Rix's Creek Mine

Monthly Compliance Monitoring – September 2024

Bloomfield Collieries

Four Mile Creek Road
Ashtonfield NSW 2323

Prepared by:

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Australia

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Revision	Date	Prepared By	Checked By	Authorised By
V1.0	3 October 2024	Jonathan Caine	Martin Davenport	Martin Davenport

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Bloomfield Collieries Pty Ltd. Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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1.0 Introduction

1.1 Background

Bloomfield Collieries Pty Ltd (Bloomfield) has commissioned SLR Consulting Australia Pty Ltd (SLR) to conduct night-time compliance noise monitoring of Rix's Creek Mine (the Mine).

The Mine is an open cut coal mine located approximately 5km north-west of Singleton in the Hunter Valley Coalfields of NSW. The Mine comprises the original Rix's Creek Mine and the former Vale Integra Open Cut Mine. The Mine operates under EPL 3391 but as the two previously mentioned mines operate under separate development approvals it is necessary to refer to the two parts of the Mine separately. In this compliance report the original Rix's Creek Mine is referred to as Rix's Creek South (RCS) and the former Vale Integra Open Cut Mine is referred to as Rix's Creek North (RCN).

Compliance noise monitoring of the Mine is guided by the relevant requirements of;

- Environment Protection Licence 3391 dated 15th December 2020 (EPL 3391)
- Rix's Creek Mine Noise Management Plan dated 12 December 2021 (NMP)
- Rix's Creek North Project Approval PA 08_0102 MOD 9 dated February 2021(PA 08_0102)
- SSD 6300 Rix's Creek Continuation Project

This report presents the results and findings from the operator-attended noise survey conducted on Thursday 5 September 2024 and Friday 6 September 2024.

1.2 Objectives of this Report

The objectives of the noise monitoring survey for this month were:

- Conduct Attended Noise Compliance Monitoring in accordance with the Rix's Creek Mine NMP, the NSW Industrial Noise Policy (2000) and requirements as noted in the "Implementation and transitional arrangements for the Noise Policy for Industry (2017).
- Measure the ambient noise levels of at least six (6) noise sensitive locations surrounding the Mine during the night-period (10:00 pm to 7:00 am) for a minimum of 15 minutes at each location.
- Quantify all sources of noise within each of the attended surveys, including estimated contribution or maximum level of the individual noise sources.
- Assess the noise emissions of the mine and determine compliance with respect to the relevant conditions.

1.3 Acoustic Terminology

The following report uses specialist acoustic terminology. An explanation of common terms is provided in Appendix A.

2.0 Rix's Creek Noise Criteria

RCS operations are subject to the conditions contained in SSD 6300 and EPL 3391.

RCN operations are subject to the conditions contained in Schedule 3 of PA 08_0102 and EPL3391.

RCM operations are subject to the conditions contained in EPL3391.

The Rix's Creek Mine NMP encompasses the noise management and relevant criteria for RCS and RCN operations, coal handling, preparation and processing and rail loading across the entire site. The Rix's Creek Mine NMP consolidates all requirements and provides (Section 6 of the NMP) procedures to ensure monthly attended noise compliance monitoring is carried out effectively.

2.1 EPL Noise Limits – Rix's Creek Mine Operations

The figures presented in Figure 1 are extracts from the EPL 3391.

Figure 1 Relevant EPL Noise Criteria

L3 Noise limits

L3.1 Noise generated at the premises must not exceed the noise limits in the Table below.

Location	Day/Evening/Night LAeq (15 minute)	Night LA1 (1 minute)
EPA 29 and NMG1	40	47
EPA 30 and NMG3	40	45
EPA 31 and NMG4	37	47
EPA 32 and NMG5	41	47
EPA 33 and NMG6	42	47
EPA 34 and NMG7	40	47
EPA 35 and NMG8	40	47
EPA 36 and NMG10	40	47
EPA 37 and NMG11	40	47
EPA 38 and NMG12	40	47

L3.2 For the purpose of condition L3.1:

a) EPA (number) refers to EPA identification point numbers as referenced in condition P1.4; and
b) NMG (number) refers to all privately owned residential receivers on land within noise monitoring groups identified by Figure 1.

L3.3 For the purpose of condition L3.1:

a) Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays;
b) Evening is defined as the period from 6pm to 10pm; and
c) Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays.

L3.4 The noise limits set out in condition L3.1 apply under all meteorological conditions except for the following:

a) Wind speeds greater than 3 metres/second at 10 metres above the ground level;
b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
c) Stability category G temperature inversion conditions.

L3.5 For the purposes of condition L3.4:

a) Data recorded by a meteorological station installed on the premises at EPA Identification Point 41 must be used to determine meteorological conditions; and
b) Temperature inversion conditions (stability category) are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.

L3.6 A non-compliance of condition L3.1 will still occur where noise generated from the premises in excess of the appropriate limit is measured:

- at any privately owned residential receiver within the Noise Monitoring Groups defined in Condition L3.1.

L3.7 For the purposes of compliance monitoring and determining the noise generated at the premises the modification factors in Fact Sheet C of the Noise Policy for Industry (2017) must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

Definitions:

- *Noise refers to 'sound pressure levels' for the purpose of conditions L3.1 to L3.7.*

M9 Noise monitoring

M9.1 To assess compliance with condition L3.1, attended noise monitoring must be undertaken in accordance with conditions L3.2 to L3.7 and:

a) at a minimum of 6 locations from those listed condition P1.4 shown to be experiencing noise enhancing meteorological conditions;
b) occur every calendar month in a reporting period; and
c) occur during one night-time period as defined in the *Noise Policy Industry 2017* for a minimum of 15 minutes at each location from a) during the night.

2.2 Rix's Creek North Project Approval

The noise limits specified for RCN can be found within the reproduced figures of relevant conditions from the Project Approval PA 08_0102 (MOD 9) in Appendix B**.**

2.3 Rix's Creek South Development Consent

The noise limits specified for RCS can be found within the reproduced extracts from the Development Consent SSD 6300 in Appendix C.

2.4 Noise Limits at the Nominated Noise Monitoring Locations

The relevant conditions for RCS and RCN are presented in Table 1**.**

Table 1 Compliance Criteria

NMP ID	EA Ref. (RCN/RCS)[1]	Rix's Creek North		Rix's Creek South		Rix's Creek Mine Combined	
		$L_{Aeq(15min)}$	$L_{A1(1min)}$	$L_{Aeq(15min)}$	$L_{A1(1min)}$	$L_{Aeq(15min)}$	$L_{A1(1min)}$
NM01	132/171	38	48	40	47	40	47
NM03	63/NA	40	45	40[1]	45[1]	40	45
NM04	19/12	37	49	42	47	37	47
NM05	11/8	41	47	42	47	41	47
NM06	150/23	36	48	42	47	42	47
NM07	NA/61	35[1]	45[1]	40	47	40	47
NM08	NA/152	35[1]	45[1]	40	47	40	47
NM10	NA/126	35[1]	45[1]	40	47	40	47
NM11	NA/160	35[1]	45[1]	40	47	40	47
NM12	NA/168	35[1]	45[1]	40	47	40	47

Notes 1: Criterion set as for "All other privately owned residences".

3.0 Noise Monitoring Methodology

3.1 General Requirements

The night-time Attended Noise Compliance Monitoring was conducted in accordance with Rix's Creek Mine NMP, the NSW Industrial Noise Policy (2000) and requirements as noted in the "Implementation and transitional arrangements for the Noise Policy for Industry (2017).

3.2 Modifying Factors

The implementation and transitional arrangements for the NSW Noise Policy for Industry (NPfI) notes the following:

The NSW Industrial Noise Policy (2000) will continue to apply where it is referenced in existing statutory instruments (such as consents and licences), except for the NSW Industrial Noise Policy Section 4 modifying factors, which will be transitioned to the Noise Policy for Industry (2017) Fact Sheet C through a NSW Industrial Noise Policy application note. This approach has been taken because the Noise Policy for Industry (2017) modification factor approach reflects more recent understanding of the impact of tonal and low-frequency noise on the community.

As such appropriate modifying factors such as low frequency noise have been assessed against NPfI requirements.

Relevant modifying factors are assessed by analysis of the measured RCM L_{Aeq} spectrum where applicable.

3.3 Rix's Creek Mine Noise Monitoring Locations

Residences surrounding the Mine have been grouped generally according to the locality and local acoustic environment. These groupings are referenced in the relevant EAs as Noise Assessment Groups (NAG). Monitoring locations, including the receptor reference numbers from the relevant EAs and the NAG each represents are listed below.

