 | | | 41 | | | 39 | |

| Predicted Noise Level – 63 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** |
| **Equivalent 1/1 Octave Criteria** | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 168 | | 41 | | | 40 | | | 37 | | | 37 | | | 41 | | | 37 | | | 37 | | | 37 | | | 43 | | | 41 | |
| 349 | | 38 | | | 37 | | | 34 | | | 34 | | | 38 | | | 34 | | | 34 | | | 34 | | | 40 | | | 38 | |
| 348 | | 39 | | | 37 | | | 35 | | | 35 | | | 39 | | | 35 | | | 35 | | | 35 | | | 41 | | | 39 | |
| 181A | | 41 | | | 43 | | | 42 | | | 37 | | | 41 | | | 43 | | | 42 | | | 37 | | | 43 | | | 44 | |
| 181B | | 41 | | | 43 | | | 43 | | | 37 | | | 41 | | | 43 | | | 42 | | | 37 | | | 43 | | | 44 | |
| 181C | | 41 | | | 43 | | | 42 | | | 37 | | | 41 | | | 43 | | | 42 | | | 37 | | | 43 | | | 44 | |
| 181D | | 41 | | | 43 | | | 42 | | | 37 | | | 41 | | | 43 | | | 42 | | | 37 | | | 43 | | | 44 | |
| 225 | | 42 | | | 44 | | | 38 | | | 38 | | | 41 | | | 43 | | | 38 | | | 38 | | | 44 | | | 43 | |
| 226 | | 40 | | | 43 | | | 37 | | | 37 | | | 40 | | | 42 | | | 36 | | | 36 | | | 43 | | | 42 | |
| 242 | | 38 | | | 41 | | | 34 | | | 34 | | | 38 | | | 37 | | | 34 | | | 34 | | | 41 | | | 38 | |
| 292 | | 40 | | | 43 | | | 37 | | | 37 | | | 40 | | | 42 | | | 37 | | | 37 | | | 43 | | | 42 | |
| 317 | | 33 | | | 33 | | | 29 | | | 29 | | | 33 | | | 29 | | | 29 | | | 29 | | | 36 | | | 33 | |
| 17 | | 39 | | | 42 | | | 42 | | | 41 | | | 39 | | | 42 | | | 42 | | | 41 | | | 42 | | | 43 | |
| Bylong Oval | | 51 | | | 53 | | | 53 | | | 48 | | | 51 | | | 53 | | | 53 | | | 48 | | | 53 | | | 54 | |
| Bylong Community Hall | | 51 | | | 53 | | | 53 | | | 48 | | | 51 | | | 53 | | | 53 | | | 48 | | | 53 | | | 53 | |
| Bylong Quarry | | 44 | | | 43 | | | 46 | | | 46 | | | 44 | | | 45 | | | 46 | | | 46 | | | 46 | | | 47 | |

Note 1: Third octave thresholds from Draft ING (**EPA, 2015**).

