Allied Pinnacle Tamworth Flour Mill

Three-Yearly Compliance Noise Monitoring Survey – September 2024

Allied Pinnacle Pty Ltd

55 Belmore Street,
Tamworth NSW 2340

Prepared by:

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Revision	Date	Prepared By	Checked By	Authorised By
v1.0	18 September 2024	Patrick Marshall	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 Allied Pinnacle Pty Ltd (the Client). 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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SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

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1.0 Introduction

Allied Pinnacle Pty Ltd has commissioned SLR Consulting Australia Pty Ltd (SLR) to conduct operational noise monitoring for the Allied Pinnacle Tamworth Flour Mill located at 55 Belmore Street Tamworth, New South Wales (NSW) in accordance with Allied Pinnacle's Environment Protection Licence 2127 (EPL 2127).

The objectives of the noise monitoring programme for this operating period were as follows:

- Conduct operator attended noise surveys at 3 locations (as listed in **Section 3.3**) surrounding the mill during the day, evening and night-time periods.
- Quantify all sources of noise within each of the attended noise surveys, including their measured and/or estimated contribution and maximum level of individual noise sources.
- Assess the noise emissions of Allied Pinnacle and determine compliance with respect to the limits in the relevant approvals.

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

2.0 Performance Assessment and Discussion

Table 1 provides a summary of the attended noise measurements undertaken at each monitoring location. Further details are provided for each location in **Section 5** of this report.

Table 1 Performance Assessment

Location	Period	Criteria	Allied Pinnacle Contribution ($L_{Aeq(15minute)}$ dBA)[1]			Standard Weather Conditions			Compliant
			02/09/2024	03/09/2024	04/09/2024	02/09/2024	03/09/2024	04/09/2024	
68 Belmore St	Day	**70**	53	45	46	N	N	N	Y
	Evening	**60**	49	42	41	N	N	Y	Y
	Night	**55**	48	39	39	Y	N	Y	Y
42 William St	Day	**70**	53	48	49	N	Y	N	Y
	Evening	**60**	52	41	48	N	N	Y	Y
	Night	**55**	51	40	48	Y	N	Y	Y
7 Hercules St	Day	**60**	56	52	51	N	N	Y	Y

Note 1: Noise levels presented are the highest measured noise level under applicable standard weather conditions over the monitoring period.

Compliance with the EPL 2172 noise criteria was achieved at all locations during all time periods.

3.0 Noise Criteria

3.1 Environmental Protection Licence 2127

Noise monitoring surrounding the Allied Pinnacle Tamworth Flour Mill was conducted in accordance with EPL 2127. The site specific EPL noise limits are summarised in "L2 Noise limits" of EPL 2127 and are reproduced in **Table 2** below.

Table 2 EPL Noise Criteria

Location	Day	Evening	Night
	$L_{Aeq(15minute)}$	$L_{Aeq(15minute)}$	$L_{Aeq(15minute)}$
68 Belmore Street	70	60	55
42 William Street	70	60	55
7 Hercules Street	60	-	-

3.2 Non-compliances & Exemptions

In accordance with Section 11.1.3 of the NSW Industrial Noise Policy (INP) a development is deemed to be in non-compliance with a noise consent or licence condition if the monitored noise level is more than 2 dB above the statutory noise limit specified in the consent or licence. This may occur for two reasons:

- The noise from the Allied Pinnacle is excessive, in which case Allied Pinnacle will be not complying with its consent or licence condition.
- The noise was increased by extreme, non-standard weather effects—in which case the Allied Pinnacle is not considered to be in noncompliance with its consent or licence condition.

In this latter case, further monitoring at a later date is required to determine compliance under "normal" meteorological conditions.

The INP states in Section 9.2 that:

> *It is not practicable to meet the noise limit under all inversion events; hence exceedances under extreme temperature inversions are not considered to be a non-compliance with consent or licence conditions.*

Non-standard weather effects include:

- Wind speeds greater than 3 m/s at 10m above ground level; or
- Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
- Stability category G temperature inversion conditions

As stated in L2.4 of EPL 2127:

> i) *Data recorded by the Tamworth Airport Bureau of Metorolgy Weather Station must be used to determine meterological conditions and temperature inversion conditions; and*
>
> ii) *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 2000.*

Tamworth Airport records wind speed and direction at 10m above ground level. All weather data reported in **Table 5** to **Table 13** have been recorded at the Tamworth Airport weather station.

