Monthly Noise Monitoring Assessment

Tomingley Gold Mine
April 2025

Prepared for: Tomingley Gold Operations Pty Ltd
April 2025
MAC160270-2025RP04

Muller Acoustic Consulting

Document Information

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Prepared for: Tomingley Gold Operations Pty Ltd

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1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by Tomingley Gold Operations Pty Ltd (TGO) to complete a Noise Monitoring Assessment (NMA) for Tomingley Gold Mine (the mine), Tomingley, NSW.

The NMA involved quantifying the noise contribution of the mine by direct attended measurements to determine mining noise emissions so that effective management and controls can be implemented where required. The monitoring has been conducted in accordance with the TGO Noise Management Plan and in general accordance with Conditions L4.2 to L4.7 of the EPL at six representative receiver locations. It is noted that this assessment has been completed as part of an internal noise management initiative and does not form part of the annual noise monitoring program to address conditions of the Environmental Protection License (EPL).

The assessment has been conducted in accordance with the following documents:

- NSW Environment Protection Authority (EPA), Noise Policy for Industry (NPI), 2017;
- NSW Environment Protection Authority (EPA), Approved Methods for the measurement and analysis of environmental noise in NSW, 2022;
- NSW Environment Protection Authority (EPA), Environment Protection Licence # 20169 (EPL);
- Standards Australia AS/NZS IEC 61672.1-2019-Electroacoustics - Sound level meters – Specifications; and
- Standards Australia AS 1055:2018 - Acoustics - Description and measurement of environmental noise - General Procedures.

A glossary of terms, definitions and abbreviations used in this report is provided in **Appendix A**.

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2 Environmental Protection License Noise Limits

Historic Noise Assessments for the mine categorise receivers into Noise Assessment Groups (NAGs). The NAGs were derived based on ambient noise data that controlled receiver RBLs.

Table 1 reproduces the operational and sleep disturbance noise limits for assessed receivers referenced from the EPL that have been adopted for this NMA and are consistent with historic EPL monitoring locations.

Table 1 Noise Limits, dBA

Noise Assessment Group	Receivers	Day	Evening	Night	
		$L_{Aeq(15min)}$	$L_{Aeq(15min)}$	$L_{Aeq(15min)}$	$L_{A1(1min)}$
NAG A	R4, R5, R6	35	35	35	45
NAG B	R2	36	35	35	45
NAG C	R3/29	45	35	35	45
NAG D	R23	43	38	36	45

Note: Refer to figure in Appendix 4 of Project Approval 09-0155 for noise locations. However, these criteria do not apply if the Proponent has an agreement with the relevant owner(s) of these residences / land to generate higher noise levels, and the Proponent has advised the Department of Planning and Infrastructure and EPA in writing of the terms of this agreement.

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3 Methodology

3.1 Locality

TGO is located to the south of the village of Tomingley, NSW. Receivers in the locality surrounding the mine are primarily rural/residential and for consistency the naming conventions for each receiver have been retained from historic Noise Assessments. The monitoring locations with respect to the mine are presented in the locality plan shown in **Figure 1**.

3.2 Assessment Methodology

The attended noise survey was conducted in general accordance with the procedures described in Standards Australia AS 1055:2018, "Acoustics - Description and Measurement of Environmental Noise" and the EPL. Measurements were carried out using a Svantek Type 1, 971 noise analyser between Monday 7 April 2025 and Wednesday 9 April 2025. The acoustic instrumentation used carries appropriate and current NATA (or manufacturer) calibration certificates with records of all calibrations maintained by MAC as per Approved Methods for the measurement and analysis of environmental noise in NSW (EPA, 2022) and complies with AS/NZS IEC 61672.1-2019-Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed ±0.5dBA.

Both evening and night measurements were of 15-minutes in duration. Where possible, throughout each survey the operator quantified the contribution of each significant noise source. Extraneous noise sources were excluded from the analysis to calculate the $LA_{eq(15min)}$ mine noise contribution for comparison against the relevant EPL limit.

Prevailing meteorological conditions for the monitoring period were sourced from TGO's on-site meteorological station and analysed in accordance with Appendix D1 of the NPI to determine the stability category present at the time of each measured sample. This was undertaken to determine applicability of results in accordance with Condition L4.3 of the EPL. Results obtained during non-prevailing meteorological conditions (ie F Class Stability in conjunction with a 2m/s drainage or G Class Stability) are considered not applicable against the EPL criteria.