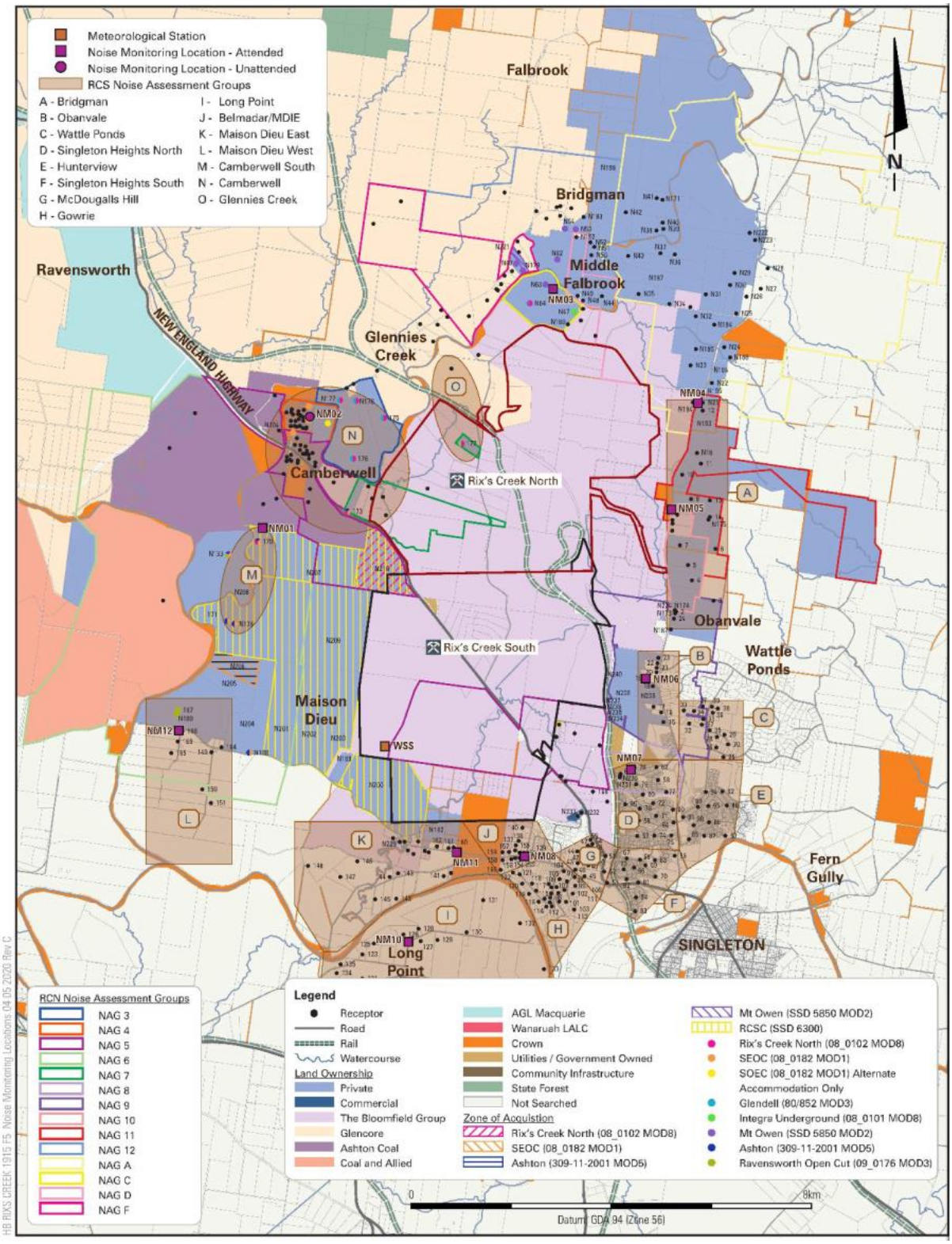
Table 2 Noise Attended Monitoring Locations

NMP ID	EA Ref. (ICO/RCM)[1]	Owner or Area	NAG[2]
NM01	132/171	Bowman	6 (RCN)/M (RCS)
NM03	63/NA	Moore	B, C, F, 1, 6 and 12 (RCN)
NM04	19/12	Andrews	11 and A (RCN)/A (RCS)
NM05	11/8	Ferraro	10 and 11 (RCN)/A (RCS)
NM06	150/23	Bridgman Road	9 (RCN)/B and C (RCS)
NM07	NA/61	Gardiner Circuit	8 (RCN)/D and E (RCS)
NM08	NA/152	Belmadar Way	NA/J, G and F (RCS)
NM10	NA/126	Long Point	NA/K and I (RCS)
NM11	NA/160	320 Maison Dieu Road	NA/K (RCS)
NM12	NA/168	Corner of Maison Dieu Road and Shearers Lane	NA/L (RCS)

Note 1: NA indicates location was not included in the EA for that project; and
Note 2: Indicates the NAG reference the location represents from the relevant EAs

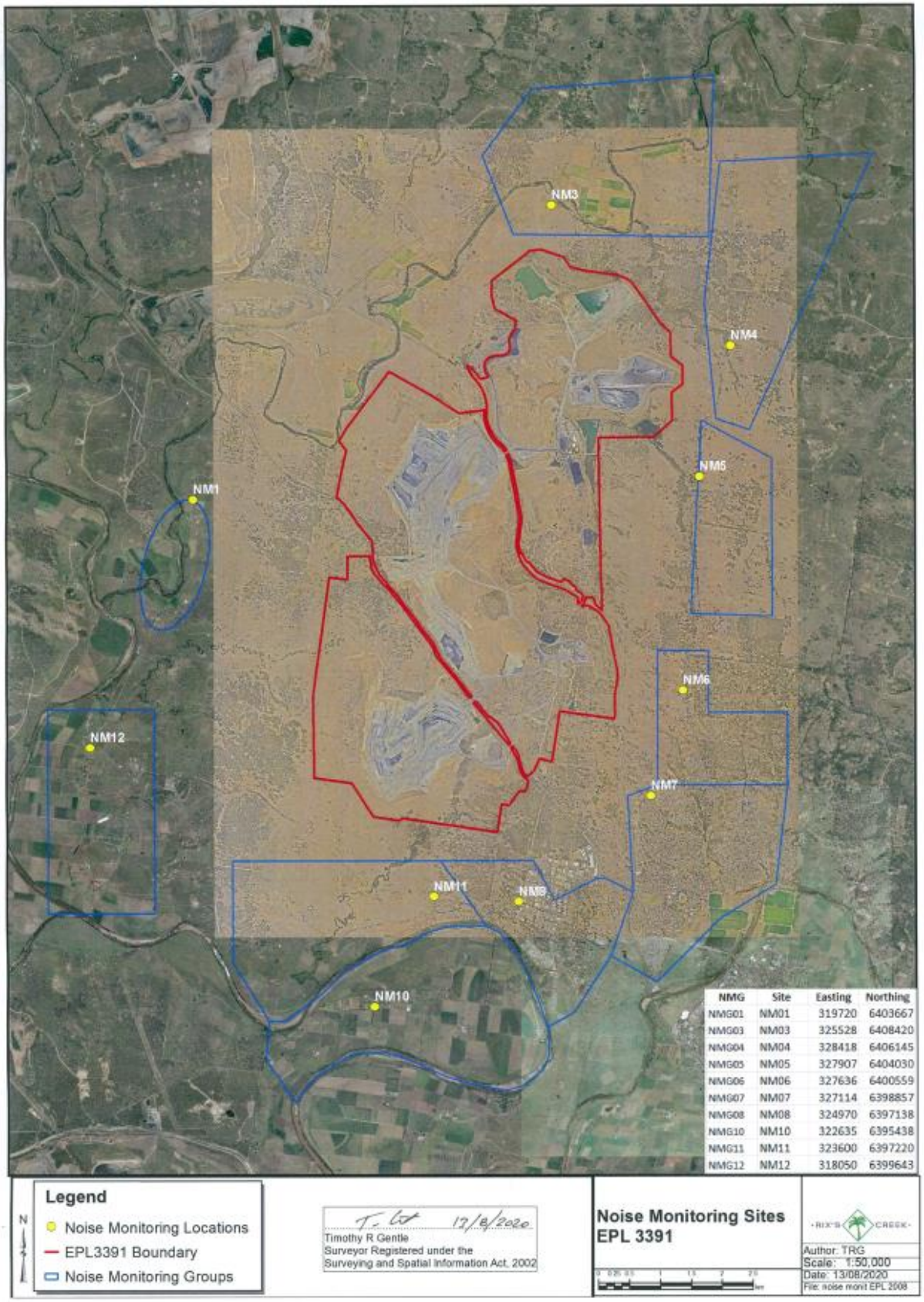
A site map sourced from the NMP and EPL 3391 identifying the assessment and noise monitoring locations are presented in Figure 2 and Figure 3.

