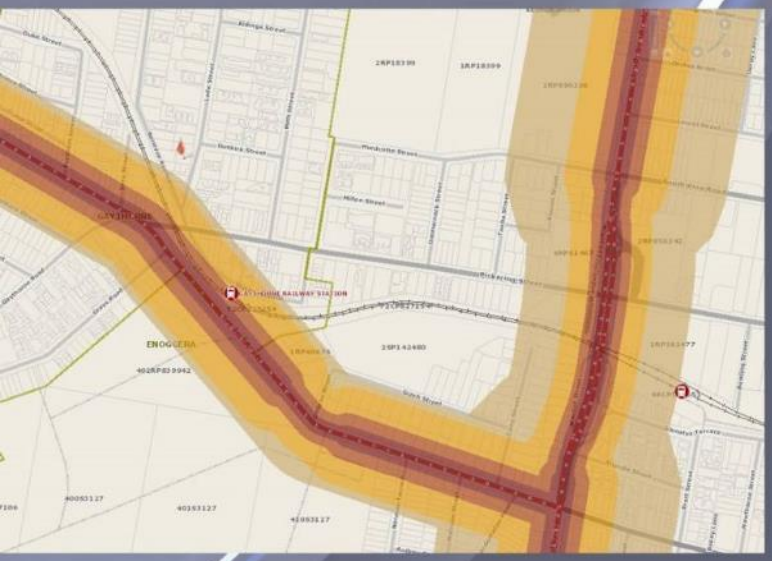
NOISE MEASUREMENT SERVICES

Environmental Noise Assessment
Animal Keeping
1-21 Virginia Way
Logan Village QLD 4207
(Lot 1 on RP19993)

Report Issue: 6181_5 25th September 2023



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Revision No	Issue Date	Revision Description	Author	Review
0	10/02/2022	Report	JD	MT
1	17/02/2022	Comments on PO and AO of LCC Planning Scheme	JD	MT
2	28/07/2023	Updated Plan and Response to RFI	JD	MT
3	18/08/2023	Minor text changes	JD	MT
4	25/08/2023	Minor text changes	JD	MT
5	25/09/2023	Updated site plan	JD	MT

Copy No(s)	Rev No	Destination
1 pdf	5	Somerville Consultants
2	5	Noise Measurement Services
3 pdf	5	Karen Gardyne

REPORT FOR **Somerville Consultants** *on behalf of Pawfect Place Doggy Day Care*

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Signed

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(Senior Acoustician Noise Measurement Services)

Contents

Executive Summary

An environmental noise assessment was conducted at the request of Somerville Consultants for a material change of use for an animal keeping facility located at 1-21 Virginia Way, Logan Village QLD 4207 (Lot 1 on RP19993). The property is currently in use as a doggy day care trading as 'Pawfect Place Doggie Day Care'. The animal keeping facility is located in the Logan City Council local authority area and is zoned Rural Residential (Park Living). The facility currently includes a 'dog motel ' converted from a single storey dwelling on the site (and is no longer a dwelling), a dog run area and a dog grooming room. It is proposed in the future to included a kennel.

The purpose of this report is to formalise the existing use for twenty dogs, and assess noise emissions from the animal keeping facility and demonstrate compliance with the Logan City Council Rural Residential Zone Code (Park Living) for an animal keeping facility.

The office hours of operation are:

- Monday to Saturday 7am – 6pm;
- Sunday by appointment only.

The dog motel is open 24 hours where dogs are kept inside the dog motel during the evening and night.

The assessment criteria referenced in this assessment include:

- *Logan City Council Planning Scheme 2015 v9.0 Rural Residential Zone Code;*
- *Environmental Protection (Noise) Policy 2008.*

The following **Plates, Plan** and **Photos** show the site.

Assessment to Logan City Planning Scheme

Attended and unattended noise monitoring of the animal keeping facility (currently in use) demonstrates that the Rural Residential Zone Code Performance Outcomes P08 and P018 of the Logan City Planning Scheme (summarised in **Section 2.1** of this report) are generally achieved through the Acceptable Outcomes below:

Acceptable Outcome A07;

a. Noise emissions from the animal keeping facility, which is currently in use, have been assessed to be compliant by way of measurement of dog barking at the boundary of adjacent residential premises, as set out in section 4 of this Report. The measured noise emissions have been assessed to the standards of Table 3.2.1.1 of Logan City Council Planning Scheme Policy 3.
b. All adjacent Lots have been considered residential use and this performance outcome has not been applied.
c. to f. Not part of this report.

Acceptable Outcome A018;

a. to f. These outcomes are considered planning matters and not part of this report. The facility is generally well set back from boundaries. An acoustic fence for visual screening and noise attenuation (AO f. iii.) is considered around the dog yard (runs) to further reduce noise emissions and reduce visual stimulation for the dogs (which may reduce barking frequency).

Conclusions

It is concluded that:

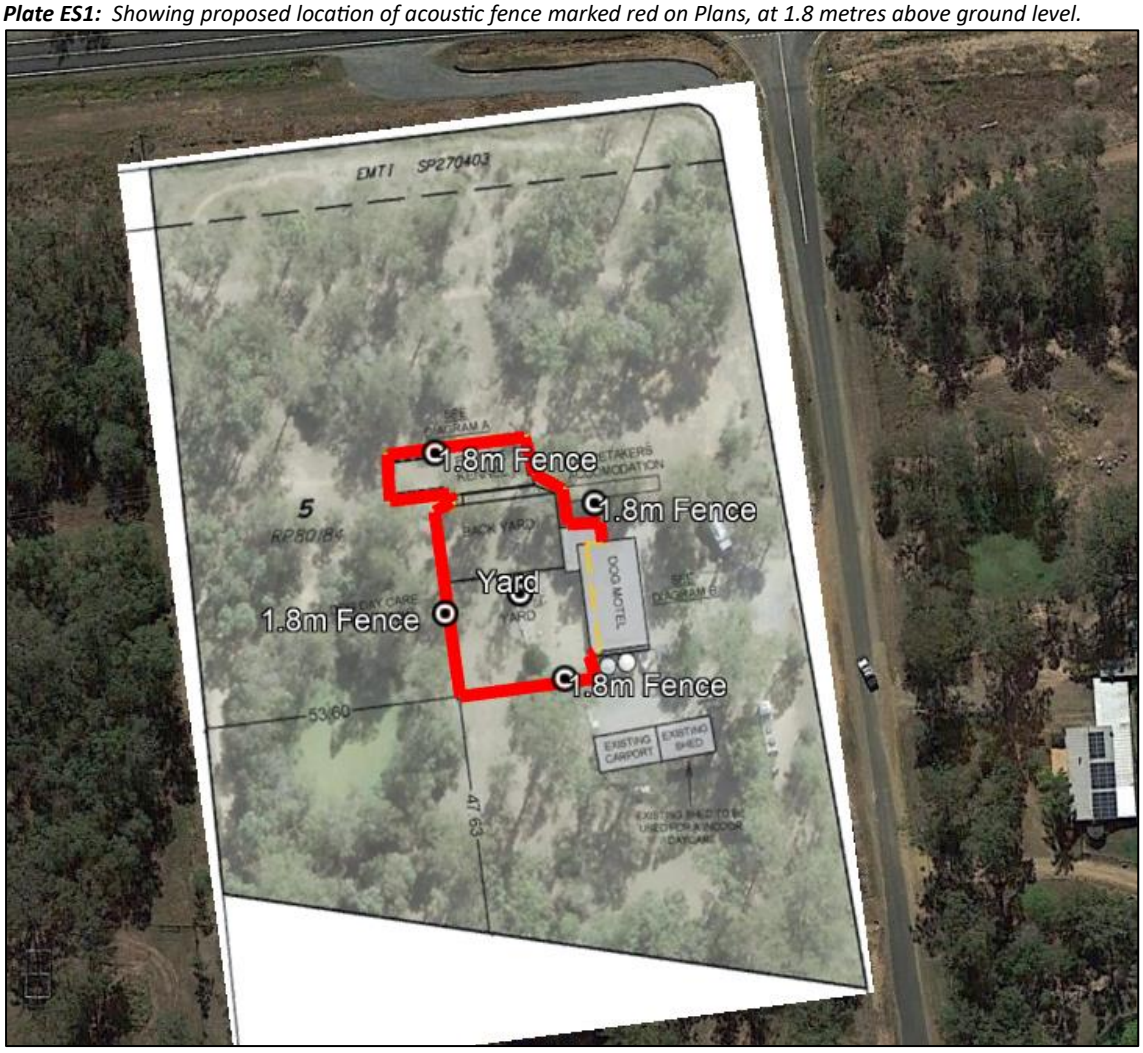
- The relevant parts of the Rural Residential Zone Code Performance Outcome P08 and P018 (for noise emissions) are generally achieved, determined by way of measurement at the boundary of adjacent residential premises;
- An acoustic fence for screening (AO 18 f. iii.) is considered around the dog runs to further reduce noise emissions and reduce visual stimulation for the dogs (which may reduce barking frequency);
- Dogs that stay overnight are kept indoors in the dog motel during the evening and nighttime;
- Doors and windows are generally kept closed during the evening and nighttime and the dog motel is air conditioned;
- Where the Kennel is proposed in the future, it must be enclosed and air conditioned during evening and nigh time periods;
- Dogs are generally quiet and bark more when excited, such as when people (other than staff) approach the facility. This generally occurs during the morning and afternoon pick up;
- Staff were observed to discourage continuous barking actively successfully.