FIGURE 1

LOCALITY PLAN

MAC160270

Tomingley Gold Operations

KEY

- Receivers
- Brooklands
- TGO Boundary

0 300 600 900 1200 1500 m

N

MAC
Muller Acoustic Consulting

4 Results

The monitoring and assessment results are presented in individual tables for each assessment location.

4.1 Meteorological Conditions

Weather data for the noise assessment was sourced from TGOs on-site meteorological station as well as operator measured conditions on site of EPL nominated receiver locations. The data was used to determine prevailing meteorological conditions at the time of the attended measurements, which are presented in **Table 2**.

Table 2 Prevailing Meteorological Conditions

Date & Time	TGO on-site Meteorological Station (10m AGL)		Operator Measured Weather Monitoring Location (1.8m AGL)	
	Wind Direction	Wind (m/s)	Wind Direction	Wind (m/s)
19:45 07/04/2025	WSW	1.4	SW	0.2
20:06 07/04/2025	SW	0.5	SW	0.2
20:29 07/04/2025	SSW	0.6	SW	0.2
20:51 07/04/2025	WSW	0.6	SW	0.2
21:08 07/04/2025	ENE	0.2	SW	0.2
21:35 07/04/2025	N	0.8	SW	0.2
22:00 07/04/2025	WSW	0.8	SW	0.2
22:20 07/04/2025	WSW	1.1	SW	0.2
22:38 07/04/2025	SW	0.5	SW	0.2
23:00 07/04/2025	SW	0.7	SW	0.2
23:24 07/04/2025	SSW	0.9	SW	0.2
23:45 07/04/2025	SSE	0.3	SW	0.2
19:43 08/04/2025	SE	3.1	SE	0.1
20:05 08/04/2025	SSE	2.3	SE	0.1
20:27 08/04/2025	E	1.8	SE	0.1
20:48 08/04/2025	S	2.2	SE	0.1
21:06 08/04/2025	ESE	1.3	SE	0.1
21:31 08/04/2025	E	1.8	SE	0.1
22:00 08/04/2025	ENE	2.7	SE	0.1
22:20 08/04/2025	E	2.6	SE	0.1
22:37 08/04/2025	ENE	1.5	SE	0.1
22:59 08/04/2025	NE	5.8	SE	0.1
23:23 08/04/2025	NE	2.8	SE	0.1
23:43 08/04/2025	NE	3.4	SE	0.1
19:42 09/04/2025	NNE	1.0	NE	0.1
20:06 09/04/2025	E	2.8	NE	0.1
20:29 09/04/2025	ENE	3.7	NE	0.1
20:51 09/04/2025	E	3.4	NE	0.1
21:08 09/04/2025	E	3.1	NE	0.1
21:31 09/04/2025	ENE	3.2	NE	0.1
22:00 09/04/2025	ENE	3.1	NE	0.1
22:20 09/04/2025	E	4.6	NE	0.1
22:38 09/04/2025	ENE	3.3	NE	0.1
22:59 09/04/2025	ENE	3.4	NE	1.5
23:23 09/04/2025	E	3.5	NE	2.0
23:43 09/04/2025	ENE	4.6	NE	1.5

4.2 Assessment Results - Location R2

The results of the attended noise measurements at location R2 for the April 2025 survey are summarised in **Table 3** with the relevant EPL limits, the calculated mining noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 3 Operator-Attended Noise Survey Results - Location R2