## Table B-14: Year 9 Z-Weighted Noise Modelling Frequency Analysis – ING Low Frequency – 125Hz

| | Predicted Noise Level – 125 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** |
| **Equivalent 1/1 Octave Criteria** | **51** | | | **51** | | | **51** | | | **54** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 26 | | | 33 | | | 33 | | | 26 | | | 26 | | | 33 | | | 33 | | | 26 | | | 33 | | | 30 | | |
| 5 | 27 | | | 34 | | | 34 | | | 26 | | | 26 | | | 33 | | | 33 | | | 26 | | | 33 | | | 30 | | |
| 41A | 28 | | | 35 | | | 35 | | | 28 | | | 28 | | | 35 | | | 35 | | | 28 | | | 35 | | | 31 | | |
| 41B | 28 | | | 35 | | | 35 | | | 28 | | | 28 | | | 35 | | | 35 | | | 28 | | | 35 | | | 31 | | |
| 42 | 29 | | | 35 | | | 35 | | | 29 | | | 28 | | | 35 | | | 35 | | | 28 | | | 35 | | | 32 | | |
| 43 | 28 | | | 35 | | | 35 | | | 28 | | | 28 | | | 35 | | | 35 | | | 28 | | | 35 | | | 31 | | |
| 44 | 29 | | | 36 | | | 36 | | | 33 | | | 29 | | | 36 | | | 36 | | | 33 | | | 36 | | | 33 | | |
| 47 | 29 | | | 36 | | | 36 | | | 31 | | | 29 | | | 35 | | | 35 | | | 31 | | | 35 | | | 33 | | |
| 49 | 30 | | | 36 | | | 36 | | | 34 | | | 30 | | | 36 | | | 36 | | | 34 | | | 36 | | | 33 | | |
| 50 | 30 | | | 37 | | | 37 | | | 35 | | | 30 | | | 37 | | | 37 | | | 35 | | | 37 | | | 34 | | |
| 56 | 35 | | | 41 | | | 41 | | | 33 | | | 35 | | | 41 | | | 41 | | | 33 | | | 41 | | | 39 | | |
| 57A | 35 | | | 41 | | | 40 | | | 32 | | | 34 | | | 41 | | | 40 | | | 32 | | | 41 | | | 38 | | |
| 57B | 34 | | | 40 | | | 40 | | | 32 | | | 34 | | | 40 | | | 40 | | | 32 | | | 40 | | | 38 | | |
| 57C | 35 | | | 41 | | | 40 | | | 32 | | | 34 | | | 41 | | | 40 | | | 32 | | | 41 | | | 39 | | |
| 58 | 36 | | | 42 | | | 41 | | | 34 | | | 36 | | | 42 | | | 41 | | | 34 | | | 42 | | | 41 | | |
| 60 | 39 | | | 44 | | | 44 | | | 37 | | | 39 | | | 44 | | | 44 | | | 37 | | | 44 | | | 43 | | |
| 61A | 38 | | | 44 | | | 44 | | | 36 | | | 38 | | | 44 | | | 44 | | | 36 | | | 44 | | | 42 | | |
| 61B | 38 | | | 44 | | | 44 | | | 36 | | | 38 | | | 44 | | | 44 | | | 36 | | | 44 | | | 42 | | |
| 65A | 39 | | | 44 | | | 44 | | | 37 | | | 38 | | | 44 | | | 44 | | | 37 | | | 44 | | | 43 | | |
| 63 | 39 | | | 44 | | | 44 | | | 37 | | | 39 | | | 44 | | | 44 | | | 37 | | | 44 | | | 43 | | |
| 68 | 38 | | | 44 | | | 44 | | | 37 | | | 38 | | | 44 | | | 44 | | | 37 | | | 44 | | | 43 | | |