Figure 2 RCM Noise Monitoring Locations



Source: Rix's Creek Mine NMP - Figure 5

Figure 3 Attended Noise Compliance Monitoring Sites



NMG	Site	Easting	Northing
NMG01	NM01	319720	6403667
NMG03	NM03	325528	6408420
NMG04	NM04	328418	6406145
NMG05	NM05	327907	6404030
NMG06	NM06	327636	6400559
NMG07	NM07	327114	6398857
NMG08	NM08	324970	6397138
NMG10	NM10	322635	6395438
NMG11	NM11	323600	6397220
NMG12	NM12	318050	6399643

3.4 Noise Monitoring Location Selection

As per the NMP, the procedure stated below was used to select appropriate noise monitoring locations:

Compliance monitoring is targeted to locations where operational noise is likely to be in the zone of meteorological enhancement as indicated by the predictive noise model. The procedure for determining which locations to monitor is as follows:

1. *The acoustic consultant undertaking the monitoring will access the predictive model website for the site for the upcoming night shift. The model results will indicate graphically the predicted zone of the meteorological enhancement;*
2. *A monitoring plan will be developed by the consultant for the upcoming night period. Locations include:*
    a. *If a clear zone of meteorological enhancement is indicated, one location in the opposite direction to the zone of predicted enhancement, and, all locations located within the predicted zone of enhancement; or*
    b. *If relatively neutral conditions are predicted with no clear zone of meteorological enhancement, the eight locations nearest RCM will be monitored. NM01 and NM10 will be excluded, non-compliance at those locations in the absence of meteorological enhancement is unlikely due to distance from the RCM.*
3. *As required under condition M9.1(a) a minimum of six locations will be monitored per night period fatigue a management rules and re-measures not allow all eight locations to be measured.*

3.5 Nominated Monitoring Locations

Night time attended noise compliance monitoring during September 2024 was conducted at six (6) locations. The details of the monitoring locations are given in Table 3.

Table 3 Attended Noise Monitoring Locations

NMP ID	EA Ref. (RCN/RCS)	Owner or Area
NM03	63/NA	Moore
NM04	19/12	Andrews
NM05	11/8	Ferraro
NM06	150/23	Bridgman Road
NM07	NA/61	Gardiner Circuit
NM08	NA/152	Belmadar Way

4.0 Operator Attended Noise Monitoring

Operator attended noise surveys were conducted at each of the six (6) nominated noise monitoring locations during the night-time period from 10:00 pm to identify and quantify sources of noise that contributed to the overall ambient noise level. A 15 minute measurement was conducted at each site using an integrating sound level meter to observe condition M9.1 of EPL 3391 which requires a minimum of 15 minutes at each location.

4.1 Results of Operator Attended Noise Monitoring

Operator attended noise compliance monitoring commenced at 22:17 on Thursday 5 September 2024 and the final noise survey commenced at 00:17 Friday 6 September 2024 followed by a follow-up noise survey at 22:04 on Tuesday 10 September 2024. Operator attended noise surveys were conducted using a Brüel & Kjær Type 2250L (S/N 3003389).

Weather data during the monitoring period has been obtained from the weather station located on the Rix's Creek Mine Weather Station site (EPL 3391 ID #11).

Ambient noise levels given in the tables include all noise sources such as traffic, insects, birds, and mine operations as well as any other industrial operations.

The tables provide the following information:

- Monitoring location.
- Date and start time.
- Wind velocity (m/s) and Temperature (ºC) at the measurement location.
- Typical maximum (L_{Amax}) and contributed noise levels.

Mine contributions listed in the tables are from Rix's Creek Mine and are stated only when a contribution could be quantified.

4.1.1 Operator-attended Noise Survey Results – NM03 'Moore'

Results of the operator-attended noise surveys at NM03 are provided in Table 4. Monitoring location NM03 represents residential receptors located to the north of the site.

Table 4 Location NM03

<table>
<tr><th rowspan="2">Date/ Start time/ Weather</th><th colspan="5">Primary Noise Descriptor (dBA re 20 μPa)</th><th rowspan="2">Modifying Factors Applicable</th><th rowspan="2">Description of Noise Emission, Typical Maximum Noise Levels (LAmax – dBA)</th></tr>
<tr><th>LAmax</th><th>LA1</th><th>LA10</th><th>LA90</th><th>LAeq</th></tr>
<tr><td rowspan="2">05/09/2024
22:17
18°C
2.5 m/s NW</td><td>58</td><td>43</td><td>40</td><td>37</td><td>39</td><td rowspan="11">N/A</td><td rowspan="11">Dogs 51-58
Creek
Other Industrial 29-42
Distant Traffic 36-40
Birds/Insects 29-55
Rix's Creek Occasionally Distinguishable
Pit noise 28-29
Estimated RCN Contribution
LAeq(15min) <28
LA1(1min) 29</td></tr>
<tr><td colspan="3">Estimated Rix's Creek Mine North Noise Contribution</td><td colspan="2">Estimated Rix's Creek Mine South Noise Contribution</td></tr>
<tr><td rowspan="5">WS>3.0 m/s?
No</td><td colspan="2">LAeq(15min)</td><td colspan="2">LA1(1min)</td></tr>
<tr><td colspan="2">Criteria Limit: 40</td><td colspan="2">Criteria Limit: 45</td></tr>
<tr><td colspan="2"><28</td><td colspan="2">29</td></tr>
<tr><td colspan="4">Estimated Rix's Creek Mine EPL Combined Noise Contribution</td></tr>
<tr><td colspan="2">LAeq(15min)</td><td colspan="2">LA1(1min)</td></tr>
<tr><td colspan="2">Criteria Limit: 40</td><td colspan="2">Criteria Limit:45</td></tr>
<tr><td colspan="2"><28</td><td colspan="2">29</td></tr>
<tr><td colspan="8">Note 1: N/A = Not Applicable due to non-compliant weather conditions and/or RCM being inaudible or significantly below the noise criteria.</td></tr>
</table>

4.1.1.1 Operator Attended Noise Survey Summary – NM03

RCS operations were inaudible during the night-time noise monitoring survey at this location.

RCN and RCM operations were audible during the night-time monitoring survey at this location. RCN and RCM $L_{Aeq(15minute)}$ and $L_{A1(1minute)}$ was estimated to be <28 dBA and 29 dBA, respectively.

Road traffic noise, as well as noise from other industry and insects contributed to the overall ambient noise environment during the night-time operator attended noise survey at this location.

4.1.2 Operator-attended Noise Survey Results – NM04 'Andrews'

Results of the operator-attended noise surveys at NM04 are provided in Table 5. Monitoring location NM04 represents residential receptors located to the east of the site.

Table 5 Location NM04

<table>
<tr><th rowspan="2">Date/
Start time/
Weather</th><th colspan="5">Primary Noise Descriptor (dBA re 20 μPa)</th><th rowspan="2">Modifying Factors Applicable</th><th rowspan="2">Description of Noise Emission, Typical Maximum Noise Levels (LAmax – dBA)</th></tr>
<tr><th>LAmax</th><th>LA1</th><th>LA10</th><th>LA90</th><th>LAeq</th></tr>
<tr><td rowspan="2">5/09/2024
22:40
17°C
3.4 m/s NW</td><td>87</td><td>73</td><td>54</td><td>31</td><td>62</td><td rowspan="11">N/A</td><td rowspan="11">Traffic 38-87
Insects/Birds 30-42
Train 28 37

Rix's Creek Audible
General Pit Noise 28-31
Estimated RCN Contribution
LAeq(15min) 30
LA1(1min) 31</td></tr>
<tr><td colspan="3">Estimated Rix's Creek Mine North Noise Contribution</td><td colspan="2">Estimated Rix's Creek Mine South Noise Contribution</td></tr>
<tr><td rowspan="5">WS>3.0 m/s?
Yes</td><td colspan="2">LAeq(15min)</td><td colspan="2">LA1(1min)</td><td colspan="2">LAeq(15min)</td><td>LA1(1min)</td></tr>
<tr><td colspan="2">Criteria Limit: 37</td><td colspan="2">Criteria Limit: 49</td><td colspan="2">Criteria Limit: 42</td><td>Criteria Limit: 47</td></tr>
<tr><td colspan="2">30</td><td colspan="2">31</td><td colspan="2">Inaudible</td><td>Inaudible</td></tr>
<tr><td colspan="5">Estimated Rix's Creek Mine EPL Combined Noise Contribution</td></tr>
<tr><td colspan="3">LAeq(15min)</td><td colspan="3">LA1(1min)</td></tr>
<tr><td colspan="3">Criteria Limit: 37</td><td colspan="3">Criteria Limit:47</td></tr>
<tr><td colspan="3">30</td><td colspan="3">31</td></tr>
<tr><td colspan="8">Note 1: N/A = Not Applicable due to non-compliant weather conditions and/or RCM being inaudible or significantly below the noise criteria.</td></tr>
</table>

4.1.2.1 Operator Attended Noise Survey Summary – NM04

RCS, operations were inaudible during the night-time noise monitoring survey at this location.