Date	Time (hrs)	Descriptor (dBA re 20µPa)			EPL	Meteorology[1]	Description and SPL, dBA
		L_{Amax}	L_{Aeq}	L_{A90}	Limit		
07/04/2025	21:35 (Evening)	54	32	24	35	WD: SW WS: 0.2m/s Stab Class: F	Insects 22-28 Traffic 30-38 Bats 32-40 Livestock 31-54 TGO hum 23-35
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
07/04/2025	22:00 (Night)	62	31	26	35	WD: SW WS: 0.2m/s Stab Class: F	Insects 23-26 Livestock 24-62 Traffic <23 TGO hum 24-34
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
08/04/2025	21:31 (Evening)	64	31	21	35	WD: SE WS: 0.1m/s Stab Class: D	Insects <20 Bats 30-64 Birds 26-45 TGO hum 18-25
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
08/04/2025	22:00 (Night)	43	25	19	35	WD: SE WS: 0.1m/s Stab Class: E	Insects <20 Livestock 25-43 TGO hum 16-24
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
09/04/2025	21:31 (Evening)	71	46	36	35	WD: NE WS: 0.1m/s Stab Class: E	Insects 35-39 Dogs barking 37-43 Traffic 38-71 TGO hum <35
		TGO Site $L_{Aeq(15min)}$ Contribution					<35
09/04/2025	22:00 (Night)	58	39	37	35	WD: NE WS: 0.1m/s Stab Class: E	Insects 35-39 Traffic 37-58 TGO hum <33
		TGO Site $L_{Aeq(15min)}$ Contribution					<35

Note 1: Meteorological data obtained from TGO's on-site weather station or by direct measurement by the operator.

4.3 Assessment Results - Location R3/29

The results of the attended noise measurements at location R3/29 for the April 2025 survey are summarised in **Table 4** with the relevant EPL limits, the calculated mining noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 4 Operator-Attended Noise Survey Results - Location R3/29

Date	Time (hrs)	Descriptor (dBA re 20μPa)			EPL Limit	Meteorology[1]	Description and SPL, dBA
		L_{Amax}	L_{Aeq}	L_{A90}			
07/04/2025	20:51 (Evening)	86	66	43	35	WD: SW WS: 0.2m/s Stab Class: E	Traffic 39-86 Bats <40 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<33
07/04/2025	22:38 (Night)	83	63	41	35	WD: SW WS: 0.2m/s Stab Class: D	Traffic 38-83 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<31
08/04/2025	20:48 (Evening)	84	65	35	35	WD: SE WS: 0.1m/s Stab Class: E	Traffic 29-84 Birds 35-51 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
08/04/2025	22:37 (Night)	84	65	39	35	WD: SE WS: 0.1m/s Stab Class: E	Traffic 35-84 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
09/04/2025	20:51 (Evening)	83	63	39	35	WD: NE WS: 0.1m/s Stab Class: E	Traffic 36-83 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
09/04/2025	22:38 (Night)	87	64	36	35	WD: NE WS: 0.1m/s Stab Class: E	Traffic 33-87 Dogs barking <30 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30

Note 1: Meteorological data obtained from TGO's on-site weather station or by direct measurement by the operator.

4.4 Assessment Results - Location R4

The results of the attended noise measurements at location R4 for the April 2025 survey are summarised in **Table 5** with the relevant EPL limits, the calculated mining noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 5 Operator-Attended Noise Survey Results - Location R4

Date	Time (hrs)	Descriptor (dBA re 20µPa)			EPL Limit	Meteorology[1]	Description and SPL, dBA
		L_{Amax}	L_{Aeq}	L_{A90}			
07/04/2025	20:06 (Evening)	61	34	26	35	WD: SW WS: 0.2m/s Stab Class: D	Traffic 24-33 Livestock 24-40 Operator 40-61 Offsite drilling <25 TGO inaudible
TGO Site $L_{Aeq(15min)}$ Contribution							<30
07/04/2025	23:24 (Night)	68	32	19	35	WD: SW WS: 0.1m/s Stab Class: D	Livestock 24-40 Traffic 22-43 Operator 30-68 TGO inaudible
TGO Site $L_{Aeq(15min)}$ Contribution							<30
08/04/2025	20:05 (Evening)	61	32	19	35	WD: SE WS: 0.1m/s Stab Class: E	Traffic 20-61 Insects 17-24 TGO inaudible
TGO Site $L_{Aeq(15min)}$ Contribution							<30
08/04/2025	23:23 (Night)	72	35	25	35	WD: SE WS: 0.1m/s Stab Class: E	Insects 23-31 Traffic 25-37 Operator 72 TGO inaudible
TGO Site $L_{Aeq(15min)}$ Contribution							<30
09/04/2025	20:06 (Evening)	64	34	30	35	WD: NE WS: 0.1m/s Stab Class: E	Birds 41-64 Insects 28-31 Traffic 30-42 TGO inaudible
TGO Site $L_{Aeq(15min)}$ Contribution							<30
09/04/2025	23:23 (Night)	57	45	42	35	WD: NE WS: 2.0m/s Stab Class: E	Wind in trees 40-57 Insects <35 TGO inaudible
TGO Site $L_{Aeq(15min)}$ Contribution							<32

Note 1: Meteorological data obtained from TGO's on-site weather station or by direct measurement by the operator.