Recommendations

It is recommended that:

- The facility be approved to accommodate twenty dogs, including overnight stay in the dog motel;
- Noise emissions from the proposed dog yard (run), can be reduced at the residential zone boundary with the construction of an acoustic fence or barrier. 1.8 meters high above finished ground level. The proposed location of the acoustic fence is shown in **Plate ES1** following. The proposed acoustic fence around the dog runs must be constructed with a density of 12 Kg/m^2, be continuous and gap free;
- Dogs are kept inside the dog motel during evening and nighttime periods with doors and windows closed during nighttime periods;
- The proposed future Kennel be constructed to achieve noise attenuation of at least 25 dB(A) and be enclosed and air conditioned for evening and nighttime use.

Plate ES1: *Showing proposed location of acoustic fence marked red on Plans, at 1.8 metres above ground level.*



Information Request 2022 September 15

Acoustic Information

3.1. Amend the noise assessment report to assess the noise impact from twenty (20) dogs as per the number of dogs specified in the town planning report.

The measurements conducted in December 2021 included 20 dogs on site.

3.2. Confirm that the data used to calculate the background noise levels has not been affected by the rainfall in the acoustic report.

Advisory note:

It is noted that the data on the 9 and 10 December 2021 should have been removed due to the large rainfall events.

3.3. Apply an adequate filter to remove seasonal insect/frog noises with corresponding frequencies before calculating the background noise levels as the evening and night time periods have been impacted upon.

Further noise monitoring of existing ambient background was conducted during the winter in year 2023. The new survey data during the evening and nighttime periods does not include excessive bird and insect noise and the new monitoring data has been used to determine background noise levels.

3.4. Model the noise emissions from the proposed dog water area.

3.5. Model the noise from the indoor areas including the patio and veranda during the evening and night-time periods.

3.6. State if dogs are intended to occupy outdoor areas in evening and/or night.

Advisory note:

It is mentioned that the hours of operations are Monday to Saturday 7am – 6pm and Sunday by appointment only. Moreover, this assessment has been done based on the noise levels recorded when dogs are outside. It is understood that dogs allowed to stay outside only during the daytime. However, Table 4.4 shows that the noise levels of ten (10) dogs barking comply with day/evening/night time criteria. Therefore, it is required to clearly state if dogs are intended to occupy outdoor areas in evening and/or night.

The dog water area is no longer proposed and is no longer part of this assessment.

The noise model includes dog barking from within the dog motel in **Section 5.3.2** and **5.3.3**.

Any dogs staying overnight, including the evening time period, will be kept indoors with doors and windows closed. Air conditioning has already been installed inside the dog motel.

3.7. Change the heading of the 6th column of Table 4.3 from "LAeq,15m (Dog Barking Only)" to "LAeq,15minutes (Dog Barking Only)".

Table 4.3 has been updated.

3.8.	As Sunday (appointment only) is being proposed, this day needs to be modelled separately as outlined in the PSP 3 noise criteria.

Sunday has been separated from the weekday assessment in **Section 5.3** of this Report.

3.9.	The car parking areas need to be modelled to capture the noise being emitted when the dogs are dropped off and picked up. This modelling is also to include car park conversation noise.

Car parking and crowd noise is considered in **Section 5.3.4** of this Report.

1.0 Introduction

1.1 Background

An environmental noise assessment was conducted at the request of Somerville Consultants for a material change of use for an animal keeping facility located at 1-21 Virginia Way, Logan Village QLD 4207 (Lot 1 on RP19993). The property is currently in use as a doggy day care trading as 'Pawfect Place Doggie Day Care'. The animal keeping facility is located in the Logan City Council local authority area and is zoned Rural Residential (Park Living). The facility currently includes a 'dog motel ' converted from a single storey dwelling on the site (and is no longer a dwelling), a dog run area and a dog grooming room. It is proposed in the future to included a kennel.

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The office hours of operation are:

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The dog motel is open 24 hours where dogs are kept inside the dog motel during the evening and night.

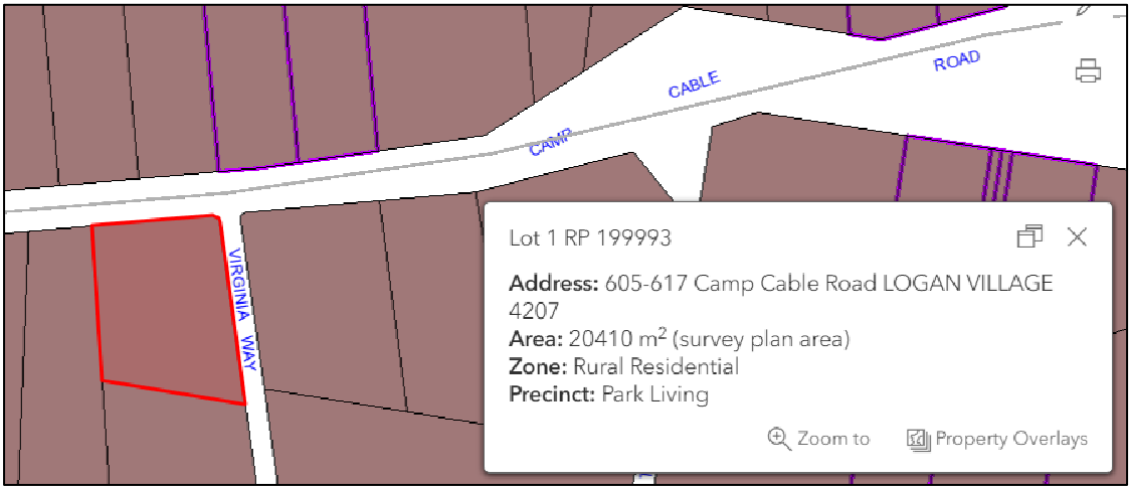
The assessment criteria referenced in this assessment include:

- *Logan City Council Planning Scheme 2015 Rural Residential Zone Code;*
- *Environmental Protection (Noise) Policy 2008.*

The following **Plates, Plan** and **Photos** show the site.