3.3 Attended Monitoring

Attended Noise monitoring is to be undertaken on a 3 yearly basis at residential areas. The attended monitoring will take place at the following locations shown in the EPL 2127 'Noise Limits table':

3.3.1 EPL Monitoring Locations and Requirements

- 68 Belmore Street
- 42 William Street
- 7 Hercules Street

The following details the requirements of the monitoring:

- At each one of the locations within the EPL 2172 'Noise Limits table' and;
- Occur once every three years;
- Occur during each day, evening and night period as defined by condition L2.2 for a minimum of:

  i) 1.5 hours during the day;

  ii) 30 minutes during the evening; and

  iii) 1 hour during the night.
- Occur for three consecutive operating days.

4.0 Operational Noise Monitoring Methodology

All acoustic instrumentation employed throughout the monitoring programme has been designed to comply with the requirements of AS IEC 61672.1 – 2004 *Electroacoustics—Sound level meters – Specifications*, AS IEC 61672.2-2004, AS IEC 61672.3-2004 and carried current NATA or manufacturer calibration certificates. Instrument calibration was checked before and after each measurement survey, with the variation in calibrated levels not exceeding ±0.5 dBA.

4.1 Methodology – Operator Attended Noise Monitoring

Operator attended noise measurements were conducted during the day, evening and night-time periods for a minimum of 1.5 hours during the day; 30 minutes during the evening and 1 hour during the night at the three EPL nominated noise monitoring locations, with the exception of 7 Hercules Street where monitoring was only conducted during the day-time period. The three EPL nominated EPL locations are provided in **Table 3** and shown in **Figure 1**. During the operator attended noise measurements, the character and relative contribution of ambient noise sources and mill contributions were determined.

Table 3 Noise Monitoring Locations

Monitoring Location	Receiver Type	Monitoring Location - MGA Zone 56	
		Easting (m)	Northing (m)
68 Belmore Street	Residence	301264	6558193
42 William Street	Residence	301238	6558341
7 Hercules Street	Child Care Centre	301091	6558234

The objective of the operator attended noise monitoring was to measure the $L_{Aeq(15minute)}$ noise level contribution from the Allied Pinnacle Tamworth Flour Mill at the nominated monitoring locations in order to determine the noise contribution of operational activities associated with Allied Pinnacle Tamworth Flour Mill over each 15 minute measurement period. In addition, the operator quantifies and characterises the overall levels of ambient noise in the area (i.e. L_{Amax}, L_{A1}, L_{A10}, L_{A90}, and L_{Aeq}) over the 15 minute measurement interval.

Operator attended noise measurements were conducted using one-third octave integrating Brüel & Kjær Type 2250 sound level meter (s/n 3003389).

Scale: 1:2,000 at A4
Coordinate System: GDA2020 MGA Zone 56

Date Drawn: 11-Sep-2024
Project Number: 630.031826

Sheet Size : A4

Data Source: NearMap Imagery August 2024

SLR

ATTENDED NOISE MONITORING LOCATIONS

FIGURE 1

H:\Projects-SLR\630-Srv\NTL\630-NTL\630.031826.00001 Allied Pinnacle Mill Tamworth 2024 Noise\06 SLR Data\01 GIS\SLR630031826_F1_SITELAYOUT_01.mxd

Table 4 presents a summary of which days the monitoring was conducted, in accordance with condition M4 of EPL 2127.

Table 4 Days of the Week EPL Monitoring was Conducted

Period	Day of the Week (Excluding Weekends and Public Holidays)		
	Day 1	Day 2	Day 2
Day	Monday 02/09/2024	Tuesday 03/09/2024	Wednesday 04/09/2024
Evening	Monday 02/09/2024	Tuesday 03/09/2024	Wednesday 04/09/2024
Night	Monday 02/09/2024	Tuesday 03/09/2024	Wednesday 04/09/2024

5.0 Results

Results of the operator attended noise surveys at 68 Belmore Street, 42 William Street and 7 Hercules Street are provided in **Table 5** to **Table 13.**

Ambient noise levels presented include all noise sources such as transport (roads, rail and aircraft), fauna (insects, frogs, birds and bats), the natural environment (wind in trees), domestic noises, other industrial operations as well as Allied Pinnacle (AP) noise emissions.

The tables also provide the following information:

- Date and start time, operator and equipment details.
- Monitoring location.
- Wind velocity (m/s) and temperature (°C) at the Tamworth Airport weather station, as detailed in **Section 3.2**.
- Typical maximum (L_{Amax}) and contributed $L_{Aeq(15minute)}$ noise levels.