4.5 Assessment Results - Location R5

The results of the attended noise measurements at location R5 for the April 2025 survey are summarised in **Table 6** with the relevant EPL limits, the calculated mining noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 6 Operator-Attended Noise Survey Results - Location R5

Date	Time (hrs)	Descriptor (dBA re 20µPa)			EPL Limit	Meteorology[1]	Description and SPL, dBA
		L_{Amax}	L_{Aeq}	L_{A90}			
07/04/2025	19:45 (Evening)	82	63	37	35	WD: SW WS: 0.2m/s Stab Class: E	Traffic 35-82 Insects <33 Offsite works 33-37 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
07/04/2025	23:45 (Night)	81	63	38	35	WD: SW WS: 0.2m/s Stab Class: F	Traffic 39-81 Offsite works 37-41 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
08/04/2025	19:43 (Evening)	81	63	26	35	WD: SE WS: 0.1m/s Stab Class: E	Traffic 26-81 Insects 23-27 Offsite works <25 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
08/04/2025	23:43 (Night)	81	62	28	35	WD: SE WS: 0.1m/s Stab Class: E	Traffic 28-81 Offsite works 25-33 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
09/04/2025	19:42 (Evening)	85	67	33	35	WD: NE WS: 0.1m/s Stab Class: F	Traffic 32-85 Insects 30-34 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
09/04/2025	23:43 (Night)	82	63	39	35	WD: NE WS: 1.5m/s Stab Class: D	Traffic 37-82 Wind in trees 36-52 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30

Note 1: Meteorological data obtained from TGO's on-site weather station or by direct measurement by the operator.

4.6 Assessment Results - Location R6

The results of the attended noise measurements at location R6 for the April 2025 survey are summarised in **Table 7** with the relevant EPL limits, the calculated mining noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 7 Operator-Attended Noise Survey Results - Location R6

Date	Time (hrs)	Descriptor (dBA re 20µPa)			EPL Limit	Meteorology[1]	Description and SPL, dBA
		L_{Amax}	L_{Aeq}	L_{A90}			
07/04/2025	20:29 (Evening)	56	31	24	35	WD: SW WS: 0.2m/s Stab Class: E	Insects 21-25 Traffic 22-40 Operator 35-56 Livestock 24-37 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
07/04/2025	23:00 (Night)	68	37	28	35	WD: SW WS: 0.2m/s Stab Class: E	Traffic 24-44 Operator 28-68 Bats 25-34 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
08/04/2025	20:27 (Evening)	44	26	21	35	WD: SE WS: 0.1m/s Stab Class: E	Traffic 22-44 Insects 17-21 Bats 24-28 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
08/04/2025	22:59 (Night)	64	36	19	35	WD: SE WS: 0.1m/s Stab Class: D	Traffic 15-41 Aircraft 20-54 Operator 21-64 TGO hum 15-35
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
09/04/2025	20:29 (Evening)	63	34	26	35	WD: NE WS: 0.1m/s Stab Class: E	Insects 24-27 Dogs barking <25 Traffic 26-44 Operator 40-63 TGO hum 27-33
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
09/04/2025	22:59 (Night)	53	36	33	35	WD: NE WS: 1.5m/s Stab Class: E	Insects 31-36 Traffic 35-44 Wind in trees 33-42 Bats 38-53 TGO hum <33
		TGO Site $L_{Aeq(15min)}$ Contribution					<33

Note 1: Meteorological data obtained from TGO's on-site weather station or by direct measurement by the operator.