| Predicted Noise Level – 125 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** |
| **Equivalent 1/1 Octave Criteria** | **51** | | | **51** | | | **51** | | | **54** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 69 | 41 | | | 46 | | | 46 | | | 40 | | | 41 | | | 46 | | | 46 | | | 40 | | | 46 | | | 45 | | |
| 141 | 39 | | | 37 | | | 44 | | | 45 | | | 39 | | | 37 | | | 43 | | | 45 | | | 45 | | | 44 | | |
| 146 | 36 | | | 34 | | | 34 | | | 41 | | | 36 | | | 34 | | | 34 | | | 41 | | | 42 | | | 36 | | |
| 151 | 38 | | | 40 | | | 36 | | | 36 | | | 38 | | | 36 | | | 36 | | | 36 | | | 44 | | | 38 | | |
| 158 | 38 | | | 37 | | | 36 | | | 36 | | | 38 | | | 36 | | | 36 | | | 36 | | | 43 | | | 38 | | |
| 161 | 35 | | | 33 | | | 33 | | | 33 | | | 35 | | | 33 | | | 33 | | | 33 | | | 41 | | | 35 | | |
| 162 | 33 | | | 31 | | | 31 | | | 31 | | | 33 | | | 31 | | | 31 | | | 31 | | | 39 | | | 33 | | |
| 165 | 33 | | | 32 | | | 30 | | | 30 | | | 33 | | | 30 | | | 30 | | | 30 | | | 39 | | | 33 | | |
| 168 | 34 | | | 33 | | | 31 | | | 31 | | | 34 | | | 31 | | | 31 | | | 31 | | | 40 | | | 34 | | |
| 349 | 30 | | | 29 | | | 27 | | | 27 | | | 30 | | | 27 | | | 27 | | | 27 | | | 37 | | | 30 | | |
| 348 | 31 | | | 29 | | | 28 | | | 28 | | | 31 | | | 28 | | | 28 | | | 28 | | | 37 | | | 31 | | |
| 181A | 33 | | | 40 | | | 38 | | | 31 | | | 33 | | | 40 | | | 38 | | | 31 | | | 40 | | | 38 | | |
| 181B | 34 | | | 40 | | | 38 | | | 31 | | | 33 | | | 40 | | | 38 | | | 31 | | | 40 | | | 38 | | |
| 181C | 34 | | | 40 | | | 38 | | | 31 | | | 33 | | | 40 | | | 38 | | | 31 | | | 40 | | | 38 | | |
| 181D | 34 | | | 40 | | | 38 | | | 31 | | | 34 | | | 40 | | | 38 | | | 31 | | | 40 | | | 38 | | |
| 225 | 34 | | | 40 | | | 31 | | | 31 | | | 34 | | | 39 | | | 31 | | | 31 | | | 40 | | | 39 | | |
| 226 | 33 | | | 39 | | | 30 | | | 30 | | | 33 | | | 38 | | | 30 | | | 30 | | | 39 | | | 38 | | |
| 242 | 30 | | | 36 | | | 27 | | | 27 | | | 30 | | | 30 | | | 27 | | | 27 | | | 37 | | | 30 | | |
| 292 | 33 | | | 39 | | | 30 | | | 30 | | | 33 | | | 38 | | | 30 | | | 30 | | | 39 | | | 38 | | |
| 317 | 26 | | | 26 | | | 23 | | | 23 | | | 26 | | | 23 | | | 23 | | | 23 | | | 33 | | | 26 | | |
| 17 | 31 | | | 38 | | | 38 | | | 37 | | | 31 | | | 38 | | | 38 | | | 37 | | | 38 | | | 35 | | |
| Bylong Oval | 38 | | | 44 | | | 44 | | | 37 | | | 38 | | | 44 | | | 44 | | | 37 | | | 44 | | | 43 | | |
| Bylong Community Hall | 38 | | | 44 | | | 44 | | | 36 | | | 38 | | | 44 | | | 44 | | | 36 | | | 44 | | | 42 | | |

| Predicted Noise Level – 125 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** |
| **Equivalent 1/1 Octave Criteria** | **51** | | | **51** | | | **51** | | | **54** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bylong Quarry | 37 | | | 37 | | | 42 | | | 42 | | | 37 | | | 40 | | | 42 | | | 42 | | | 42 | | | 41 | | |

Note 1: Third octave thresholds from Draft ING (**EPA, 2015**).