Results of the operator attended noise surveys at 68 Belmore Street are provided in **Table 5**, **Table 6**, and **Table 7**. Monitoring location at 68 Belmore Street represents residential receptors located to the south of the site.

Results of the operator attended noise surveys at 42 William Street are provided in **Table 8**, **Table 9** and **Table 10**. Monitoring location at 42 William Street represents residential receptors located to the east of the.

Results of the operator attended noise surveys at 7 Hercules Street are provided in **Table 11**, **Table 12** and **Table 13**. Monitoring location at 7 Hercules Street represents a child care centre receptor located to the east of the site.

5.1.1 Operator Attended Noise Survey Results – 68 Belmore Street

Table 5 Operator Attended Noise Survey – 68 Belmore Street (Day 1)

Period (Criteria)	Date/ Start Time/ Weather	Survey Number	Primary Noise Descriptor (dBA) (15minute)						Allied Pinnacle Contribution (dBA)	Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
			L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	$L_{Aeq\ (\leq 1.25kHz)}$		
Day (70)	02/09/2024 14:09 24 - 25°C 7.7 - 7.9m/s	1[1]	70	63	58	52	56	55	51	*Site related noise events:* **AP: Audible** Mech plant hum 50-55 L_{Amax} event 44-59 **$L_{Aeq(15minute)}$ contribution 50-53 dBA** *Other noise events:* Traffic noise 53-77 Birdsong 54-69 Wind in trees 50-59 Aeroplane 61-67 Commercial noise 57-69
		2[1]	77	63	58	52	56	55	50	
		3[1]	74	66	60	53	57	56	51	
		4[1]	71	65	60	53	57	57	52	
		5[1]	72	66	60	53	57	57	53	
		6[1]	74	66	61	53	58	57	52	
Evening (60)	02/09/2024 20:30 12°C 4.1m/s	1[1]	78	62	55	48	53	52	49	*Site related noise events:* **AP: Audible** Mech plant hum 47-50 **$L_{Aeq(15minute)}$ contribution 47-49 dBA** *Other noise events:* Traffic noise 52-72 Insect noise 49-50 Human voice 49-64 Extraneous 55-78
		2[1]	71	62	54	48	52	51	47	

Period (Criteria)	Date/ Start Time/ Weather	Survey Number	Primary Noise Descriptor (dBA) (15minute)						Allied Pinnacle Contribution (dBA)	Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
			L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	$L_{Aeq\ (\leq 1.25kHz)}$		
Night (55)	02/09/2024 23:12 8°C 2.6m/s	1	62	55	49	47	49	48	47	*Site related noise events:* **AP: Audible** Mech plant hum 47-49 **$L_{Aeq(15minute)}$ contribution 47-48 dBA** *Other noise events:* Traffic noise 47-69 Industry noise 50-53 Insect noise <30 Residential noise 50-51 Extraneous 68-69
		2	62	55	49	47	49	48	48	
		3	69	53	50	48	49	49	48	
		4	69	53	50	48	49	49	48	

Note 1: Meteorological data from the nearby Tamworth Airport weather station showed wind speeds in excess of 3 m/s during the daytime period of the operator attended measurements at this location. As such, the criteria during this period at this location is not applicable

Table 6 Operator Attended Noise Survey – 68 Belmore Street (Day 2)

Period (Criteria)	Date/ Start Time/ Weather	Survey Number	Primary Noise Descriptor (dBA) (15minute)						Allied Pinnacle Contribution (dBA)	Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
			L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	$L_{Aeq\ (\leq 1.25kHz)}$		
Day (70)	03/09/2024 12:34 18 - 19°C 2.6 - 3.6m/s	1[1]	71	65	59	46	55	54	45	*Site related noise events:* **AP: Audible** Mech plant hum 44-50 L_{Amax} event 52-53 **$L_{Aeq(15minute)}$ contribution 44-45 dBA** *Other noise events:* Traffic noise 58-74 Industry noise 47-58 Birdsong 49-57 Pedestrian 49-53 Commercial noise 52-53 Extraneous 73
		2[1]	70	64	57	47	54	53	45	
		3	74	65	58	47	54	54	44	
		4	73	67	58	46	56	55	44	
		5[1]	73	64	54	45	53	52	44	
		6[1]	71	64	57	46	54	53	45	
Evening (60)	03/09/2024 20:40 7°C 3.1m/s	1[1]	77	64	52	42	53	52	42	*Site related noise events:* **AP: Audible** Mech plant hum 41-43 L_{Amax} event 55 **$L_{Aeq(15minute)}$ contribution 41-42 dBA** *Other noise events:* Traffic noise 44-81 Industry noise 52-55
		2[1]	81	64	54	42	54	53	41	