4.7 Assessment Results - Location R23

The results of the attended noise measurements at location R23 for the April 2025 survey are summarised in **Table 8** with the relevant EPL limits, the calculated mining noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 8 Operator-Attended Noise Survey Results - Location R23

Date	Time (hrs)	Descriptor (dBA re 20µPa)			EPL Limit	Meteorology[1]	Description and SPL, dBA
		L_{Amax}	L_{Aeq}	L_{A90}			
07/04/2025	21:08 (Evening)	57	44	36	38	WD: SW WS: 0.2m/s Stab Class: F	Traffic 34-57 Insects <32 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
07/04/2025	22:20 (Night)	63	49	41	36	WD: SW WS: 0.2m/s Stab Class: E	Traffic 39-63 Dogs barking 40-54 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<31
08/04/2025	21:06 (Evening)	56	44	34	38	WD: SE WS: 0.1m/s Stab Class: F	Traffic 33-56 Insects <32 Dogs barking 32-37 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
08/04/2025	22:20 (Night)	60	45	37	36	WD: SE WS: 0.1m/s Stab Class: E	Traffic 35-60 Dogs barking 37-44 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
09/04/2025	21:08 (Evening)	70	50	40	38	WD: NE WS: 0.1m/s Stab Class: E	Traffic 33-58 Dogs barking 35-70 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<30
09/04/2025	22:20 (Night)	62	49	41	36	WD: NE WS: 0.1m/s Stab Class: E	Traffic 38-62 Dogs barking 37-56 TGO inaudible
		TGO Site $L_{Aeq(15min)}$ Contribution					<31

Note 1: Meteorological data obtained from TGO's on-site weather station or by direct measurement by the operator.

5 Discussion

5.1 Discussion of Results - Location R2

Monitoring between Monday 7 April 2025 and Wednesday 9 April 2025 identified that TGO activities were audible on six occasions during the assessment period at location R2. The estimated mining contributions were measured at <35dBA, therefore TGO emissions remained below the relevant noise limit of 35dB $LA_{eq(15min)}$. Extraneous sources such as traffic, bats, dogs barking, livestock, birds and insects were audible during the measurement period.

5.2 Discussion of Results - Location R3/29

Monitoring between Monday 7 April 2025 and Wednesday 9 April 2025 identified that TGO activities remained inaudible during the assessment period at location R3/29. The estimated mining contributions were measured at <33dBA, therefore TGO emissions remained below the relevant noise limit of 35dB $LA_{eq(15min)}$. Extraneous sources such as traffic, birds, bats and dogs barking were audible during the measurement period.

5.3 Discussion of Results - Location R4

Monitoring between Monday 7 April 2025 and Wednesday 9 April 2025 identified that TGO activities remained inaudible during the assessment period at location R4. The estimated mining contributions were measured at <32dBA, therefore TGO emissions remained below the relevant noise limit of 35dB $LA_{eq(15min)}$. Extraneous sources such as traffic, offsite works, operator, wind in trees, birds and insects were audible during the measurement period.

5.4 Discussion of Results - Location R5

Monitoring between Monday 7 April 2025 and Wednesday 9 April 2025 identified that TGO activities remained inaudible during the assessment period at location R5. The estimated mining contributions were measured at <29dBA, therefore TGO emissions remained below the relevant noise limit of 35dB $LA_{eq(15min)}$. Extraneous sources such as traffic, wind in trees, offsite works and insects were audible during the measurement period.

5.5 Discussion of Results - Location R6

Monitoring between Monday 7 April 2025 and Wednesday 9 April 2025 identified that TGO activities were audible on three occasions during the assessment period at location R6. The estimated mining contributions were measured at 33dBA, therefore TGO emissions remained below the relevant noise limit of 35dB $LA_{eq(15min)}$. Extraneous sources such as livestock, birds, insects, bats, operator, wind in trees, aircraft and traffic were audible during the measurement period.

5.6 Discussion of Results - Location R23

Monitoring between Monday 7 April 2025 and Wednesday 9 April 2025 identified that TGO activities remained inaudible during the assessment period at location R23. The estimated mining contributions were measured at <30dBA during the evening period and at <31dBA for the night period, therefore the noise limit of 38dB $LA_{eq(15min)}$ for evening and 36dB $LA_{eq(15min)}$ for night was satisfied. Extraneous sources such as traffic, insects and dogs barking were audible during the measurement period.

6 Comparison of Attended and Unattended Monitoring Results

To address Condition 6 of Schedule 3 of the Project Approval, a program to calibrate and validate the real-time noise monitoring results with the attended monitoring results has been completed.