RCN and RCM operations were audible during the night-time monitoring survey at this location. RCN and RCM $L_{Aeq(15minute)}$ and $L_{A1(1minute)}$ was estimated to be 30 dBA and 31 dBA, respectively.

Mine-related noise and noise from road and rail traffic as well as insects and birds also contributed to the overall ambient noise environment during the night-time operator attended noise survey at this location.

Due to wind speeds during the monitoring period exceeding 3 m/s during the monitoring period, noise limits are not applicable for this period.

4.1.3 Operator-attended Noise Survey Results – NM05 'Ferraro'

Results of the operator-attended noise surveys at NM05 are provided in Table 6. Monitoring location NM05 represents residential receptors located to the east of the site.

Table 6 Location NM05

<table>
<tr><th rowspan="2">Date/
Start time/
Weather</th><th colspan="5">Primary Noise Descriptor
(dBA re 20 μPa)</th><th rowspan="2">Modifying Factors Applicable</th><th rowspan="2">Description of Noise Emission, Typical Maximum Noise Levels
(LAmax – dBA)</th></tr>
<tr><th>LAmax</th><th>LA1</th><th>LA10</th><th>LA90</th><th>LAeq</th></tr>
<tr><td rowspan="11">05/09/2024
23:02
17°C
3.8 m/s NW

WS>3.0 m/s?
Yes</td><td>85</td><td>63</td><td>42</td><td>33</td><td>56</td><td rowspan="11">N/A</td><td rowspan="11">Traffic 40-85
Trains 30-34
Insects 34-36

Rix's Creek: Audible
Pit Noise 28-35
Estimated RCN Contribution
LAeq(15min) 32
LA1(1min) 35</td></tr>
<tr><td colspan="3">Estimated Rix's Creek Mine North Noise Contribution</td><td colspan="2">Estimated Rix's Creek Mine South Noise Contribution</td></tr>
<tr><td colspan="2">LAeq(15min)</td><td colspan="2">LA1(1min)</td><td colspan="2">LAeq(15min)</td><td colspan="2">LA1(1min)</td></tr>
<tr><td colspan="2">Criteria Limit: 41</td><td colspan="2">Criteria Limit: 47</td><td colspan="2">Criteria Limit: 42</td><td colspan="2">Criteria Limit: 47</td></tr>
<tr><td colspan="2">32</td><td colspan="2">35</td><td colspan="2">Inaudible</td><td colspan="2">Inaudible</td></tr>
<tr><td colspan="7">Estimated Rix's Creek Mine EPL Combined Noise Contribution</td></tr>
<tr><td colspan="3">LAeq(15min)</td><td colspan="4">LA1(1min)</td></tr>
<tr><td colspan="3">Criteria Limit: 41</td><td colspan="4">Criteria Limit:47</td></tr>
<tr><td colspan="3">32</td><td colspan="4">35</td></tr>
<tr><td colspan="8">Note 1: N/A = Not Applicable due to non-compliant weather conditions and/or RCM being inaudible or significantly below the noise criteria.</td></tr>
</table>

4.1.3.1 Operator Attended Noise Survey Summary – NM05

RCS operations were inaudible during the night-time noise monitoring survey at this location.

RCN and RCM operations were audible during the night-time noise monitoring survey at this location. RCN and RCM $L_{Aeq(15minute)}$ and $L_{A1(1minute)}$ was estimated to be 32 dBA and 35 dBA, respectively.

Noise from Rix's Creek Mine as well as road and rail traffic noise and noise from insects contributed to the overall ambient noise environment during the night-time operator attended noise survey at this location.

Due to wind speeds during the monitoring period exceeding 3 m/s during the monitoring period, noise limits are not applicable for this period.

4.1.4 Operator-attended Noise Survey Results – NM06 'Bridgman Road'

Results of the operator-attended noise surveys at NM06 are provided in Table 7. Monitoring location NM06 represents residential receptors located to the east of the site.

Table 7 Location NM06

<table>
<tr><th rowspan="2">Date/
Start time/
Weather</th><th colspan="5">Primary Noise Descriptor
(dBA re 20 μPa)</th><th rowspan="2">Modifying Factors Applicable</th><th rowspan="2">Description of Noise Emission, Typical Maximum Noise Levels
(LAmax – dBA)</th></tr>
<tr><th>LAmax</th><th>LA1</th><th>LA10</th><th>LA90</th><th>LAeq</th></tr>
<tr><td rowspan="11">05/09/2024
23:27
17°C
3.8 m/s NW

WS>3.0 m/s?
Yes</td><td>85</td><td>72</td><td>52</td><td>40</td><td>60</td><td rowspan="11">N/A</td><td rowspan="11">Traffic 42-85
Insects 40-46
Dogs 40-53

Rix's Creek: Audible
Pit Noise 38-45
Estimated RCS Contribution
LAeq(15min) 40
LA1(1min) 45</td></tr>
<tr><td colspan="3">Estimated Rix's Creek Mine North Noise Contribution</td><td colspan="2">Estimated Rix's Creek Mine South Noise Contribution</td></tr>
<tr><td colspan="2">LAeq(15min)</td><td colspan="2">LA1(1min)</td><td colspan="2">LAeq(15min)</td><td colspan="2">LA1(1min)</td></tr>
<tr><td colspan="2">Criteria Limit: 36</td><td colspan="2">Criteria Limit: 48</td><td colspan="2">Criteria Limit: 42</td><td colspan="2">Criteria Limit: 47</td></tr>
<tr><td colspan="2">Inaudible</td><td colspan="2">Inaudible</td><td colspan="2">40</td><td colspan="2">45</td></tr>
<tr><td colspan="8">Estimated Rix's Creek Mine EPL Combined Noise Contribution</td></tr>
<tr><td colspan="3">LAeq(15min)</td><td colspan="3">LA1(1min)</td></tr>
<tr><td colspan="3">Criteria Limit: 42</td><td colspan="3">Criteria Limit:47</td></tr>
<tr><td colspan="3">40</td><td colspan="3">45</td></tr>
<tr><td colspan="8">Note 1: N/A = Not Applicable due to non-compliant weather conditions and/or RCM being inaudible or significantly below the noise criteria.</td></tr>
</table>

4.1.4.1 Operator Attended Noise Survey Summary – NM06

RCN operations were inaudible during the night-time noise monitoring survey at this location.

RCS and RCM operations were audible during the night-time noise monitoring survey at this location. RCS and RCM $L_{Aeq(15minute)}$ and $L_{A1(1minute)}$ was estimated to be 40 dBA and 45 dBA, respectively.

Noise from Rix's Creek Mine as well as traffic, insects and noise from dogs contributed to the overall ambient noise environment during the night-time operator attended noise survey at this location.

Due to wind speeds during the monitoring period exceeding 3 m/s during the monitoring period, noise limits are not applicable for this period.

4.1.5 Operator-attended Noise Survey Results – NM07 'Gardiner Circuit'

Results of the operator-attended noise surveys at NM07 are provided in Table 8. Monitoring location NM07 represents residential receptors located to the west of the site.