Plate 1.1: *Aerial photograph of the site and surrounds. (Source: Google Earth. QLD government).*

Plate 1.2: *The Lot is zoned Rural Residential, all adjacent properties are zoned Rural Residential. (Source: Logan City Council).*



Plan 1.1: *General floor plan overlaid on aerial photograph. (Source: Somerville Consultants, Google, Logan City Council).*

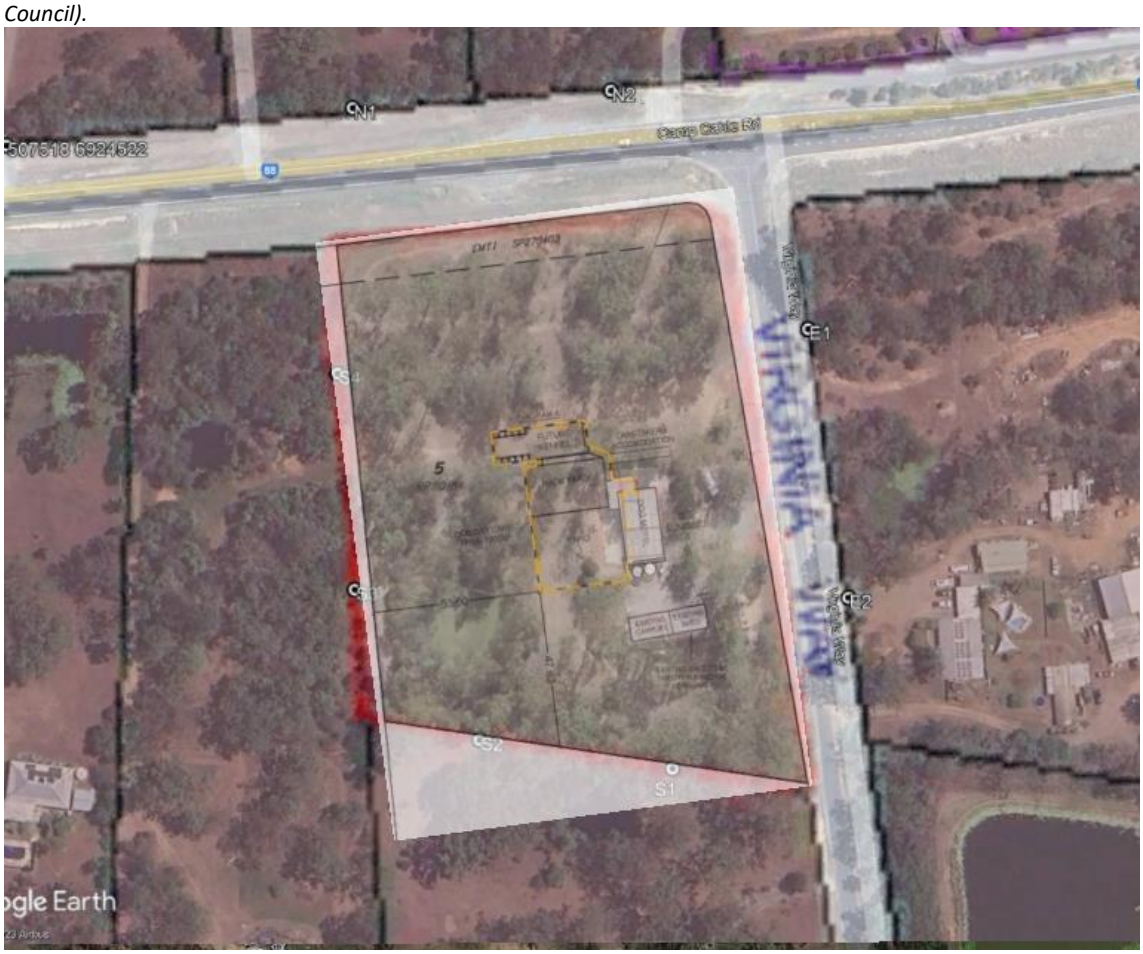
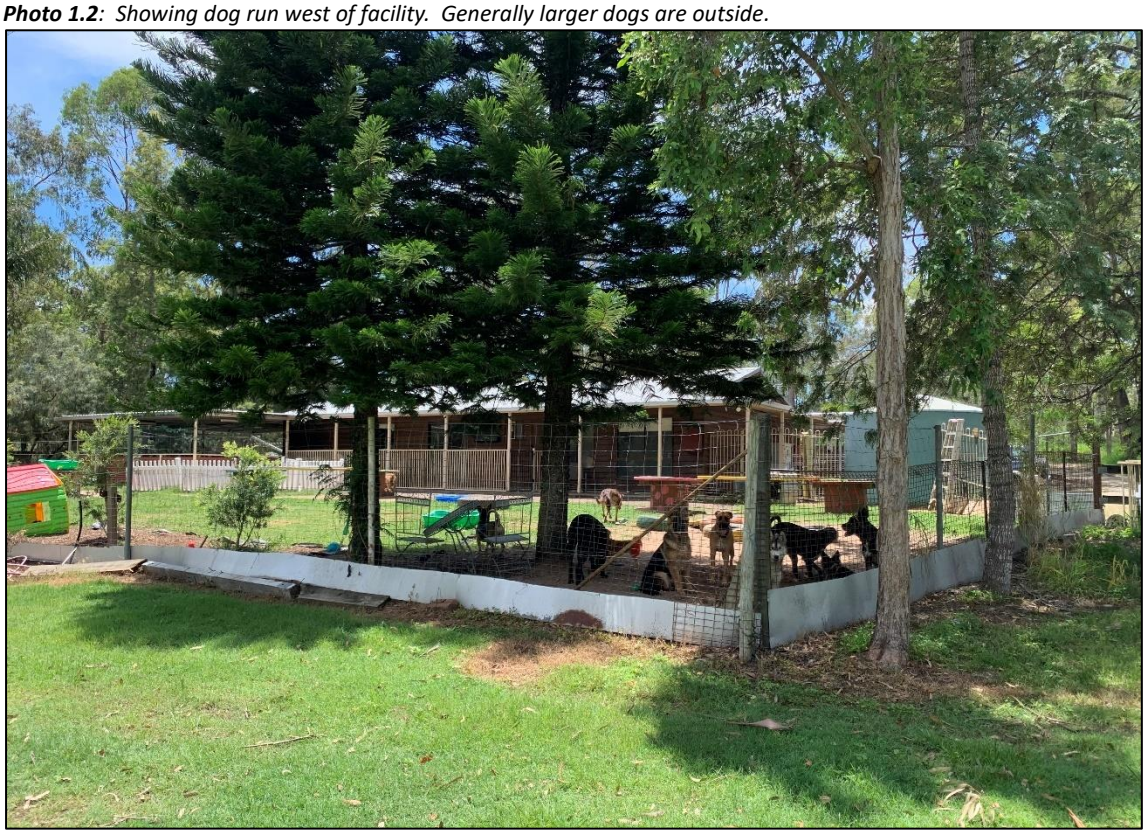


Photo 1.1 *Showing the interior of the animal keeping facility. Doors and windows closed, air conditioned. Generally smaller dogs are kept inside.*

Photo 1.2*: Showing dog run west of facility. Generally larger dogs are outside.*



1.2 Identification of Noise Sensitive Receivers

The purpose of this assessment is to measure existing ambient sound levels that represent nearby noise sensitive receivers, and assess the impact of actual and potential noise emissions from the facility in accordance with Logan City Council Planning Criteria. The existing ambient noise levels have been used to derive the noise criterion limits.

The location is zoned Rural Residential and all adjacent Lots are Rural Residential Zone. This assessment considers the following as the most potentially affected noise sensitive neighbours presented in **Plate 1.3** and **Table 1.1**.

Plate 1.3: *Showing the facility in relation to nearby noise sensitive dwellings. (Source: Google).*

Table 1.1: *The location of nearby noise sensitive receivers in relation to the distance from the facility are presented.*

Receiver Number	Nearest Noise Sensitive Receiver	Type	Zone	Distance from Animal Keeping Facility to Dwelling	At Boundary of Premises
R1	584-600 Camp Cable Road,	Dwelling	Rural Residential	253m NW	170m NW
R2	630-636 Camp Cable Road	Dwelling	Rural Residential	230m NE	177m NE
R3	621-636 Camp Cable Road	Dwelling	Rural Residential	90m E	52m E
R4	23-37 Virginia Way	Dwelling	Rural Residential	145m S	56m S
R5	597-603 Camp Cable Road	Dwelling	Rural Residential	159m SW	56m S
R6	591-603 Camp Cable Road	Dwelling	Rural Residential	172m SW	79m W

2.0 Noise Criteria and Limits

2.1 Logan City Council Logan Planning Scheme 2015 V9.0

The Council assessment criteria referenced in this report is from the Logan City Council Planning Scheme Rural Residential Zone Code. The Rural Residential Zone Code requirements are referenced (in part) below.