The validation compares monthly attended monitoring results against the closest assessed unattended monitoring location. Currently, TGO has an unattended real-time monitoring terminal installed at the Brooklands property (nearest to R23). Figure 1 identifies the location of the monitor with respect to the attended monitoring locations. It is noted that the Brooklands unattended monitor is situated 600m west of the attended noise monitoring location R23, therefore, background (L_{A90}) noise levels are significantly lower due to offset distance to highway traffic.

Historically, a comparison of mine noise contributions between attended and unattended noise monitoring demonstrates a general consistency between attended and unattended results. It was noted that insects, and highway traffic noise influenced measured noise levels for this assessment. Furthermore, for April 2025, results remained below the relevant criteria for attended locations.

Table 9 provides a summary comparison of results between the attended and unattended noise surveys for R23.

Table 9 Comparison of Attended and Unattended Results

Assessment Type	Time (hrs)	Descriptor (dBA re 20µPa)			Criteria	Mine Noise Contribution	Meteorology[1]	Description and SPL, dBA
		L_{Amax}	L_{Aeq}	L_{A90}				
Monday 7 April 2025								
Attended	21:08	57	44	36	38	<26	WD: SW WS: 0.2m/s Stab Class: F	Traffic 34-57 Insects <32 TGO inaudible
Unattended	21:15	54	42	37	38	<30		No audio trigger
Attended	22:20	63	49	41	36	<31	WD: SW WS: 0.2m/s Stab Class: E	Traffic 39-63 Dogs barking 40-54 TGO inaudible
Unattended	22:15	54	41	36	36	<28		No audio trigger
Tuesday 8 April 2025								
Attended	21:06	56	44	34	38	<24	WD: SE WS: 0.1m/s Stab Class: F	Traffic 33-56 Insects <32 Dogs barking 32-37 TGO inaudible
Unattended	21:15	52	41	30	38	<31		No audio trigger
Attended	22:20	60	45	37	36	<27	WD: SE WS: 0.1m/s Stab Class: E	Traffic 35-60 Dogs barking 37-44 TGO inaudible
Unattended	22:15	60	43	31	36	<28		Insects Dogs barking TGO inaudible
Thursday 9 April 2025								
Attended	21:08	70	50	40	38	<30	WD: NE WS: 0.1m/s Stab Class: E	Traffic 33-58 Dogs barking 35-70 TGO inaudible
Unattended	21:15	57	45	33	38	<33		No audio trigger
Attended	22:20	62	49	41	36	<31	WD: NE WS: 0.1m/s Stab Class: E	Traffic 38-62 Dogs barking 37-56 TGO inaudible
Unattended	22:15	57	48	41	36	<35		Insects Traffic TGO inaudible

Note 1: Meteorological data obtained from TGO's on-site weather station or by direct measurement by the operator.

7 Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has completed a Noise Monitoring Assessment (NMA) on behalf of Tomingley Gold Operations Pty Ltd (TGO). The assessment was completed to provide monthly monitoring data so that TGO can actively quantify and manage site noise emissions.

Attended monitoring conducted between Monday 7 April 2025 and Wednesday 9 April 2025 identified that TGO mine noise were audible on several occasions during the measurement period. A review of monitoring data and operator attended observations determined that TGO contributions remained below relevant limits.

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Appendix A – Glossary of Terms

A number of technical terms have been used in this report and are explained in **Table A1**.