## Table B-15: Year 9 Underground Only Z-Weighted Noise Modelling Frequency Analysis – ING Low Frequency – 63Hz

| Predicted Noise Level – 63 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** |
| **Equivalent 1/1 Octave Criteria** | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 31 | | | 34 | | | 34 | | | 31 | | | 31 | | | 34 | | | 34 | | | 31 | | | 34 | | | 36 | | |
| 5 | 32 | | | 35 | | | 35 | | | 29 | | | 32 | | | 34 | | | 34 | | | 29 | | | 34 | | | 36 | | |
| 41A | 33 | | | 35 | | | 35 | | | 33 | | | 33 | | | 35 | | | 35 | | | 33 | | | 35 | | | 37 | | |
| 41B | 33 | | | 36 | | | 36 | | | 33 | | | 33 | | | 35 | | | 35 | | | 33 | | | 35 | | | 37 | | |
| 42 | 33 | | | 35 | | | 35 | | | 33 | | | 33 | | | 35 | | | 35 | | | 33 | | | 35 | | | 37 | | |
| 43 | 32 | | | 35 | | | 35 | | | 32 | | | 32 | | | 35 | | | 35 | | | 32 | | | 35 | | | 37 | | |
| 44 | 34 | | | 37 | | | 37 | | | 34 | | | 34 | | | 37 | | | 37 | | | 34 | | | 37 | | | 38 | | |
| 47 | 33 | | | 36 | | | 36 | | | 33 | | | 33 | | | 36 | | | 36 | | | 33 | | | 36 | | | 37 | | |
| 49 | 35 | | | 37 | | | 37 | | | 35 | | | 34 | | | 37 | | | 37 | | | 35 | | | 37 | | | 38 | | |
| 50 | 35 | | | 38 | | | 38 | | | 36 | | | 35 | | | 38 | | | 38 | | | 36 | | | 38 | | | 39 | | |
| 56 | 48 | | | 51 | | | 51 | | | 45 | | | 48 | | | 51 | | | 51 | | | 45 | | | 51 | | | 51 | | |
| 57A | 43 | | | 45 | | | 43 | | | 39 | | | 42 | | | 45 | | | 43 | | | 39 | | | 45 | | | 46 | | |
| 57B | 42 | | | 45 | | | 43 | | | 39 | | | 42 | | | 45 | | | 43 | | | 39 | | | 45 | | | 46 | | |
| 57C | 38 | | | 40 | | | 39 | | | 35 | | | 38 | | | 40 | | | 39 | | | 35 | | | 40 | | | 41 | | |
| 58 | 40 | | | 42 | | | 40 | | | 36 | | | 40 | | | 42 | | | 40 | | | 36 | | | 42 | | | 43 | | |
| 60 | 51 | | | 53 | | | 53 | | | 48 | | | 51 | | | 53 | | | 53 | | | 48 | | | 53 | | | 53 | | |
| 61A | 50 | | | 52 | | | 52 | | | 47 | | | 50 | | | 52 | | | 52 | | | 47 | | | 52 | | | 53 | | |
| 61B | 50 | | | 52 | | | 52 | | | 47 | | | 50 | | | 52 | | | 52 | | | 47 | | | 52 | | | 53 | | |
| 65A | 50 | | | 52 | | | 52 | | | 47 | | | 50 | | | 52 | | | 52 | | | 47 | | | 52 | | | 52 | | |
| 63 | 50 | | | 52 | | | 52 | | | 47 | | | 50 | | | 52 | | | 52 | | | 47 | | | 52 | | | 52 | | |
| 68 | 47 | | | 49 | | | 49 | | | 44 | | | 47 | | | 49 | | | 49 | | | 44 | | | 49 | | | 50 | | |