Table 2.1: *Logan City Council Rural Residential Code (in part).*

Performance Outcome	Acceptable Outcomes
Amenity	
General Emissions	
PO7 Development protects the intended amenity for the zone and precinct of an adjoining premises by having regard to: a. Noise emissions; b. Air emissions; c. Light emission; d. Radiation emissions; e. Vibration emissions.	**AO7** Development complies with the following emissions standards of Planning scheme policy 3 - Environmental management: a. Table 3.2.1.1 - Noise emission standards for the protection of residential amenity where adjoining a premises in a zone specified in 3.2.1(1)(a) of Planning scheme policy 3 - Environmental management; b. Table 3.2.1.2 - Noise emission standards for the protection of general amenity where adjoining a premises in a zone specified in 3.2.1(1)(b) of Planning scheme policy 3 - Environmental management; c. Table 3.2.2.1 - Air emission standards; d. Table 3.2.3.1 - Light emission standards; e. section 3.2.4 - Radiation emission standards; f. Table 3.2.5.1 - Preferred weighted rms value for continuous and impulsive vibration acceleration (m/s^2) 1/80Hz.
PO18 Animal keeping being a kennel does not produce emissions that adversely impact on residential amenity by providing: a. adequate separation from a use in the residential zone category; b. separation from other existing kennels; c. ease of supervision; d. boundary clearances; e. setbacks; f. a visual buffer to limit visual stimulus to dogs from an external source; g. an acoustic fence; h. a limit on the number of dogs kept on the premises.	**AO18** Animal keeping being a kennel: a. is located a minimum of 100 metres from any lot in the residential zone category; b. is located a minimum distance of 1000 metres from another lawfully established or approved kennel; c. is located a maximum of 20 metres from the Dwelling house on the same lot; d. has a minimum boundary clearance of: i. 100 metres from a road frontage; ii. 15 metres from a side and rear boundary; e. is setback a minimum of: i. 150 metres from a sensitive land use; ii. 150 metres from the boundary of an adjoining lot where the adjoining lot is vacant; f. is visually buffered by: i. a minimum five metres wide screen landscaping strip adjoining a building, run, exercise yard or car park; ii. locating the kennel behind the existing or proposed Dwelling house; iii. provides an acoustic fence with a minimum height of two metres; iv. has no more than 10 dogs per hectare, up to a maximum of 100 dogs

The noise emission standards for the protection of residential amenity are summarised in **Table 2.2** and **2.3** following. The following noise criteria must be achieved at the boundary of premises.

Table 2.2: *Table 3.2.1.1 Noise emission standards for the protection of residential amenity.*

Noise level at the boundary of premises			
Noise type	Time period	Monday to Saturday	Sunday and public holidays
Non-steady sound*	Day 7:00am - 6:00pm	$L_{Aeq,adj,T}$ ≤ L_{A90} plus 5 dB(A)	$L_{Aeq,adj,T}$ ≤ L_{A90} plus 5 dB(A)
	Evening 6:00pm to 10:00pm	$L_{Aeq,adj,T}$ ≤ L_{A90} plus 5 dB(A)	$L_{Aeq,adj,T}$ ≤ L_{A90} plus 5 dB(A)
	Night 10:00 - 7:00am	$L_{Aeq,adj,T}$ ≤ L_{A90} plus 0 dB(A) and L_{Amax} ≤ 60dB(A)	$L_{Aeq,adj,T}$ ≤ L_{A90} plus 0 dB(A) and L_{Amax} ≤ 60dB(A)
Continuous noise*	Anytime	$L_{A90,T}$ plus 0dB(A)	$L_{A90,T}$ plus 0dB(A)

Editor's note - * as defined in AS1055.1-1997 Acoustics - Description and measurement of environmental noise
Note - Adjustments for tonality and impulsiveness to be included in accordance with AS1055.1-1997 Acoustics - Description and measurement of environmental noise.

Table 2.3: *Table 3.2.1.2 Noise emission standards for the protection of general amenity.*

Noise level at the boundary of premises			
Noise type	Time period	Monday to Saturday	Sunday and public holidays
Non-steady sound *	Day 7:00am - 6:00pm	$L_{Aeq,adj,T}$ ≤ L_{A90} plus 10 dB(A)	$L_{Aeq,adj,T}$ ≤ L_{A90} plus 5 dB(A)
	Evening 6:00pm to 10:00pm	$L_{Aeq,adj,T}$ ≤ L_{A90} plus 10 dB(A)	$L_{Aeq,adj,T}$ ≤ L_{A90} plus 5 dB(A)
	Night 10:00pm - 7:00am	$L_{Aeq,adj,T}$ ≤ L_{A90} plus 5 dB(A) and L_{Amax} ≤ 80dB(A)	$L_{Aeq,adj,T}$ ≤ L_{A90} plus 5 dB(A) and L_{Amax} ≤ 80dB(A)
Continuous noise*	Anytime	$L_{A90,T}$ plus 5dB(A)	$L_{A90,T}$ plus 5dB(A)

Note - Adjustments for tonality and impulsiveness to be included in accordance with AS1055.1-1997 Acoustics - Description and measurement of environmental noise.

2.2 AS1055 Acoustics-Description and Measurement of Environmental Noise

AS1055 requires the consideration of the noise emission as being tonal or impulsive in nature, where the criteria is denoted as being “adj, T” . If either, a 2 dB (noticeable) or 5 dB (clearly identifiable) penalty is added to the measured sound level. Some but not all of the criteria are “adj, T’.

3.0 Ambient Noise Monitoring

3.1 Measurement of Background Sound Levels

Noise monitoring has been undertaken on site at 1-21 Virginia Way, Logan Village to measure existing ambient noise levels and noise emissions near noise sensitive receivers. The noise logger was located near the east property boundary, 1.4 metres above ground level in a free field location. The approximate location of the noise logger is shown in the **Plate 3.1** below.

Plate 3.1: *Showing the noise measurement location (ML1) in relation to other noise sensitive receivers in the area.*

The instrument was field calibrated before and after the measurement session and the instrument was found to be within 0.1 dB of the reference signal. All instrumentation used in this assessment holds a current calibration certificate from a certified NATA calibration laboratory. The following instruments were used to measure the ambient noise levels-

- Larson Davis 831 Class 1 environmental noise logger;
- Larson Davis CAL200 Class 1 calibrator.

Ambient sound pressure levels were measured generally in accordance with the Department of Environment and Science's *Noise Measurement Manual 2020* and Australian Standard AS1055:2018 - *Acoustics-Description and measurement of environmental noise*.

3.2 Measured Levels

An ambient noise survey was conducted in December of year 2021. Unfortunately, the evening and night time sound levels were affected by summer insects, and data from this survey is not used. Updated ambient noise monitoring has been included in this Report.

Ambient noise levels were recorded at 15 minute intervals between 6th and 14th July 2021. The data collected on the 13th and 14th of July are weather affected and excluded from this assessment. Levels are presented graphically in **Figure 3.1**, and the average ambient background is presented in tabular format in **Table 3.1**.