Period (Criteria)	Date/ Start Time/ Weather	Survey Number	Primary Noise Descriptor (dBA) (15minute)						Allied Pinnacle Contribution (dBA)	Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
			L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	$L_{Aeq\ (\leq 1.25kHz)}$		
Night (55)	03/09/2024 23:09 7°C 4.6 - 4.8m/s	1[1]	61	55	46	39	45	44	39	*Site related noise events:* **AP: Audible** Mech plant hum 38-40 **$L_{Aeq(15minute)}$ contribution 38-39 dBA** *Other noise events:* Traffic noise 48-70 Distant traffic noise 40-45 Industry noise 41-45 Wind in trees 41-42 Dog bark 42-44 Human voice 47 Extraneous 53-63
		2[1]	60	56	46	39	44	43	39	
		3[1]	70	64	51	40	51	49	39	
		4[1]	68	62	49	40	48	47	38	

Note 1: Meteorological data from the nearby Tamworth Airport weather station showed wind speeds in excess of 3 m/s during the daytime period of the operator attended measurements at this location. As such, the criteria during this period at this location is not applicable

Table 7 Operator Attended Noise Survey – 68 Belmore Street (Day 3)

Period (Criteria)	Date/ Start Time/ Weather	Survey Number	Primary Noise Descriptor (dBA) (15minute)						Allied Pinnacle Contribution (dBA)	Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
			L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	$L_{Aeq\ (\leq 1.25kHz)}$		
Day (70)	04/09/2024 12:59 20 - 22°C 3.1 - 3.6m/s	1[1]	71	64	58	46	54	53	44	*Site related noise events:* **AP: Audible** Mech plant hum 43-45 L_{Amax} event 51-61 **$L_{Aeq(15minute)}$ contribution 43-46 dBA** *Other noise events:* Traffic noise 44-75 Industry noise 55-59 Birdsong 60-65 Commercial noise 52-53 Human voice 58-68 Wind in trees 48-53
		2[1]	68	64	56	46	53	52	45	
		3[1]	75	67	56	48	55	54	46	
		4[1]	73	65	58	47	55	54	46	
		5[1]	73	66	59	46	56	54	44	
		6[1]	66	63	54	45	52	51	43	
Evening (60)	04/09/2024 20:45 10°C 1.4m/s	1	70	62	53	43	51	50	41	*Site related noise events:* **AP: Audible** Mech plant hum 40-43 **$L_{Aeq(15minute)}$ contribution 41 dBA** *Other noise events:* Traffic noise 46-73 Industry noise 49-55 Residential noise 44-45 Extraneous 59
		2	73	65	53	42	52	52	41	

Period (Criteria)	Date/ Start Time/ Weather	Survey Number	Primary Noise Descriptor (dBA) (15minute)						Allied Pinnacle Contribution (dBA)	Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
			L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	$L_{Aeq\ (\leq 1.25kHz)}$		
Night (55)	04/09/2024 23:13 4 - 5°C 1.7m/s	1	60	56	47	40	45	44	39	*Site related noise events:* **AP: Audible** Mech plant hum 37-39 **$L_{Aeq(15minute)}$ contribution 38-39 dBA** *Other noise events:* Traffic noise 42-72 Dog bark 45-50 Human voice 41-53 Extraneous 63-75
		2	75	55	46	40	46	45	39	
		3	72	64	51	40	51	50	39	
		4	65	58	48	39	46	45	38	

Note 1: Meteorological data from the nearby Tamworth Airport weather station showed wind speeds in excess of 3 m/s during the daytime period of the operator attended measurements at this location. As such, the criteria during this period at this location is not applicable

5.1.2 Operator Attended Noise Survey Results – 42 William Street

Table 8 Operator Attended Noise Survey – 42 William Street (Day 1)

Period (Criteria)	Date/ Start Time/ Weather	Survey Number	Primary Noise Descriptor (dBA) (15minute)						Allied Pinnacle Contribution (dBA)	Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
			L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	$L_{Aeq\ (\leq 1.25kHz)}$		
Day (70)	02/09/2024 15:51 18 - 23°C 5.3 - 6.7m/s	1[1]	77	70	64	54	60	59	53	*Site related noise events:* **AP: Audible** Mech plant hum 50-56 L_{Amax} event 58-62 **$L_{Aeq(15minute)}$ contribution 52-53 dBA** *Other noise events:* Traffic noise 57-81 Industry noise 55-65 Residential radio 54-56 Birdsong 56-72 Dog bark 65-67 Human voice 65-73 Train noise 57-58 Wind in trees 55-56 Extraneous 63
		2[1]	77	72	66	54	62	61	52	
		3[1]	80	74	66	54	63	62	53	
		4[1]	74	70	65	53	60	59	52	
		5[1]	76	70	65	53	61	60	53	
		6[1]	81	72	64	53	61	60	52	