Table 8 Location NM07

<table>
<tr><th rowspan="2">Date/
Start time/
Weather</th><th colspan="5">Primary Noise Descriptor (dBA re 20 μPa)</th><th rowspan="2">Modifying Factors Applicable</th><th rowspan="2">Description of Noise Emission, Typical Maximum Noise Levels (LAmax – dBA)</th></tr>
<tr><th>LAmax</th><th>LA1</th><th>LA10</th><th>LA90</th><th>LAeq</th></tr>
<tr><td rowspan="11">05/09/2024
23:50
17°C
2.6 m/s NW

WS>3.0 m/s?
No</td><td>45</td><td>40</td><td>38</td><td>32</td><td>34</td><td rowspan="11">No</td><td rowspan="11">Road traffic 33-45
Train 30-39

Rix's Creek: Audible
Pit Noise 30-40
Estimated RCS Contribution LAeq(15min) 34
LA1(1min) 40</td></tr>
<tr><td colspan="3">Estimated Rix's Creek Mine North Noise Contribution</td><td colspan="2">Estimated Rix's Creek Mine South Noise Contribution</td></tr>
<tr><td>LAeq(15min)</td><td>LA1(1min)</td><td>LAeq(15min)</td><td>LA1(1min)</td></tr>
<tr><td>Criteria Limit: 35</td><td>Criteria Limit: 45</td><td>Criteria Limit: 40</td><td>Criteria Limit: 47</td></tr>
<tr><td>Inaudible</td><td>Inaudible</td><td>35</td><td>40</td></tr>
<tr><td colspan="4">Estimated Rix's Creek Mine North EPL Combined Noise Contribution</td></tr>
<tr><td colspan="2">LAeq(15min)</td><td colspan="2">LA1(1min)</td></tr>
<tr><td colspan="2">Criteria Limit: 40</td><td colspan="2">Criteria Limit: 47</td></tr>
<tr><td colspan="2">34</td><td colspan="2">40</td></tr>
<tr><td colspan="8">Note 1: N/A = Not Applicable due to non-compliant weather conditions and/or RCM being inaudible or significantly below the noise criteria.</td></tr>
</table>

4.1.5.1 Operator Attended Noise Survey Summary – NM07

RCN operations were inaudible during the night-time noise monitoring survey at this location.

RCS and RCM operations were audible during the night-time noise monitoring survey at this location. RCS and RCM $L_{Aeq(15minute)}$ and $L_{A1(1minute)}$ was estimated to be 34 dBA and 40 dBA, respectively.

Road and rail traffic noise also contributed to the overall ambient noise environment during the night-time operator attended noise survey at this location.

Low Frequency Measurement Results – NM07

The difference between the L_{Ceq} and L_{Aeq} noise levels from RCS exceeded 15 dB which triggers a more detailed assessment of low frequency noise. Details of the one-third octave RCM contribution is assessed against the NPfI low frequency thresholds is presented in Table 9.

Table 9 Low Frequency Investigation Results – NM07

Hz/dB(Z)	One-third octave $L_{zeq,15min}$												
Frequency (Hz)	10	12.5	16	20	25	31.5	40	50	63	80	100	125	160
Low Frequency Threshold Criteria dB(Z)	92	89	86	77	69	61	54	50	50	48	48	46	44
Site contribution dB(Z)	N/A[2]	56	57	49	51	47	45	44	42	44	40	35	30

Note 1: dB(Z) = decibel (Z frequency weighted)
Note 2: Not Measured.

No one-third octave band exceeded the NPfI low frequency threshold criteria.

As such a low frequency penalty is not applicable to the RCS contribution at this location.

4.1.6 Operator-attended Noise Survey Results – NM08 'Belmadar Way'

Results of the operator-attended noise surveys at NM08 are provided in Table 10. Monitoring location NM08 represents residential receptors located to the south of the site.

Table 10 Location NM08

Date/ Start time/ Weather	Primary Noise Descriptor (dBA re 20 μPa)					Modifying Factors Applicable	Rix's Creek Estimated Contribution LAeq(15minute) dBA LA1(1minute) dBA			Description of Noise Emission, Typical Maximum Noise Levels (LAmax – dBA)
	LAmax	LA1	LA10	LA90	LAeq		RCN	RCS	RCM	
First 06/09/2024 00:17 17°C 2.6 m/s NW **Weather Conditions Valid?** See table note 2	85	63	42	38	44	 Yes (+2dB)	 N/A N/A	 40 **48**	 40 **48**	Train 43-46 Traffic 40-67 **Rix's Creek Audible:** Pit Noise 36-41 Rock Dump 50 **Estimated RCS Contribution** **LAeq(15min) 38** **LA1(1min) 48**
Follow-up 10/09/2024 22:04 14°C 4.1 m/s SE **Weather Conditions Valid?** No, WS>3	54	51	47	36	43	N/A	N/A N/A	33 36	33 36	Insects 24-34 Other Industrial 35-40 Trains 35-54 Traffic 33-42 **Rix's Creek Occasionally Audible:** Track Slap 34 Pit Noise 33-36 **Estimated RCS Contribution** **LAeq(15min) 33** **LA1(1min) 36**
Criteria Limit							**35** **45**	**40** **47**	**40** **47**	

Note 1: N/A = Not Applicable due to non-compliant weather conditions and/or RCM being inaudible or significantly below the noise criteria.

Note 2: Weather conditions during the noise survey included periods of Stability Category F temperature inversion with wind speed >2 m/s as described in L3.4 of EPL 3391. As a result, the applicability of the noise limits for the noise survey is indeterminant.

4.1.6.1 Operator Attended Noise Survey Summary – NM08

RCN operations were inaudible during the night-time noise monitoring survey at this location.

RCS and RCM operations were audible during the night-time noise monitoring survey at this location. RCS and RCM $L_{Aeq(15minute)}$ and $L_{A1(1minute)}$ was estimated to be 38 dBA and 48 dBA, respectively.

Mine-related tracked vehicle noise and a rock dump as well as noise from rail and road traffic also contributed to the overall ambient noise environment during the night-time operator attended noise survey at this location.

Low Frequency Measurement Results – NM08

The difference between the L_{Ceq} and L_{Aeq} noise levels from RCM exceeded 15 dB which triggers a more detailed assessment of low frequency noise. Details of the one-third octave RCS contribution is assessed against the NPfI low frequency thresholds is presented in Table 11.

Table 11 Low Frequency Investigation Results – NM08

Hz/dB(Z)	One-third octave $L_{zeq,15min}$												
Frequency (Hz)	10	12.5	16	20	25	31.5	40	50	63	80	100	125	160
Low Frequency Threshold Criteria dB(Z)	92	89	86	77	69	61	54	50	50	48	48	46	44
Site contribution dB(Z)	N/A[2]	53	52	47	50	49	52	50	47	47	**50**	44	42

Note 1: dB(Z) = decibel (Z frequency weighted)

Note 2: Not Measured.

Note 3: Where any of the one-third octave noise levels are exceeded by up to and including 5 dB, a 2 dB(A) positive adjustment to measured A-weighted levels applies for the evening/night period.

The 100 Hz one-third octave band exceeded the NPfI low frequency threshold criteria by 2 dB.

As such a 2 dB penalty is applicable to the RCS $L_{Aeq(15minute)}$ contribution of 38dBA for a corrected contribution of 40 dBA.

NM08 Noise Monitoring Compliance and Result Acceptance Procedure

A negligible exceedance of the $L_{A1(1minute)}$ criteria of 1 dB was measured during the operator attended noise survey. During the measurement survey it was noted by the operator that the weather conditions were clear and reasonably calm with wind speeds less than 3 m/s. These stable conditions are typical of 'non-standard' weather effects including temperature inversion conditions which may have contributed to the measured exceedance at NM08.

Weather data during the monitoring period as recorded at the Rix's Creek Mine Weather Station site (EPL 3391 ID #11) the weather conditions transitioned from Stability Class E to F class, weather data for 6-09-2024 between 0:00 and 1:00 is provided in Table 12.

Table 12 Rix's Creek Mine Weather Station Data

Time & date (period end)	Wind Speed (m/s)	Wind Direction (°)	Stability Class[1]	10m Temperature (°C)	2m Temperature (°C)	Sigma Theta (°)
0:00	2.5	314	5	16.9	15.8	5.8
0:05	2.3	338	4	16.8	15.8	7.5
0:10	2.4	328	5	16.7	16.0	5.5
0:15	2.7	338	5	16.6	15.2	5.5

Time & date (period end)	Wind Speed (m/s)	Wind Direction (°)	Stability Class[1]	10m Temperature (°C)	2m Temperature (°C)	Sigma Theta (°)
0:20	2.7	329	5	16.4	15.0	5.9
0:25	2.6	335	5	16.3	15.0	4.2
0:30	2.7	328	6	15.9	14.6	3.4
0:35	2.4	337	5	15.6	14.4	5.2
0:40	3.0	332	5	15.5	14.4	4
0:45	3.1	333	5	15.3	14.2	4.4
0:50	2.9	332	5	15.6	14.2	5.6
0:55	3.4	341	5	15.7	14.4	5.2
1:00	3.4	327	5	15.9	14.2	4.7
Note 1: 1=A 2=B 3=C 4=D 5=E 6=F 7=G						

The weather data indicates the presence of temperature inversions during the measurement period with stability classes of both category E and F present at times.