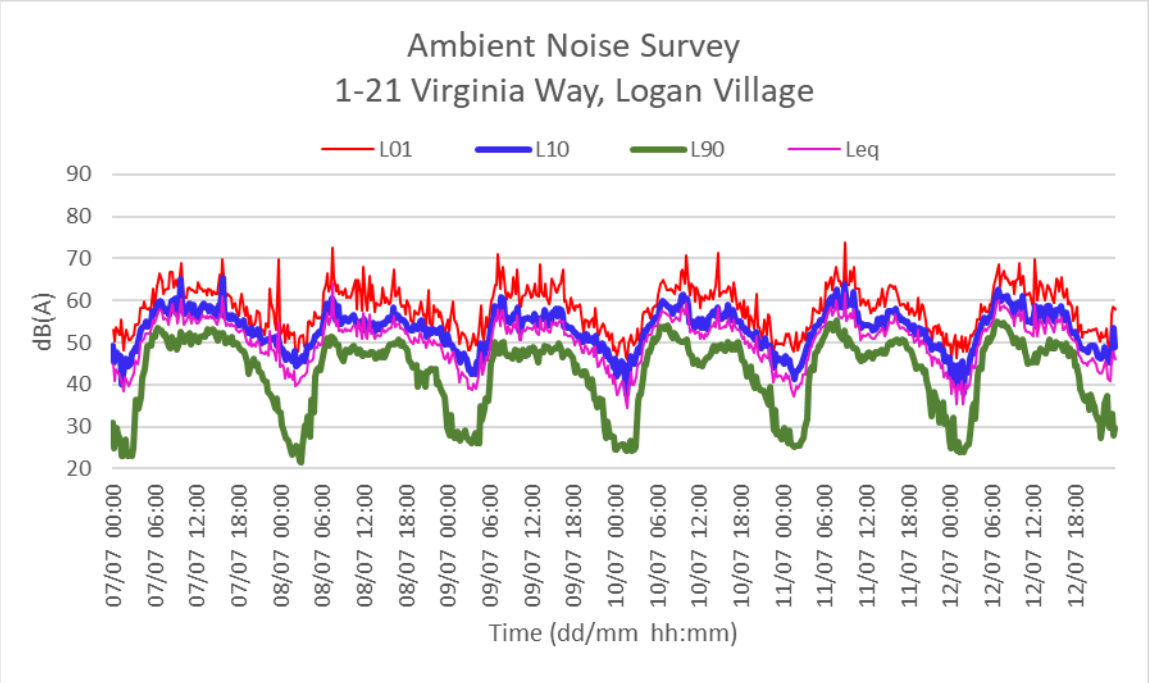


Figure 3.1: *Average ambient noise levels at ML1 (levels in dB(A), free-field).*

The rating background sound level (or minL90) has been calculated in accordance with the (former) Department of Environment and Heritage Protection Planning for Noise Control Guideline as it provides a more conservative background for assessment purposes.

Table 3.1: *Average min L90 sound levels at ML1 (levels in dB(A), free-field, a-typical and weather affected data removed).*

Date	Day	$_{min}L_{90}$ Day (7:00am – 6:00pm)	$_{min}L_{90}$ Evening (6:00pm – 10:00pm)	$_{min}L_{90}$ Night (10:00pm - 7:00am)
07/07/2023	Friday	46	54	56
08/07/2023	Saturday	46	53	56
10/07/2023	Monday	45	57	56
11/07/2023	Tuesday	45	54	57
12/07/2023	Wednesday	46	52	54
	Median	**47**	**39**	**25**
09/07/2023	**Sunday**	**47**	**37**	**28**

Other measured statistical levels were recorded, and are available, are not tabulated in this section.

3.3 Criteria Summary

Relevant criteria for noise assessment are derived from the noise criteria and limits presented in **Section 2** of this report and the measured ambient sound levels in **section 3.1** of this report. The noise limits are summarised in **Table 3.2** below.

Table 3.2: *Summary of relevant assessment criteria. Levels are in dB(A), free-field.*

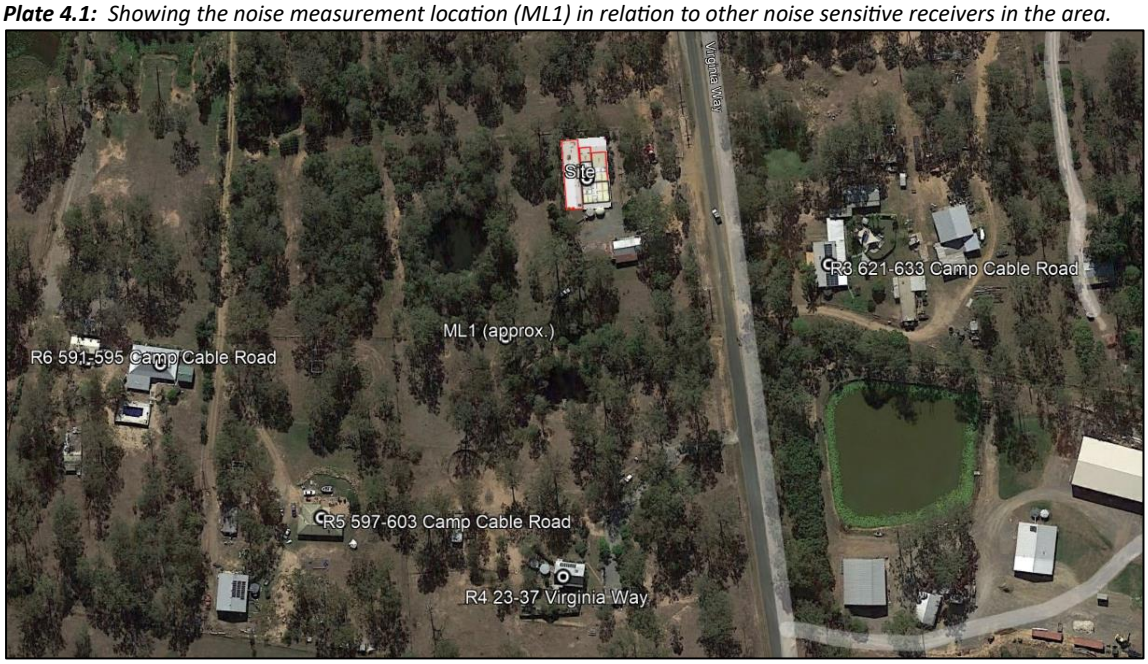
Noise Type	Time	Descriptor	Monday to Saturday	Sunday and Public Holiday
At the boundary of sensitive neighbouring premises				
Non Steady Sound	Day 7:00am – 6:00pm	$Leq_{Adj,T}$	**52**	**52**
Non Steady Sound	Evening 6:00pm – 10:00pm	$Leq_{Adj,T}$	**44**	**42**
Non Steady Sound	Night 10:00pm – 7:00am	$Leq_{Adj,T}$ / Lmax	**30 / 60**	**33 / 60**
Continuous Noise	Day 7:00am – 6:00pm	$L90_{,T}$	47	47
Continuous Noise	Evening 6:00pm – 10:00pm	$L90_{,T}$	39	39
Continuous Noise	Night 10:00pm – 7:00am	$L90_{,T}$	25	28

4.0 Dog Noise Monitoring

4.1 Dog Noise Monitoring – Unattended Noise Logger with Audio Recording

Noise monitoring has been undertaken on site at 1-21 Virginia Way, Logan Village to measure existing ambient noise levels and noise emissions near noise sensitive receivers. The noise logger was located on the southern property boundary, approximately 80 metres from the east boundary and 1.4 metres above ground level in a free field location. The location of the instrument is between the main sources of noise emissions on site and noise sensitive receivers located further south. The approximate location of the noise logger is shown in the **Plate 3.1** below.

Plate 4.1: *Showing the noise measurement location (ML1) in relation to other noise sensitive receivers in the area.*



In order to assess noise emissions from the site the noise logger was set to record audio for 60 seconds in fifteen minute intervals; this allowed the author to listen to the sounds while also recording the levels of those sounds.

Figure 4.1 following shows the first 60 seconds of each 15 minute interval from the full 24 hours of the 7th December 2021. Intervals when at least some barking was audible are highlighted grey. The potential noise from the site identified in the audio recordings are highlighted grey and examined in detail in **Table 4.1**.

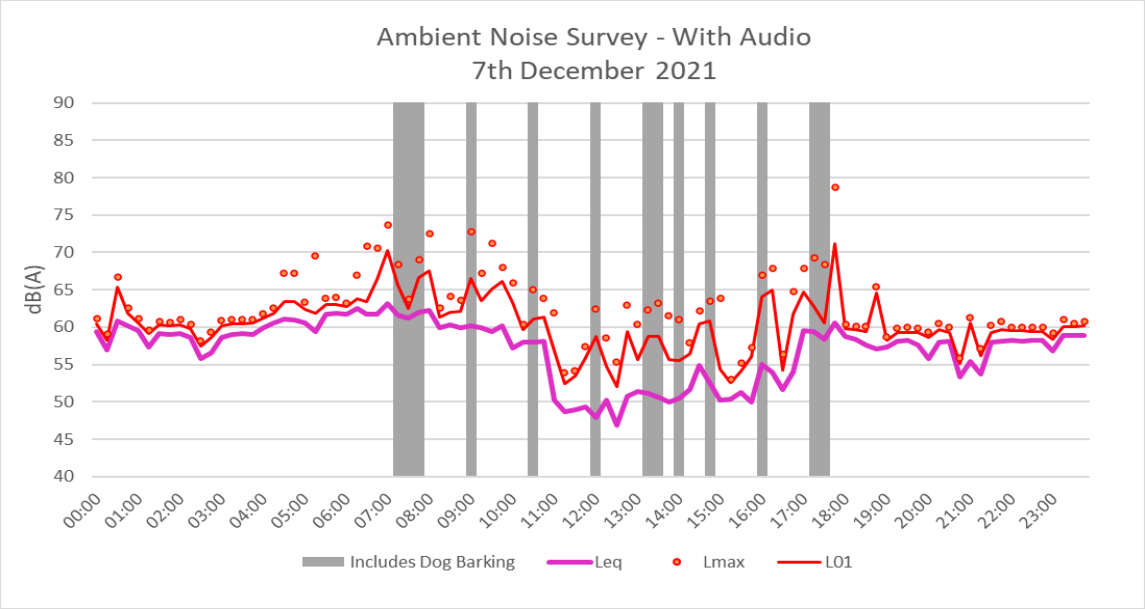


Figure 4.1: *Showing a one minute sample, per 15 minute interval with dog barking identified by audio.*