Period (Criteria)	Date/ Start Time/ Weather	Survey Number	Primary Noise Descriptor (dBA) (15minute)						Allied Pinnacle Contribution (dBA)	Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
			L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	$L_{Aeq\ (\leq 1.25kHz)}$		
Evening (60)	02/09/2024 21:25 11 - 12°C 2.2 - 4.1m/s	1[1]	75	65	53	52	55	54	52	*Site related noise events:* **AP: Audible** Mech plant hum 51-53 L_{Amax} event 54 **$L_{Aeq(15minute)}$ contribution 51-52 dBA** *Other noise events:* Traffic noise 52-75 Insect noise <30 Dog bark 60-66 Wind in trees <50-54
		2	62	54	53	51	52	52	51	
Night (55)	02/09/2024 22:00 9 - 10°C 0.5m/s	1	71	61	53	51	53	53	51	*Site related noise events:* **AP: Audible** Mech plant hum 51-53 L_{Amax} event 54-55 **$L_{Aeq(15minute)}$ contribution 51 dBA** *Other noise events:* Traffic noise 53-75 Insect noise <30 Wind in trees <40
		2	70	61	53	51	53	53	51	
		3	72	65	53	51	54	53	51	
		4	75	67	53	52	55	54	51	

Note 1: Meteorological data from the nearby Tamworth Airport weather station showed wind speeds in excess of 3 m/s during the daytime period of the operator attended measurements at this location. As such, the criteria during this period at this location is not applicable

Table 9 Operator Attended Noise Survey – 42 William Street (Day 2)

Period (Criteria)	Date/ Start Time/ Weather	Survey Number	Primary Noise Descriptor (dBA) (15minute)						Allied Pinnacle Contribution (dBA)	Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
			L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	$L_{Aeq\ (\leq 1.25kHz)}$		
Day (70)	03/09/2024 14:20 19 - 20°C 2.6 - 3.6m/s	1	79	72	63	49	61	59	48	*Site related noise events:* **AP: Audible** Mech plant hum 44-50 **$L_{Aeq(15minute)}$ contribution 46-48 dBA** *Other noise events:* Traffic noise 60-92 Distant traffic noise 48-50 Industry noise 48-67 Residential radio 50-59 Birdsong <50-67
		2[1]	83	73	64	49	61	60	46	
		3[1]	92	70	65	49	62	61	48	
		4[1]	76	72	65	50	61	60	47	
		5[1]	81	73	66	49	62	61	48	
		6[1]	79	72	67	49	62	61	47	
Evening (60)	03/09/2024 21:26 6°C 3.1m/s	1[1]	75	66	51	42	53	52	41	*Site related noise events:* **AP: Audible** Mech plant hum 39-45 **$L_{Aeq(15minute)}$ contribution 40-41 dBA** *Other noise events:* Traffic noise 55-77 Distant traffic noise 41-52 Industry noise 47 Insect noise 30-33 Dog bark 66-70 Extraneous 62
		2[1]	77	64	45	40	51	50	40	

Period (Criteria)	Date/ Start Time/ Weather	Survey Number	Primary Noise Descriptor (dBA) (15minute)						Allied Pinnacle Contribution (dBA)	Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
			L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	$L_{Aeq\ (\leq 1.25kHz)}$		
Night (55)	03/09/2024 22:00 7°C 4.1m/s	1[1]	71	52	44	41	46	45	40	*Site related noise events:* **AP: Audible** Mech plant hum 39-41 L_{Amax} event 44-53 Reversing alarm 42-45 **$L_{Aeq(15minute)}$ contribution 40 dBA** *Other noise events:* Traffic noise 49-74 Distant traffic noise 44-54 Insect noise <30 Residential bike 43-44 Extraneous 73
		2[1]	69	60	43	41	47	46	40	
		3[1]	73	65	48	41	51	50	40	
		4[1]	74	61	44	40	50	49	40	

Note 1: Meteorological data from the nearby Tamworth Airport weather station showed wind speeds in excess of 3 m/s during the daytime period of the operator attended measurements at this location. As such, the criteria during this period at this location is not applicable