The NPfI notes the following:

> *Note: Atmospheric enhancement of noise propagation is a complex phenomenon that in some cases can be difficult to predict. Regulators should have regard to rare or unusual circumstances when responding to, or considering regulatory action, for a non-compliance with a noise limit.*

As such, noise enhancing conditions outside of the conditions of consent may have been present during the noise survey. As a result, the validity of the negligible 1 dB exceedance of the $L_{A1(1minute)}$ criteria is considered indeterminant and a follow-up measurement was performed during the following week at NM08 with results presented in Table 11.

Follow-up Measurement Results – NM08

RCN operations were inaudible during the follow-up night-time noise monitoring survey at this location on 10/09/2024.

RCS and RCM operations were audible during the night-time noise monitoring survey at this location. RCS and RCM $L_{Aeq(15minute)}$ and $L_{A1(1minute)}$ was estimated to be 33 dBA and 36 dBA, respectively.

Mine-related pit noise and tracked vehicle noise as well as noise from local industry, rail and road traffic and insect noise also contributed to the overall ambient noise environment during the night-time operator attended noise survey at this location.

The results for the follow-up monitoring indicate compliance with the noise criteria at the NM08 monitoring location.

4.2 Compliance Assessment and Discussion of Results

4.2.1 Rix's Creek Mine Noise Compliance

Results of the operational noise compliance assessment are given in Table 13, Table 14, and Table 15.

Table 13 Rix's Creek North Compliance Noise Assessment – Operations

Location		Estimated RCN Contribution		Criteria		Compliance	
		LAeq(15min)	LA1(1min)	LAeq(15min)	LA1(1min)	LAeq(15min)	LA1(1min)
NM03 Moore		<28	29	36	48	Y	Y
NM04 Andrews		30	31	41	47	Y	Y
NM05 Feraro		32	35	37	49	Y	Y
NM06 Bridgman Road		I/A[1]	I/A[1]	40	45	Y	Y
NM07 Gardiner Circuit		I/A[1]	I/A[1]	38	48	Y	Y
NM08 Belmadar Way	1st Measurement	I/A[1]	I/A[1]	35	45	Y	Y
	Follow-up Measurement	I/A[1]	I/A[1]			Y	Y
Note 1: I/A – Inaudible							

Table 14 Rix's Creek South Compliance Noise Assessment – Operations

Location		Estimated RCS Contribution		Criteria		Compliance	
		LAeq(15min)	LA1(1min)	LAeq(15min)	LA1(1min)	LAeq(15min)	LA1(1min)
NM03 Moore		I/A[1]	I/A[1]	42	47	Y	Y
NM04 Andrews		I/A[1]	I/A[1]	42	47	Y	Y
NM05 Feraro		I/A[1]	I/A[1]	42	47	Y	Y
NM06 Bridgman Road		40	45	40	45	Y	Y
NM07 Gardiner Circuit		34	40	40	47	Y	Y
NM08 Belmadar Way	1st Measurement	40[2]	**48**	40	47	Y	I/D[3]
	Follow-up Measurement	33	36			Y	Y

Note 1: I/A – Inaudible
Note 2: Including a Modifying Factor of 2dB(A) due to Low Frequency Noise.
Note 3: I/D – Indeterminant result

Table 15 Rix's Creek Mine Combined Compliance Noise Assessment – Operations

Location		Estimated RCM Contribution		Criteria		Compliance	
		LAeq(15min)	LA1(1min)	LAeq(15min)	LA1(1min)	LAeq(15min)	LA1(1min)
NM03 Moore		<28	29	42	47	Y	Y
NM04 Andrews		30	31	41	47	Y	Y
NM05 Feraro		32	35	37	47	Y	Y
NM06 Bridgman Road		40	45	40	45	Y	Y
NM07 Gardiner Circuit		34	40	40	47	Y	Y
NM08 Belmadar Way	1st Measurement	40[2]	**48**	40	47	Y	I/D[3]
	Follow-up Measurement	33	36			Y	Y

Note 1: I/A – Inaudible
Note 2: Including a Modifying Factor of 2 dB(A) due to Low Frequency Noise.
Note 3: I/D – Indeterminant result

4.2.2 Discussion of Results

Results presented in Table 13, Table 14 and Table 15 indicate that noise levels from RCM complied with relevant criteria at all monitoring locations during the September 2024 monitoring survey.

5.0 Conclusion

SLR was engaged by Bloomfield Colliery Pty Limited to conduct monthly night time noise monitoring for the Rix's Creek Mine operations guided by the requirements of the Environment Protection License 3391, Rix's Creek Mine Noise Management Plan, Rix's Creek North Project Approval PA 08_0102 and Rix's Creek South Development Consent SSD 6300.

Operator-attended noise monitoring was conducted at six residential receiver locations on Thursday 5 September 2024 and Friday 6 September 2024 2024 in order to determine the noise of the Rix's Creek Mine operations against the EPL 3391 and relevant Development Consent conditions.

Based on the measured Rix's Creek Mine noise contribution, compliance with the relevant noise limits were achieved at all noise monitoring locations for Rix's Creek North and Rix's Creek South under applicable weather conditions.

Appendix A Acoustic Terminology

Rix's Creek Mine

Monthly Compliance Monitoring – September 2024

Bloomfield Collieries

SLR Project No.: 630.12841.00000

3 October 2024

1. Sound Level or Noise Level

The terms 'sound' and 'noise' are almost interchangeable, except that 'noise' often refers to unwanted sound.

Sound (or noise) consists of minute fluctuations in atmospheric pressure. The human ear responds to changes in sound pressure over a very wide range with the loudest sound pressure to which the human ear can respond being ten million times greater than the softest. The decibel (abbreviated as dB) scale reduces this ratio to a more manageable size by the use of logarithms.

The symbols SPL, L or LP are commonly used to represent Sound Pressure Level. The symbol LA represents A-weighted Sound Pressure Level. The standard reference unit for Sound Pressure Levels expressed in decibels is 2×10^{-5} Pa.

2. 'A' Weighted Sound Pressure Level

The overall level of a sound is usually expressed in terms of dBA, which is measured using a sound level meter with an 'A-weighting' filter. This is an electronic filter having a frequency response corresponding approximately to that of human hearing.

People's hearing is most sensitive to sounds at mid frequencies (500 Hz to 4,000 Hz), and less sensitive at lower and higher frequencies. Different sources having the same dBA level generally sound about equally loud.

A change of 1 dB or 2 dB in the level of a sound is difficult for most people to detect, whilst a 3 dB to 5 dB change corresponds to a small but noticeable change in loudness. A 10 dB change corresponds to an approximate doubling or halving in loudness. The table below lists examples of typical noise levels.

Sound Pressure Level (dBA)	Typical Source	Subjective Evaluation
130	Threshold of pain	Intolerable
120	Heavy rock concert	Extremely noisy
110	Grinding on steel	
100	Loud car horn at 3 m	Very noisy
90	Construction site with pneumatic hammering	
80	Kerbside of busy street	Loud
70	Loud radio or television	
60	Department store	Moderate to quiet
50	General Office	
40	Inside private office	Quiet to very quiet
30	Inside bedroom	
20	Recording studio	Almost silent

Other weightings (eg B, C and D) are less commonly used than A-weighting. Sound Levels measured without any weighting are referred to as 'linear', and the units are expressed as dB(lin) or dB.

3. Sound Power Level

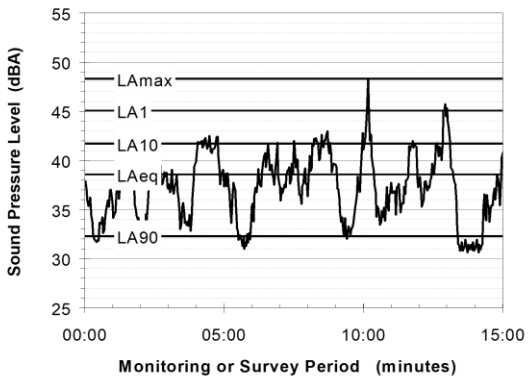
The Sound Power of a source is the rate at which it emits acoustic energy. As with Sound Pressure Levels, Sound Power Levels are expressed in decibel units (dB or dBA), but may be identified by the symbols SWL or LW, or by the reference unit 10^{-12} W.

The relationship between Sound Power and Sound Pressure is similar to the effect of an electric radiator, which is characterised by a power rating but has an effect on the surrounding environment that can be measured in terms of a different parameter, temperature.

4. Statistical Noise Levels

Sounds that vary in level over time, such as road traffic noise and most community noise, are commonly described in terms of the statistical exceedance levels L_{AN}, where L_{AN} is the A-weighted sound pressure level exceeded for N% of a given measurement period. For example, the L_{A1} is the noise level exceeded for 1% of the time, L_{A10} the noise exceeded for 10% of the time, and so on.