Table 4.1: *Dominant source of noise emissions identified by audio recording.*

Date	Time	LAeq, 60s	LAFmax, 60s	Dominant Sources of Noise
2021-12-07	00:00	59.4	61.1	Insects/Frogs
2021-12-07	00:15	56.9	59.0	Insects/Frogs
2021-12-07	00:30	60.8	66.7	Insects/Frogs
2021-12-07	00:45	60.2	62.6	Insects/Frogs
2021-12-07	01:00	59.5	61.1	Insects/Frogs
2021-12-07	01:15	57.3	59.6	Insects/Frogs
2021-12-07	01:30	59.1	60.7	Insects/Frogs
2021-12-07	01:45	59.1	60.7	Insects/Frogs
2021-12-07	02:00	59.1	61.0	Insects/Frogs
2021-12-07	02:15	58.6	60.4	Insects/Frogs
2021-12-07	02:30	55.8	58.1	Insects/Frogs
2021-12-07	02:45	56.6	59.3	Insects/Frogs
2021-12-07	03:00	58.7	60.8	Insects/Frogs
2021-12-07	03:15	59.0	61.0	Insects/Frogs
2021-12-07	03:30	59.1	61.0	Insects/Frogs
2021-12-07	03:45	59.0	61.0	Insects/Frogs
2021-12-07	04:00	59.9	61.8	Insects/Frogs
2021-12-07	04:15	60.6	62.6	Insects/Frogs/Birds
2021-12-07	04:30	61.1	67.2	Insects/Frogs/Birds
2021-12-07	04:45	61.0	67.2	Insects/Frogs/Birds/Distant Road Traffic
2021-12-07	05:00	60.6	63.3	Insects/Frogs/Birds/Distant Road Traffic
2021-12-07	05:15	59.4	69.5	Insects/Frogs/Birds/Distant Road Traffic
2021-12-07	05:30	61.8	63.9	Insects/Frogs/Birds
2021-12-07	05:45	61.9	64.0	Insects/Frogs/Birds/Distant Road Traffic

Table 4.1 *continued over…*

Table 4.1 (continued):.

Date	Time	LAeq, 60s	LAFmax, 60s	Source of Noise
2021-12-07	06:00	61.7	63.2	Insects/Frogs/Birds/Distant Road Traffic
2021-12-07	06:15	62.6	66.9	Insects/Frogs/Birds/Distant Road Traffic
2021-12-07	06:30	61.7	70.8	Insects/Frogs/Birds/Distant Road Traffic
2021-12-07	06:45	61.7	70.6	Insects/Frogs/Birds/Distant Road Traffic
2021-12-07	07:00	63.2	73.7	Insects/Frogs/Birds/Distant Road Traffic
2021-12-07	07:15	61.6	68.4	Dog Bark
2021-12-07	07:30	61.2	63.7	Dog Bark
2021-12-07	07:45	62.0	69.0	Dog Bark - Staff Control - Motor
2021-12-07	08:00	62.2	72.5	Dog Bark
2021-12-07	08:15	59.9	62.6	Dog Bark
2021-12-07	08:30	60.3	64.1	Insects/Frogs/Birds
2021-12-07	08:45	59.9	63.6	Insects/Frogs/Birds
2021-12-07	09:00	60.2	72.8	Dog Bark (72.8 Lmax)
2021-12-07	09:15	59.9	67.3	Insects/Frogs/Birds/Distant Road Traffic
2021-12-07	09:30	59.4	71.2	Distant Road Traffic
2021-12-07	09:45	60.1	68.0	Aircraft
2021-12-07	10:00	57.3	66.0	Insects/Frogs/Bird/Distant Road Traffic
2021-12-07	10:15	58.0	60.4	Insects/Frogs/Birds
2021-12-07	10:30	58.0	65.0	Dog Bark (small dog)
2021-12-07	10:45	58.2	63.9	Insects/Frogs/Birds/Distant Road Traffic
2021-12-07	11:00	50.3	61.9	Birds
2021-12-07	11:15	48.7	53.9	Distant Road Traffic
2021-12-07	11:30	48.9	54.2	Birds/Distant Road Traffic
2021-12-07	11:45	49.3	57.5	Birds/Distant Road Traffic
2021-12-07	12:00	47.9	62.5	Dog Bark / Dog Bark (small dog)
2021-12-07	12:15	50.2	58.5	Birds/Distant Road Traffic
2021-12-07	12:30	46.8	55.3	Distant Road Traffic
2021-12-07	12:45	50.7	63.0	Distant Road Traffic
2021-12-07	13:00	51.4	60.4	Birds/Distant Road Traffic
2021-12-07	13:15	51.1	62.3	Dog Bark
2021-12-07	13:30	50.6	63.3	Dog Bark
2021-12-07	13:45	49.9	61.6	Birds
2021-12-07	14:00	50.5	61.0	Dog Bark x 1
2021-12-07	14:15	51.7	57.9	Birds/Aircraft
2021-12-07	14:30	54.9	62.2	Aircraft
2021-12-07	14:45	52.5	63.4	Birds/Dog Bark
2021-12-07	15:00	50.2	63.9	Birds/Insects/Frogs/Distant Road Traffic
2021-12-07	15:15	50.4	53.0	Birds/Insects/Frogs/Distant Road Traffic
2021-12-07	15:30	51.3	55.2	Birds/Insects/Frogs/Distant Road Traffic
2021-12-07	15:45	50.0	57.3	Birds/Insects/Frogs/Distant Road Traffic

***Table 4.1** continued over…*

Table 4.1 *(continued):.*

Date	Time	LAeq, 60s	LAFmax, 60s	Source of Noise
2021-12-07	16:00	55.0	67.0	Dog Bark/Birds/Insects/Frogs
2021-12-07	16:15	54.0	67.9	Birds/Insects/Frogs/Distant Road Traffic
2021-12-07	16:30	51.6	56.4	Birds/Insects/Frogs/Distant Road Traffic
2021-12-07	16:45	54.0	64.7	Birds/Insects/Frogs/Distant Road Traffic
2021-12-07	17:00	59.5	67.8	Birds/Insects/Frogs/Distant Road Traffic
2021-12-07	17:15	59.4	69.3	Birds/Insects/Frogs/Dog Bark
2021-12-07	17:30	58.3	68.4	Birds/Insects/Frogs/Dog Bark
2021-12-07	17:45	60.6	78.7	Birds/Insects/Frogs/Distant Road Traffic
2021-12-07	18:00	58.7	60.4	Birds/Insects/Frogs/Distant Road Traffic
2021-12-07	18:15	58.4	60.2	Birds/Insects/Frogs/Distant Road Traffic
2021-12-07	18:30	57.6	60.1	Insects/Frogs/Distant Road Traffic
2021-12-07	18:45	57.0	65.4	Insects/Frogs/Distant Road Traffic
2021-12-07	19:00	57.3	58.6	Insects/Frogs
2021-12-07	19:15	58.1	59.8	Insects/Frogs
2021-12-07	19:30	58.3	60.0	Insects/Frogs
2021-12-07	19:45	57.6	59.9	Insects/Frogs
2021-12-07	20:00	55.8	59.4	Insects/Frogs
2021-12-07	20:15	58.0	60.5	Insects/Frogs
2021-12-07	20:30	58.2	60.0	Insects/Frogs
2021-12-07	20:45	53.4	55.8	Insects/Frogs
2021-12-07	21:00	55.4	61.3	Insects/Frogs
2021-12-07	21:15	53.7	57.1	Insects/Frogs
2021-12-07	21:30	58.0	60.2	Insects/Frogs
2021-12-07	21:45	58.2	60.7	Insects/Frogs
2021-12-07	22:00	58.3	59.9	Insects/Frogs
2021-12-07	22:15	58.1	60.0	Insects/Frogs
2021-12-07	22:30	58.2	59.9	Insects/Frogs
2021-12-07	22:45	58.2	60.0	Insects/Frogs
2021-12-07	23:00	56.8	59.3	Insects/Frogs
2021-12-07	23:15	58.9	61.0	Insects/Frogs
2021-12-07	23:30	58.9	60.5	Insects/Frogs
2021-12-07	23:45	58.9	60.8	Insects/Frogs

End of ***Table 4.1****.*

From the 24 hour observations from the 7th of December 2021 it has been concluded that:

- Dog barking is audible at the (southern) site boundary;
- Dog barking is intermittent and limited to daytime hours and not evening or night time.