Table 10 Operator Attended Noise Survey – 42 William Street (Day 3)

Period (Criteria)	Date/ Start Time/ Weather	Survey Number	Primary Noise Descriptor (dBA) (15minute)						Allied Pinnacle Contribution (dBA)	Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
			L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	$L_{Aeq\ (\leq 1.25kHz)}$		
Day (70)	04/09/2024 14:43 21°C 3.1 - 3.6m/s	1[1]	77	70	63	50	59	58	48	*Site related noise events:* **AP: Audible** Mech plant hum 48-50 **$L_{Aeq(15minute)}$ contribution 48-49 dBA** *Other noise events:* Traffic noise 57-93 Distant traffic noise 49-50 Industry noise 52-73 Residential radio 51-53 Birdsong 35-44 Dog bark 50-71 Human voice 56-62 Train noise 51-54
		2[1]	83	76	66	51	64	63	49	
		3[1]	75	70	64	50	59	58	49	
		4[1]	84	72	67	50	63	61	49	
		5[1]	93	74	66	50	67	65	48	
		6[1]	80	72	65	50	61	60	49	
Evening (60)	04/09/2024 21:27 8 - 10°C 1.4 - 2.6m/s	1	74	64	50	48	52	51	48	*Site related noise events:* **AP: Audible** Mech plant hum 47-49 L_{Amax} event 53-56 Reversing alarm 51 **$L_{Aeq(15minute)}$ contribution 47-48 dBA** *Other noise events:* Traffic noise 50-74 Insect noise <40 Dog bark 51-68 Extraneous 64
		2	74	65	51	48	53	52	47	

Period (Criteria)	Date/ Start Time/ Weather	Survey Number	Primary Noise Descriptor (dBA) (15minute)						Allied Pinnacle Contribution (dBA)	Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
			L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	$L_{Aeq\ (\leq 1.25kHz)}$		
Night (55)	04/09/2024 22:00 4 - 5°C 0.5m/s	1	76	63	52	48	53	53	47	*Site related noise events:* **AP: Audible** Mech plant hum 47-48 L_{Amax} event 54 Reversing alarm 49-50 **$L_{Aeq(15minute)}$ contribution 47-48 dBA** *Other noise events:* Traffic noise 50-77 Aeroplane 53-63
		2	70	56	49	47	50	49	47	
		3	77	70	60	48	58	56	48	
		4	70	60	49	48	51	50	48	

Note 1: Meteorological data from the nearby Tamworth Airport weather station showed wind speeds in excess of 3 m/s during the daytime period of the operator attended measurements at this location. As such, the criteria during this period at this location is not applicable

5.1.3 Operator Attended Noise Survey Results – 7 Hercules Street

Table 11 Operator Attended Noise Survey – 7 Hercules Street (Day 1)

Period (Criteria)	Date/ Start Time/ Weather	Survey Number	Primary Noise Descriptor (dBA) (15minute)						Allied Pinnacle Contribution (dBA)	Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
			L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	$L_{Aeq\ (\leq 1.25kHz)}$		
Day (60)	02/09/2024 12:24 24°C 6.7 - 8.4m/s	1[1]	80	68	58	54	58	57	55	*Site related noise events:* **AP: Audible** Mech plant hum <50 Exhaust fan rattle 54-59 Onsite vehicle <50-60 L_{Amax} event 60-61 **$L_{Aeq(15minute)}$ contribution 54-56 dBA** *Other noise events:* Traffic noise 64-74 Industry noise 56-64 Commercial noise 64-80 Birdsong 55-72 Wind in trees <55-63 Extraneous 72
		2[1]	71	63	57	54	56	56	54	
		3[1]	68	62	58	54	56	56	56	
		4[1]	75	67	58	54	57	57	56	
		5[1]	72	63	58	54	56	55	54	
		6[1]	70	63	57	53	56	55	54	

Note 1: Meteorological data from the nearby Tamworth Airport weather station showed wind speeds in excess of 3 m/s during the daytime period of the operator attended measurements at this location. As such, the criteria during this period at this location is not applicable

Table 12 Operator Attended Noise Survey – 7 Hercules Street (Day 2)