The following figure presents a hypothetical 15 minute noise survey, illustrating various common statistical indices of interest.



Of particular relevance, are:

L_{A1} The noise level exceeded for 1% of the 15 minute interval.

L_{A10} The noise level exceeded for 10% of the 15 minute interval. This is commonly referred to as the average maximum noise level.

L_{A90} The noise level exceeded for 90% of the sample period. This noise level is described as the average minimum background sound level (in the absence of the source under consideration), or simply the background level.

L_{Aeq} The A-weighted equivalent noise level (basically, the average noise level). It is defined as the steady sound level that contains the same amount of acoustical energy as the corresponding time-varying sound.

5. Frequency Analysis

Frequency analysis is the process used to examine the tones (or frequency components) which make up the overall noise or vibration signal.

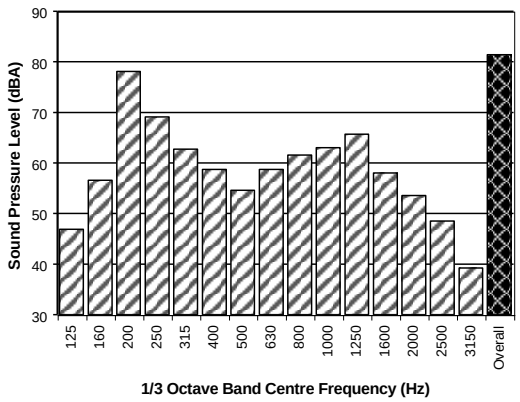
The units for frequency are Hertz (Hz), which represent the number of cycles per second.

Frequency analysis can be in:

- Octave bands (where the centre frequency and width of each band is double the previous band)
- 1/3 octave bands (three bands in each octave band)

Narrow band (where the spectrum is divided into 400 or more bands of equal width)

The following figure shows a 1/3 octave band frequency analysis where the noise is dominated by the 200 Hz band. Note that the indicated level of each individual band is less than the overall level, which is the logarithmic sum of the bands.



6. Annoying Noise (Special Audible Characteristics)

A louder noise will generally be more annoying to nearby receivers than a quieter one. However, noise is often also found to be more annoying and result in larger impacts where the following characteristics are apparent:

- **Tonality** - tonal noise contains one or more prominent tones (ie differences in distinct frequency components between adjoining octave or 1/3 octave bands), and is normally regarded as more annoying than 'broad band' noise.
- **Impulsiveness** - an impulsive noise is characterised by one or more short sharp peaks in the time domain, such as occurs during hammering.
- **Intermittency** - intermittent noise varies in level with the change in level being clearly audible. An example would include mechanical plant cycling on and off.
- **Low Frequency Noise** - low frequency noise contains significant energy in the lower frequency bands, which are typically taken to be in the 10 to 160 Hz region.

Appendix B Rix's Creek North – PA 08_0102 – Schedule 3

Rix's Creek Mine

Monthly Compliance Monitoring – September 2024

Bloomfield Collieries

SLR Project No.: 630.12841.00000

3 October 2024

NOISE

Noise Criteria

2. Except for the land referred to in Table 1 for which the acquisition basis is noise, the Applicant must ensure that the noise generated by the project does not exceed the criteria in Table 2 at any residence on privately-owned land or on more than 25 percent of any privately-owned land.

Table 2: Noise criteria dB(A)

Location		Day	Evening	Night	
		$L_{Aeq(15min)}$	$L_{Aeq(15min)}$	$L_{Aeq(15min)}$	$L_{A1(1min)}$
NAG 3	All privately-owned land	40	40	39	49
NAG 4	99, 100	39	39	39	47
	88, 91, 95	40	40	40	47
	105, 161	41	41	41	47
	All other privately-owned land	42	42	37	47
NAG 5	104	35	35	35	52
	139	36	36	36	52
	103	37	37	37	52
	121	40	40	40	52
	All other privately-owned land	50	46	42	52

Location		Day	Evening	Night	
		$L_{Aeq(15min)}$	$L_{Aeq(15min)}$	$L_{Aeq(15min)}$	$L_{A1(1min)}$
NAG 6	137	35	35	35	48
	133	37	37	37	48
	132	38	38	38	48
	All other privately-owned land	41	41	38	48
NAG 7	All privately-owned land	45	42	39	49
NAG 8	142	35	35	35	45
	All other privately-owned land	42	42	35	45
NAG 9	146, 148, 149	35	35	35	48
	143, 144, 145, 147, 150, 151, 152	36	36	36	48
	2	37	37	37	48
	3, 4	39	39	39	48
	All other privately-owned land	40	40	38	48
NAG 10	5	40	40	40	47
	6	41	41	41	47
	8	42	42	42	47
	All other privately-owned land	39	39	37	47
NAG 11	18	35	35	35	49
	20, 21	37	37	36	49
	19	37	37	37	49
	17	38	38	38	49
	7	39	39	39	49
	12, 15	40	40	40	49
	14, 16	42	42	42	49
	All other privately-owned land	41	41	39	49
NAG 12	52	35	35	35	45
	51	37	37	37	45
	53	38	38	38	45
	50, 54	39	39	39	45
	62	40	40	40	45
	All other privately-owned land	38	38	35	45
NAG A	24, 25, 26, 27, 28, 29, 30, 36, 37, 38, 39, 40, 41	35	35	35	46
	31	36	36	35	46
	42, 43	36	36	36	46
	32	37	37	35	46
	22, 23	37	37	37	46
	34	39	39	36	46
	35	39	39	35	46
	All other privately-owned land	39	39	36	46
NAG C	All other privately-owned land	37	37	35	45
NAG D	44, 48	36	36	36	48
	49	39	39	39	48
	All other privately-owned land	40	40	38	48

Notes:
- *All land located within NAG 1, NAG 2, NAG B and NAG G is now mine-owned.*

However, these criteria do not apply if the Applicant, or another mining company, has acquired the land or if the Applicant has a written agreement with the relevant landowner to exceed the criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

Noise generated by the project is to be measured in accordance with the relevant requirements of the INP. Appendix 5 sets out the requirements for evaluating compliance with these criteria.

Note: To interpret the locations referred to in Table 2, see the applicable figures in Appendix 4.

3. Deleted

Table 3: Deleted

Cumulative Noise Criteria

4. The Applicant must implement all reasonable and feasible measures to ensure that the noise generated by the project combined with the noise generated by other mines in the vicinity does not exceed the criteria in Table 4 at any residence on privately-owned land or on more than 25 percent of any privately-owned land (except for the residential receivers in Table 1 for which the acquisition basis is noise). The Applicant must share the costs associated with implementing these measures on as equitable basis as possible with the relevant mines.

Table 4: Cumulative noise criteria dB(A) $L_{Aeq\ (period)}$

Location	Day	Evening	Night
NAGs 4, 5, 8 and 9	55	45	40
All other privately-owned land	50	45	40

Cumulative noise is to be measured in accordance with the relevant requirements of the INP. Appendix 5 sets out the requirements for evaluating compliance with these criteria.

For the purposes of this condition, 'reasonable and feasible avoidance and mitigation measures' includes, but is not limited to, the requirements in conditions 9 and 10 to develop and implement a real-time noise management system that ensures effective operational response to the risk of exceedance of the criteria.

Note: To identify the locations referred to in Table 4, see the figures in Appendix 4.

5. Deleted

Table 5: Deleted

5. Deleted

Table 5: Deleted

Additional Noise Mitigation Measures

6. Upon receiving a written request from the owner of any residence:
(a) on the land listed in Table 1 for which the acquisition basis is noise; or
(b) on land listed in Table 6,
the Applicant must implement additional noise mitigation measures (such as double-glazing, insulation, and/or air conditioning) at the residence in consultation with the landowner.

If within 3 months of receiving this request from the owner, the Applicant and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

Table 6: Land where additional noise mitigation measures are available on request

5 – D P Cox	6 – W G Cox

8 – DK Geelan	16 – A Lambkin
14 – M Hoggan	31 – C Craven
20 – Mr Garvie	48 - G Cheetham
32 – M Langdon	50 – D & M Bridge
53 – K & J Badior	54 – G Holmes
62 – D Moran	95 – J & T Clarke
91 – T & D Olofsson	161 – V Lopes
105 – J & G McInerney	363 – D & L Bynon

Notes:

- *To interpret the locations referred to in Table 6, see the applicable figures in Appendix 4.*

Table 7: Deleted

7. Deleted

Table 8: Deleted

Rail Noise

8. The Applicant must seek to ensure that its rail spur is only accessed by locomotives that are approved to operate on the NSW rail network in accordance with noise limits L6.1 to L6.4 in RailCorp's EPL (No. 12208) and ARTC's EPL (No. 3142) or a Pollution Control Approval issued under the former *Pollution Control Act 1970*.