Table A1 Glossary of Acoustical Terms

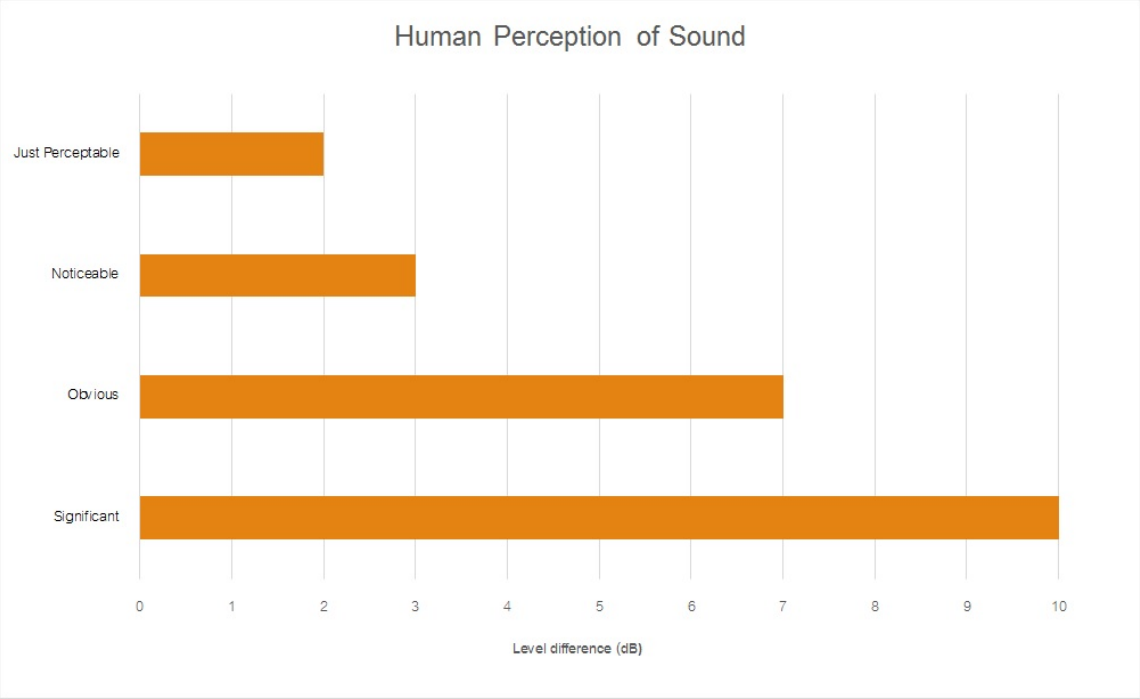
Term	Description
1/3 Octave	Single octave bands divided into three parts
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
ABL	Assessment Background Level (ABL) is defined in the NPI as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured L90 statistical noise levels.
Ambient Noise	The total noise associated with a given environment. Typically, a composite of sounds from all sources located both near and far where no particular sound is dominant.
A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to sound.
Background Noise	The underlying level of noise present in the ambient noise, excluding the noise source under investigation, when extraneous noise is removed. This is usually represented by the LA90 descriptor
dBA	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
dB(Z), dB(L)	Decibels Z-weighted or decibels Linear (unweighted).
Extraneous Noise	Sound resulting from activities that are not typical of the area.
Hertz (Hz)	The measure of frequency of sound wave oscillations per second - 1 oscillation per second equals 1 hertz.
LA10	A sound level which is exceeded 10% of the time.
LA90	Commonly referred to as the background noise, this is the level exceeded 90% of the time.
LAeq	Represents the average noise energy or equivalent sound pressure level over a given period.
LAmax	The maximum sound pressure level received at the microphone during a measuring interval.
Masking	The phenomenon of one sound interfering with the perception of another sound. For example, the interference of traffic noise with use of a public telephone on a busy street.
RBL	The Rating Background Level (RBL) as defined in the NPI, is an overall single figure representing the background level for each assessment period over the whole monitoring period. The RBL, as defined is the median of ABL values over the whole monitoring period.
Sound power level (Lw or SWL)	This is a measure of the total power radiated by a source in the form of sound and is given by 10.log10 (W/Wo). Where W is the sound power in watts to the reference level of 10^{-12} watts.
Sound pressure level (Lp or SPL)	the level of sound pressure; as measured at a distance by a standard sound level meter. This differs from Lw in that it is the sound level at a receiver position as opposed to the sound 'intensity' of the source.

Table A2 provides a list of common noise sources and their typical sound level.

Table A2 Common Noise Sources and Their Typical Sound Pressure Levels (SPL), dBA

Source	Typical Sound Pressure Level
Threshold of pain	140
Jet engine	130
Hydraulic hammer	120
Chainsaw	110
Industrial workshop	100
Lawn-mower (operator position)	90
Heavy traffic (footpath)	80
Elevated speech	70
Typical conversation	60
Ambient suburban environment	40
Ambient rural environment	30
Bedroom (night with windows closed)	20
Threshold of hearing	0

Figure A1 – Human Perception of Sound



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