Period (Criteria)	Date/ Start Time/ Weather	Survey Number	Primary Noise Descriptor (dBA) (15minute)						Allied Pinnacle Contribution (dBA)	Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
			L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	$L_{Aeq\ (\leq 1.25kHz)}$		
Day (60)	03/09/2024 10:40 15 - 16°C 2.6 - 3.1m/s	1[1]	75	65	58	52	56	55	50	*Site related noise events:* **AP: Audible** Mech plant hum 48-52 Onsite truck 58-63 Hand tools 52-63 L_{Amax} event 56 **$L_{Aeq(15minute)}$ contribution 48-52 dBA** *Other noise events:* Traffic noise 64-80 Industry noise 56-64 Commercial noise 58-68 Birdsong 56-76 Aeroplane 52-68
		2[1]	77	70	58	52	57	55	52	
		3	74	64	56	51	54	53	49	
		4	78	74	59	51	60	59	48	
		5[1]	76	66	54	51	55	54	49	
		6[1]	80	70	57	51	58	56	48	

Note 1: Meteorological data from the nearby Tamworth Airport weather station showed wind speeds in excess of 3 m/s during the daytime period of the operator attended measurements at this location. As such, the criteria during this period at this location is not applicable

Table 13 Operator Attended Noise Survey – 7 Hercules Street (Day 3)

Period (Criteria)	Date/ Start Time/ Weather	Survey Number	Primary Noise Descriptor (dBA) (15minute)						Allied Pinnacle Contribution (dBA)	Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
			L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	$L_{Aeq\ (\leq 1.25kHz)}$		
Day (60)	04/09/2024 11:16 18 - 20°C 2.2 - 3.6m/s	1	80	65	56	51	56	53	51	*Site related noise events:* **AP: Audible** Exhaust fan rattle 53 Onsite truck 56-68 L_{Amax} event 53-62 **$L_{Aeq(15minute)}$ contribution 48-51 dBA** *Other noise events:* Traffic noise 53-80 Industry noise 49-58 Commercial noise 50-65 Birdsong 36-59 Aeroplane 54-57 Horn 67
		2	67	57	53	51	52	52	48	
		3	80	70	55	51	58	56	48	
		4	75	68	55	50	56	54	51	
		5	68	62	53	50	53	52	49	
		6[1]	78	65	54	50	55	54	51	

Note 1: Meteorological data from the nearby Tamworth Airport weather station showed wind speeds in excess of 3 m/s during the daytime period of the operator attended measurements at this location. As such, the criteria during this period at this location is not applicable

5.2 Modifying Factors

No corrections for modifying factors for low frequency noise or tonal noise are required to be applied to the measurement results as per the Noise Policy for Industry.

6.0 Conclusion

SLR was engaged by Allied Pinnacle Pty Ltd to conduct attended noise monitoring for the Allied Pinnacle Flour Mill Tamworth in accordance with the Environment Protection Licence 2127.

Operator attended noise monitoring was conducted at the three EPL 2172 nominated locations in order to determine the noise performance of the Allied Pinnacle Tamworth Flour Mill.

Compliance with the EPL 2172 noise criteria was achieved at all locations during all monitoring periods.

Appendix A Glossary of Acoustic Terminology

Allied Pinnacle Tamworth Flour Mill

Three-Yearly Compliance Noise Monitoring Survey – September 2024

Allied Pinnacle Pty Ltd

SLR Project No.: 630.301826.00001

18 September 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 x 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

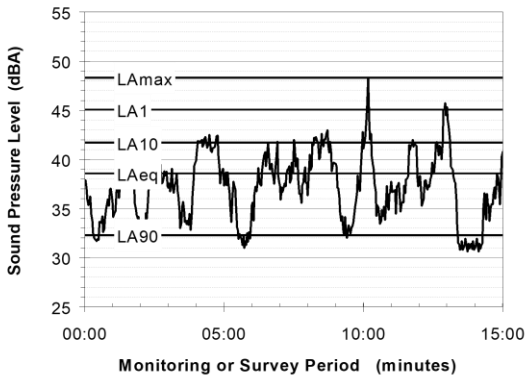
The Sound Power of a source is the rate at which it emits acoustic energy. As with Sound Pressure Levels, Sound Power Levels are expressed in decibel units (dB or dBA), but may be identified by the symbols SWL or LW, or by the reference unit 10^{-12} W.

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 LAN, where LAN is the A-weighted sound pressure level exceeded for N% of a given measurement period. for example, the LA1 is the noise level exceeded for 1% of the time, LA10 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.

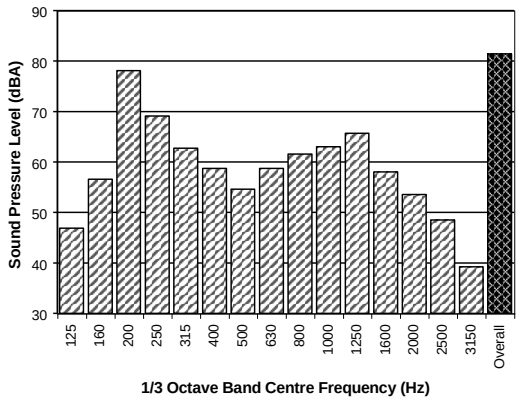
The units for frequency are Hertz (Hz), which represent the number of cycles per second.