Operating Conditions

9. The Applicant must:
   (a) implement best practice noise management, including all reasonable and feasible noise mitigation measures, to minimise the operational, low frequency, and rail noise generated by the project at all times, including during temperature inversions;
   (b) operate a comprehensive noise management system that uses a combination of predicted meteorological forecasting and real-time noise monitoring data to guide the day-to-day planning of mining operations and the implementation of both proactive and reactive mitigation measures to ensure compliance with the relevant conditions of this consent;
   (c) maintain or improve the effectiveness of noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired;
   (d) ensure that noise attenuated plant is deployed preferentially in locations relevant to sensitive receivers;
   (e) minimise the noise impacts of the project during meteorological conditions under which data is to be excluded for the purposes of assessing compliance with these conditions (see Appendix 5); and
   (f) co-ordinate the noise management on site with noise management at nearby mines (including Integra Underground, Ashton, Rix's Creek South and the Mount Owen Complex) to minimise cumulative noise impacts,

   to the satisfaction of the Secretary.

Noise Management Plan

10. The Applicant must prepare a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must:
    (a) be prepared in consultation with the EPA, and then submitted to the Secretary for approval;
    (b) describe the measures that would be implemented to ensure:
        - compliance with the noise criteria and operating conditions of this consent; and
        - best management practice is being employed;
    (c) describe the noise management system in detail;
    (d) include a noise monitoring program that:
        - uses a combination of real-time and supplementary attended monitoring measures to evaluate the performance of the project;
        - includes a protocol for determining exceedances of the relevant conditions in this consent;
        - evaluates and reports on the effectiveness of the noise management system and the best practice noise management measures; and
    (e) includes a protocol that has been prepared in consultation with the owners of nearby mines (including Integra Underground, Ashton, Rix's Creek South and the Mount Owen Complex) to minimise the cumulative noise impacts of the mines.

Appendix C Rix's Creek South – SSD 6300 – Schedule 2 Part B

Rix's Creek Mine

Monthly Compliance Monitoring – September 2024

Bloomfield Collieries

SLR Project No.: 630.12841.00000

3 October 2024

PART B SPECIFIC ENVIRONMENTAL CONDITIONS

NOISE

Operational Noise Criteria

B1. The Applicant must ensure that the noise generated by the development does not exceed the criteria in Table 1 at any residence[a] on privately-owned land, excluding the noise-affected land referred to in Table 7.

Table 1: *Operational noise criteria dB(A)*

NAG	Day/Evening/Night	Night
	$L_{Aeq\ (15\ min)}$	$L_{A1\ (1\ min)}$
A – C	42	47
D – O	40	47
All other privately-owned residences	35	45

[a] *The NAGs referred to in Table 1 are shown in Appendix 3.*

B2. Noise generated by the development must be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the *NSW Industrial Noise Policy* (EPA, 2000). **Error! Reference source not found.** sets out the meteorological conditions under which these criteria apply and the requirements for evaluating compliance with these criteria.

B3. The noise criteria in Table 1 do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

APPENDIX 4 NOISE COMPLIANCE ASSESSMENT

Applicable Meteorological Conditions

1. The noise criteria in condition B1 are to apply under all meteorological conditions except the following:
   - (a) where 3°C/100 metres (m) lapse rates have been assessed, then:
     - (i) wind speeds greater than 3 metres/second (m/s) measured at 10m above ground level;
     - (ii) temperature inversion conditions between 1.5°C and 3°C/100m and wind speeds greater than 2m/s measured at 10m above ground level; or
     - (iii) temperature inversion conditions greater than 3°C/100m.
   - (b) where Pasquill Stability Classes have been assessed, then:
     - (i) wind speeds greater than 3m/s at 10m above ground level;
     - (ii) stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or
     - (iii) stability category G temperature inversion conditions.

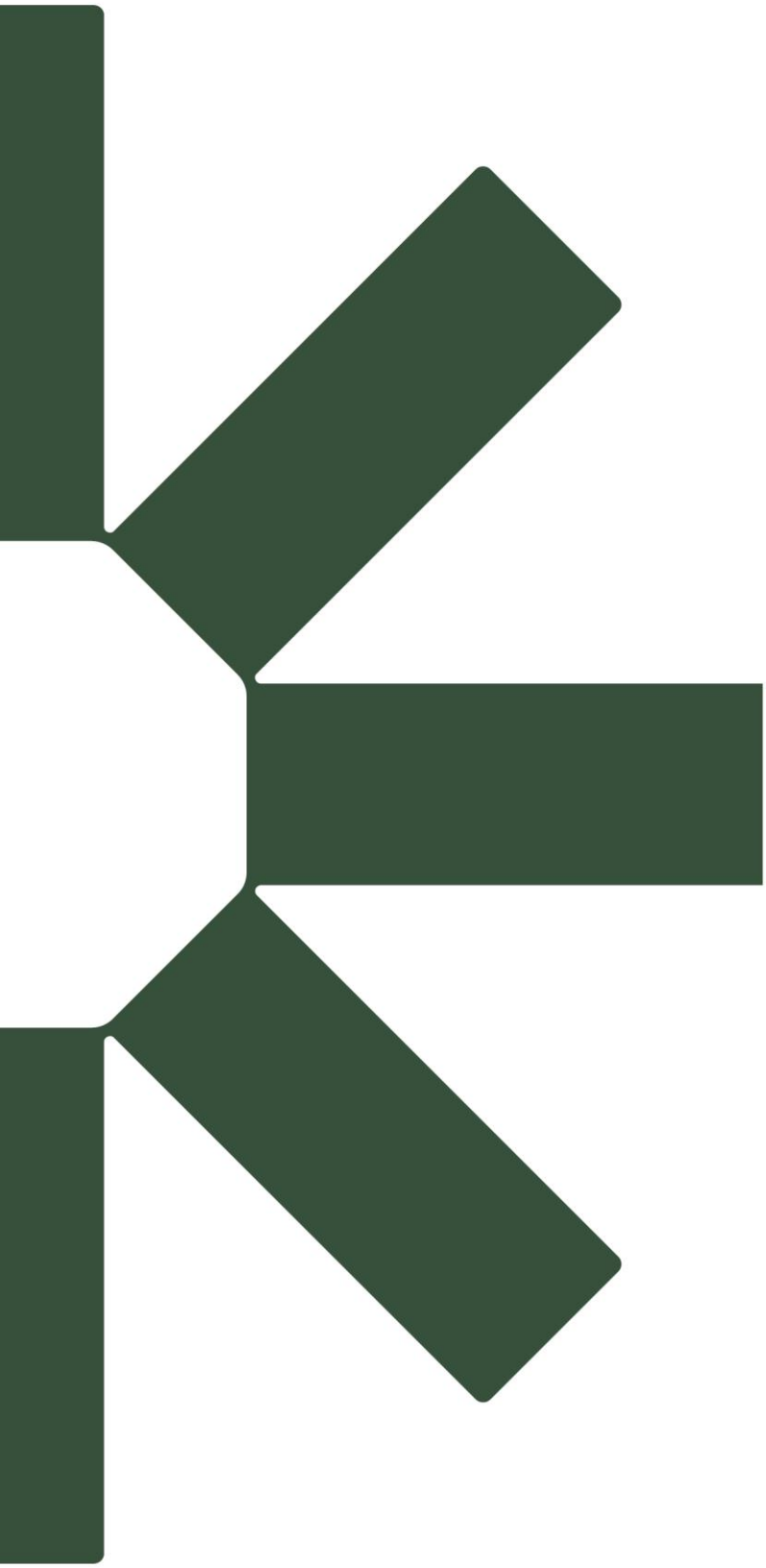
Determination of Meteorological Conditions

2. Except for wind speed at microphone height, the data to be used for determining meteorological conditions shall be that recorded by the meteorological station required under condition B28.

Compliance Monitoring

3. Unless otherwise agreed by the Planning Secretary, the attended compliance monitoring must be carried out in accordance with the relevant requirements for reviewing performance set out in the *NSW Industrial Noise Policy* (EPA, 2000), in particular the requirements relating to:
   - (a) monitoring locations for the collection of representative noise data;
   - (b) meteorological conditions during which collection of noise data is not appropriate;
   - (c) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; and
   - (d) modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration,

   with the exception of applying appropriate modifying factors for low frequency noise during compliance testing. This should be undertaken in accordance with Fact Sheet C of the *NSW Noise Policy for Industry* (EPA, 2017).



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