4.2 Attended Nosie Monitoring

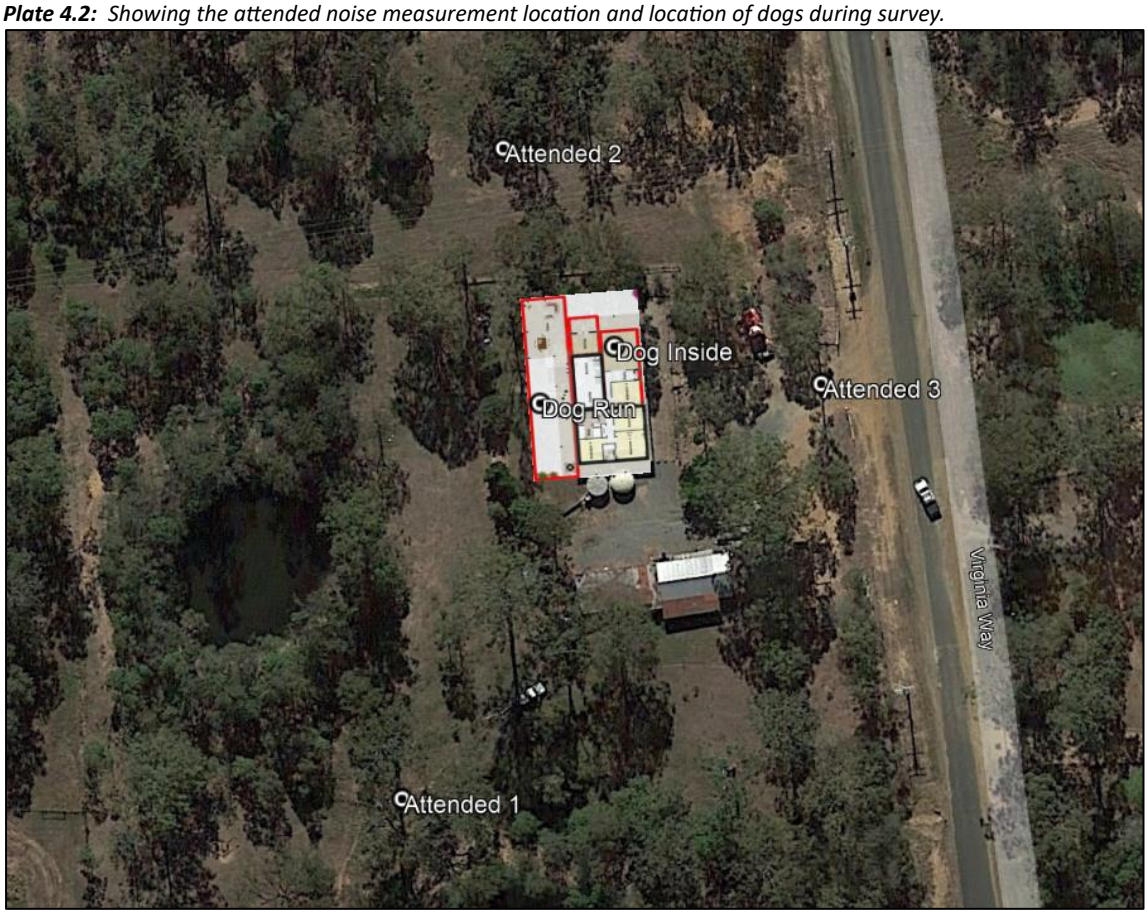
Attended noise monitoring has been undertaken on site at 1-21 Virginia Way, Logan Village to measure the sound level from the dogs at the site boundaries in the direction of the nearest dwellings with the purpose of determining compliance or non compliance by way of measurement. The measurements were undertaking on the 16th December 2021. The duration for each measurement was for 15 minutes. The location of each measurement is shown in the **Plate 4.2** below.

Ambient sound pressure levels were measured generally in accordance with the Department of Environment and Science *Noise Measurement Manual 2020* and Australian Standard AS1055:2018 - *Acoustics-Description and measurement of environmental noise*.

The instrument was field calibrated before and after the measurement session and the instrument was found to match the reference signal. All instrumentation used in this assessment holds a current calibration certificate from a certified NATA calibration laboratory. The following instruments were used to measure the ambient noise levels-

- Larson Davis Class 1 environmental noise logger;
- Larson Davis CAL200 Class 1 calibrator.

Plate 4.2: *Showing the attended noise measurement location and location of dogs during survey.*



The measured sound levels in 1 second intervals Each second where a dog was barking has been highlighted grey to represent the frequency and duration of the dog barks over a 15 minute period. It was observed that the dogs were generally quiet and that the dogs barked more frequently when a person (other than staff) would approach the building or the dog runs. During each attended period, the surveyor approached the facility which excited the dogs and the excided state generally lasted less than one minute. This simulates an owner or other person visiting the facility and exciting the dogs. The measured are presented in **Figure 4.1** to **Figure 4.3** for each location. A photo of ten large dogs in the dog run is shown in **Photo 4.1** below.

Photo 4.1: *Showing ten large dogs in the dog run during the attended noise monitoring.*

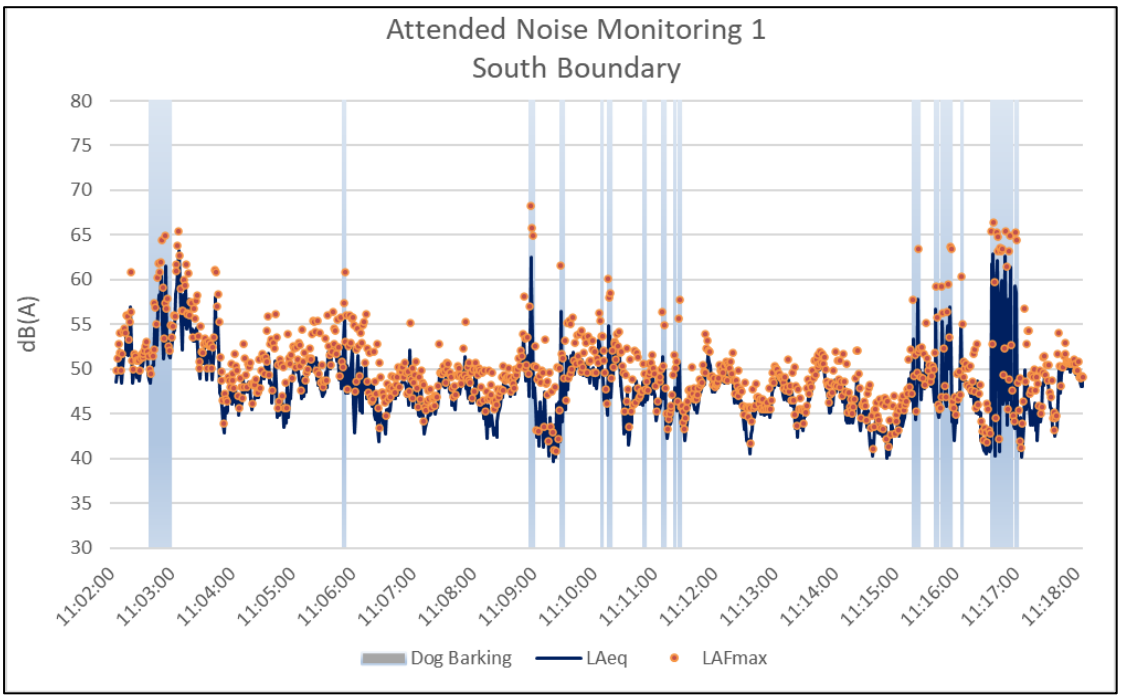


Figure 4.1: *Measured sound levels at the southern boundary and identified dog barking.*