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)

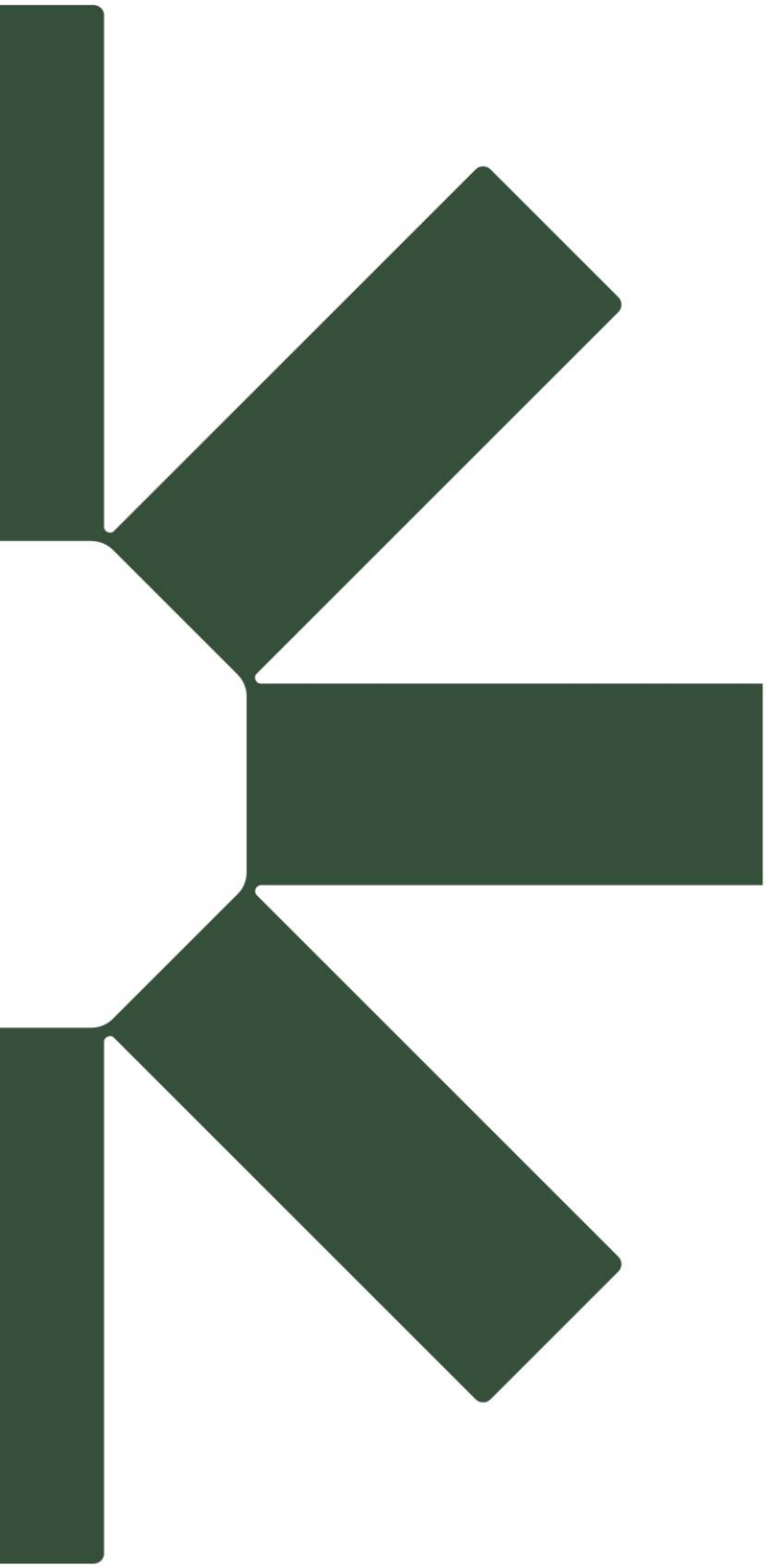
the following figure shows a 1/3 octave band frequency analysis where the noise is dominated by the 200 Hz band. Note that the indicated level of each individual band is less than the overall level, which is the logarithmic sum of the bands.



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.



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