| Predicted Noise Level – 63 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** |
| **Equivalent 1/1 Octave Criteria** | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 69 | | 50 | | | 52 | | | 52 | | | 47 | | | 50 | | | 52 | | | 52 | | | 47 | | | 52 | | | 52 | |
| 141 | | 41 | | | 37 | | | 39 | | | 43 | | | 41 | | | 37 | | | 38 | | | 43 | | | 43 | | | 41 | |
| 146 | | 38 | | | 35 | | | 35 | | | 39 | | | 38 | | | 35 | | | 35 | | | 39 | | | 41 | | | 38 | |
| 151 | | 36 | | | 35 | | | 33 | | | 33 | | | 36 | | | 33 | | | 33 | | | 33 | | | 39 | | | 36 | |
| 158 | | 36 | | | 33 | | | 32 | | | 32 | | | 36 | | | 32 | | | 32 | | | 32 | | | 38 | | | 36 | |
| 161 | | 35 | | | 31 | | | 31 | | | 31 | | | 35 | | | 31 | | | 31 | | | 31 | | | 37 | | | 35 | |
| 162 | | 35 | | | 31 | | | 31 | | | 31 | | | 35 | | | 31 | | | 31 | | | 31 | | | 37 | | | 35 | |
| 165 | | 34 | | | 31 | | | 30 | | | 30 | | | 34 | | | 30 | | | 30 | | | 30 | | | 37 | | | 34 | |
| 168 | | 33 | | | 30 | | | 29 | | | 29 | | | 33 | | | 29 | | | 29 | | | 29 | | | 36 | | | 33 | |
| 349 | | 31 | | | 27 | | | 27 | | | 27 | | | 31 | | | 27 | | | 27 | | | 27 | | | 34 | | | 31 | |
| 348 | | 31 | | | 28 | | | 27 | | | 27 | | | 31 | | | 27 | | | 27 | | | 27 | | | 34 | | | 31 | |
| 181A | | 36 | | | 39 | | | 36 | | | 33 | | | 36 | | | 39 | | | 36 | | | 33 | | | 39 | | | 39 | |
| 181B | | 36 | | | 39 | | | 36 | | | 33 | | | 36 | | | 39 | | | 36 | | | 33 | | | 39 | | | 39 | |
| 181C | | 36 | | | 39 | | | 35 | | | 33 | | | 36 | | | 39 | | | 35 | | | 33 | | | 39 | | | 39 | |
| 181D | | 37 | | | 39 | | | 35 | | | 33 | | | 36 | | | 39 | | | 35 | | | 33 | | | 39 | | | 39 | |
| 225 | | 35 | | | 37 | | | 31 | | | 31 | | | 35 | | | 35 | | | 31 | | | 31 | | | 37 | | | 35 | |
| 226 | | 34 | | | 36 | | | 30 | | | 30 | | | 33 | | | 33 | | | 30 | | | 30 | | | 36 | | | 34 | |
| 242 | | 31 | | | 32 | | | 27 | | | 27 | | | 31 | | | 28 | | | 27 | | | 27 | | | 34 | | | 31 | |
| 292 | | 34 | | | 37 | | | 30 | | | 30 | | | 34 | | | 34 | | | 30 | | | 30 | | | 37 | | | 34 | |
| 317 | | 30 | | | 30 | | | 25 | | | 25 | | | 30 | | | 25 | | | 25 | | | 25 | | | 33 | | | 30 | |
| 17 | | 36 | | | 39 | | | 39 | | | 38 | | | 36 | | | 38 | | | 38 | | | 38 | | | 38 | | | 39 | |
| Bylong Oval | | 50 | | | 52 | | | 52 | | | 47 | | | 50 | | | 52 | | | 52 | | | 47 | | | 52 | | | 53 | |
| Bylong Community Hall | | 49 | | | 51 | | | 51 | | | 46 | | | 49 | | | 51 | | | 51 | | | 46 | | | 51 | | | 52 | |

| Predicted Noise Level – 63 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** | **50** | **50** | **48** |
| **Equivalent 1/1 Octave Criteria** | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | | **54** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bylong Quarry | 41 | | | 38 | | | 43 | | | 43 | | | 41 | | | 41 | | | 43 | | | 43 | | | 43 | | | 44 | | |

Note 1: Third octave thresholds from Draft ING (**EPA, 2015**).

**Table B-16: Underground Only Z-Weighted Noise Modelling Frequency Analysis – ING Low Frequency – 125Hz**

| Predicted Noise Level – 125 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** |
| **Equivalent 1/1 Octave Criteria** | **51** | | | **51** | | | **51** | | | **54** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 23 | | | 30 | | | 30 | | | 23 | | | 23 | | | 30 | | | 30 | | | 23 | | | 30 | | | 27 | | |
| 5 | 24 | | | 31 | | | 31 | | | 23 | | | 24 | | | 30 | | | 30 | | | 22 | | | 30 | | | 27 | | |
| 41A | 25 | | | 32 | | | 32 | | | 25 | | | 25 | | | 32 | | | 32 | | | 25 | | | 32 | | | 29 | | |
| 41B | 25 | | | 32 | | | 32 | | | 25 | | | 25 | | | 32 | | | 32 | | | 25 | | | 32 | | | 29 | | |
| 42 | 26 | | | 32 | | | 32 | | | 26 | | | 26 | | | 32 | | | 32 | | | 26 | | | 32 | | | 29 | | |
| 43 | 25 | | | 32 | | | 32 | | | 25 | | | 25 | | | 31 | | | 31 | | | 25 | | | 31 | | | 29 | | |
| 44 | 26 | | | 33 | | | 33 | | | 29 | | | 26 | | | 33 | | | 33 | | | 29 | | | 33 | | | 30 | | |
| 47 | 26 | | | 33 | | | 33 | | | 27 | | | 26 | | | 33 | | | 33 | | | 26 | | | 33 | | | 30 | | |
| 49 | 27 | | | 34 | | | 34 | | | 30 | | | 27 | | | 33 | | | 33 | | | 30 | | | 33 | | | 31 | | |
| 50 | 28 | | | 34 | | | 34 | | | 31 | | | 28 | | | 34 | | | 34 | | | 31 | | | 34 | | | 32 | | |
| 56 | 33 | | | 38 | | | 38 | | | 30 | | | 33 | | | 38 | | | 38 | | | 30 | | | 38 | | | 37 | | |
| 57A | 31 | | | 37 | | | 36 | | | 29 | | | 31 | | | 37 | | | 35 | | | 29 | | | 37 | | | 35 | | |
| 57B | 31 | | | 37 | | | 35 | | | 29 | | | 31 | | | 37 | | | 35 | | | 29 | | | 37 | | | 35 | | |
| 57C | 31 | | | 37 | | | 36 | | | 29 | | | 31 | | | 37 | | | 36 | | | 29 | | | 37 | | | 36 | | |

| Predicted Noise Level – 125 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** |
| **Equivalent 1/1 Octave Criteria** | **51** | | | **51** | | | **51** | | | **54** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 58 | 34 | | | 39 | | | 38 | | | 31 | | | 34 | | | 39 | | | 37 | | | 31 | | | 39 | | | 38 | | |
| 60 | 37 | | | 42 | | | 42 | | | 35 | | | 37 | | | 42 | | | 42 | | | 35 | | | 42 | | | 41 | | |
| 61A | 36 | | | 41 | | | 41 | | | 34 | | | 36 | | | 41 | | | 41 | | | 34 | | | 41 | | | 40 | | |
| 61B | 36 | | | 41 | | | 41 | | | 34 | | | 36 | | | 41 | | | 41 | | | 34 | | | 41 | | | 40 | | |
| 65A | 37 | | | 42 | | | 42 | | | 34 | | | 37 | | | 42 | | | 42 | | | 34 | | | 42 | | | 41 | | |
| 63 | 37 | | | 42 | | | 42 | | | 35 | | | 37 | | | 42 | | | 42 | | | 35 | | | 42 | | | 41 | | |
| 68 | 37 | | | 42 | | | 42 | | | 35 | | | 37 | | | 42 | | | 42 | | | 35 | | | 42 | | | 41 | | |
| 69 | 39 | | | 44 | | | 44 | | | 38 | | | 39 | | | 44 | | | 44 | | | 38 | | | 44 | | | 44 | | |
| 141 | 34 | | | 32 | | | 34 | | | 40 | | | 34 | | | 32 | | | 34 | | | 40 | | | 40 | | | 35 | | |
| 146 | 33 | | | 30 | | | 30 | | | 37 | | | 33 | | | 30 | | | 30 | | | 37 | | | 38 | | | 33 | | |
| 151 | 30 | | | 30 | | | 27 | | | 27 | | | 30 | | | 27 | | | 27 | | | 27 | | | 36 | | | 30 | | |
| 158 | 30 | | | 28 | | | 27 | | | 27 | | | 30 | | | 27 | | | 27 | | | 27 | | | 36 | | | 30 | | |
| 161 | 29 | | | 26 | | | 26 | | | 26 | | | 29 | | | 26 | | | 26 | | | 26 | | | 35 | | | 29 | | |
| 162 | 28 | | | 26 | | | 26 | | | 26 | | | 28 | | | 26 | | | 26 | | | 26 | | | 35 | | | 28 | | |
| 165 | 27 | | | 25 | | | 25 | | | 25 | | | 27 | | | 25 | | | 25 | | | 25 | | | 34 | | | 27 | | |
| 168 | 26 | | | 25 | | | 24 | | | 24 | | | 26 | | | 24 | | | 24 | | | 24 | | | 33 | | | 26 | | |
| 349 | 24 | | | 21 | | | 21 | | | 21 | | | 24 | | | 21 | | | 21 | | | 21 | | | 30 | | | 24 | | |
| 348 | 24 | | | 22 | | | 21 | | | 21 | | | 24 | | | 21 | | | 21 | | | 21 | | | 31 | | | 24 | | |
| 181A | 30 | | | 36 | | | 31 | | | 27 | | | 30 | | | 36 | | | 31 | | | 27 | | | 36 | | | 35 | | |
| 181B | 30 | | | 36 | | | 31 | | | 27 | | | 30 | | | 36 | | | 31 | | | 27 | | | 36 | | | 35 | | |
| 181C | 30 | | | 36 | | | 30 | | | 27 | | | 30 | | | 36 | | | 30 | | | 27 | | | 36 | | | 35 | | |
| 181D | 30 | | | 36 | | | 31 | | | 27 | | | 30 | | | 36 | | | 31 | | | 27 | | | 36 | | | 35 | | |
| 225 | 28 | | | 34 | | | 25 | | | 25 | | | 28 | | | 29 | | | 25 | | | 25 | | | 34 | | | 30 | | |

| Predicted Noise Level – 125 Hz Octave Band $L_{Zeq,15min}$ dB(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **Condition ID** | **1** | | | **2** | | | **3** | | | **4** | | | **5** | | | **6** | | | **7** | | | **8** | | | **9** | | | **10** | | |
| **Third Octave Criteria[1]** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** | **48** | **46** | **44** |
| **Equivalent 1/1 Octave Criteria** | **51** | | | **51** | | | **51** | | | **54** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | | **51** | | |
| **Receiver ID** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 226 | 27 | | | 33 | | | 24 | | | 24 | | | 27 | | | 27 | | | 24 | | | 24 | | | 33 | | | 27 | | |
| 242 | 24 | | | 27 | | | 21 | | | 21 | | | 24 | | | 21 | | | 21 | | | 21 | | | 31 | | | 24 | | |
| 292 | 27 | | | 34 | | | 25 | | | 25 | | | 27 | | | 30 | | | 24 | | | 24 | | | 34 | | | 30 | | |
| 317 | 22 | | | 22 | | | 19 | | | 19 | | | 22 | | | 19 | | | 19 | | | 19 | | | 29 | | | 22 | | |
| 17 | 29 | | | 35 | | | 35 | | | 35 | | | 29 | | | 35 | | | 35 | | | 35 | | | 35 | | | 33 | | |
| Bylong Oval | 36 | | | 42 | | | 42 | | | 34 | | | 36 | | | 42 | | | 42 | | | 34 | | | 42 | | | 41 | | |
| Bylong Community Hall | 36 | | | 41 | | | 41 | | | 34 | | | 36 | | | 41 | | | 41 | | | 34 | | | 41 | | | 40 | | |
| Bylong Quarry | 35 | | | 33 | | | 40 | | | 40 | | | 35 | | | 36 | | | 40 | | | 40 | | | 40 | | | 39 | | |

Note 1: Third octave thresholds from Draft ING (**EPA, 2015**).