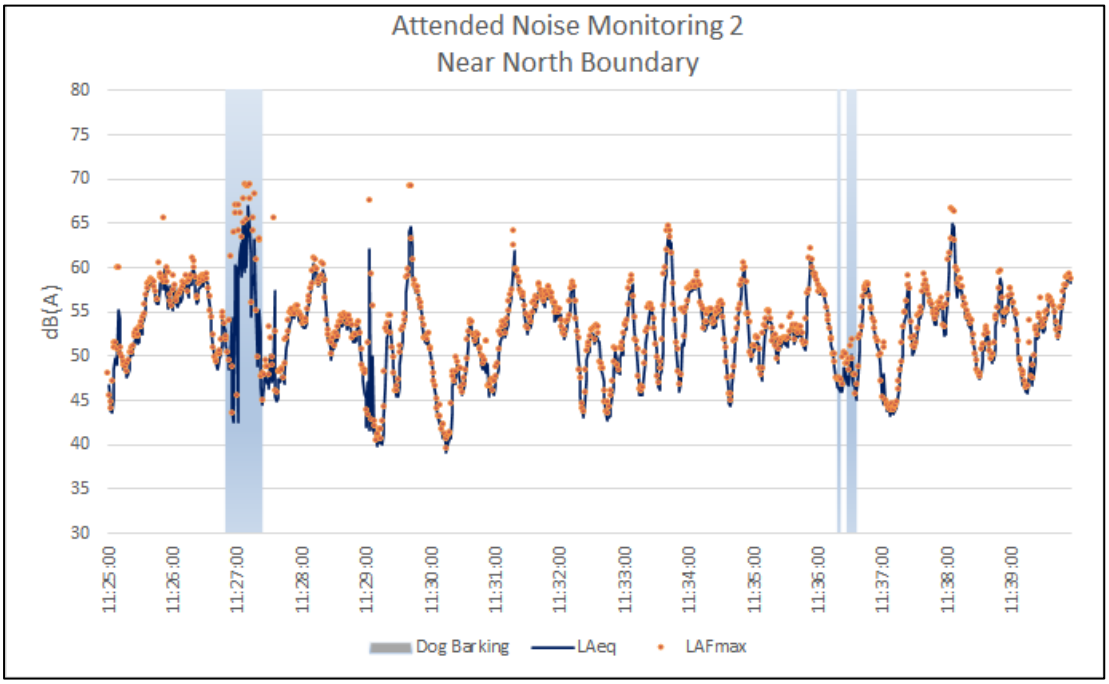


Figure 4.2: *Measured sound levels near the north boundary and identified dog barking.*

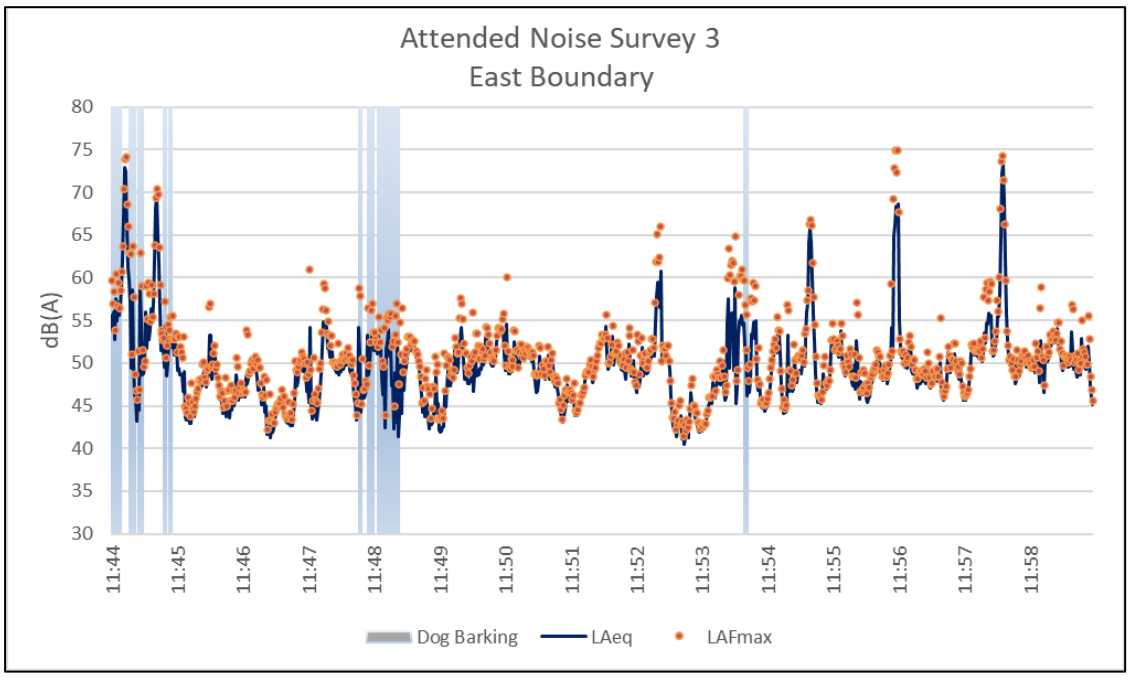


Figure 4.3: *Measured sound levels near the north boundary and identified dog barking.*

The measured sound level of the dog barking has been summarised in **Table 4.3** below. The dog barking has been identified by audio recording and notes during attended monitoring. The total duration of dog barking over the three attended surveys was 160 seconds with 53 seconds being the average duration during a 15 minute period. The dogs were approached and excided during the monitoring period, which is representative of dog pick up and drop off times or when a visitor arrives. It was observed that the facility staff actively discouraged barking and were successful in reducing the duration of dog barking frequency and duration.

Table 4.3: *Measured Leq and Lmax from dog barking at the site boundaries.*

Attended Measurement Location	Representative Location	Duration of Dog Barking,t (within 15 minutes)	LA_{eq},t (Dogs Only)	L_{max},t (Dogs Only)
1	South Boundary	79s	56.0	68.3
2	(Near) North Boundary	32s	60.4	69.5
3	East Boundary	49s	53.4	63.7
	Average	53s	-	-

5.0 Environmental Noise Model

5.1 Noise Sources and Assessment Methodology

Dog barking was recorded from a distance of approximately 3 metres from a number of large dogs barking. The Leq from dog barking (only) was measured 85 dB(A). The Lmax from the highest recorded dog bark was measured 99 dB(A). The Leq sound level of dog barking has been presented in **Table 5.1**. These represent the larger dogs barking excitedly and represents an individual bark (1 second).

Table 5.1: *Design sound power levels, as modelled.*

Name	Descriptor	Sound Power Levels in dB(Z)								Overall SWL in dB(Z)	Overall SWL in dB(A)
		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz		
Large Dog Barking	$L_{eq,1s}$ (*)	78	73	77	102	103	91	80	72	106	104
Large Dog Barking	$L_{max(*)}$	81	80	78	85	115	116	95	84	119	118
Car Idle	L_{eq}	74	81	75	72	75	76	72	69	85	81
Group of people 10	L_{eq}	54	59	64	69	73	74	73	64	79	79

(*) An adjustment for impulsive characteristics is required (+5 dB).

The duration of dog barking was observed to be 53 seconds per 15 minutes or 206 seconds per hour, during the period of attended noise monitoring (**section 4.2** of this report) for a group of ten dogs. The dog(s) barking over 206 seconds can be converted to an Leq (1hr) for assessment purposes. The Leq of dogs barking for 206 seconds in one hour is equal to Leq (dog bark) – 12 dB(A).

A larger group of 20 dogs is proposed. It is considered likely that a group of dogs twice the size will bark for twice the duration. For assessment purposes a group of 20 dogs barking for 412 seconds in one hour is equal to Leq (dog bark) – 9 dB(A).

Dog barking was also assessed for tonality and impulsiveness. Dog barking was found to be impulsive and a +5 dB(A) adjustment to level is applied to the Leq level for assessment purposes.

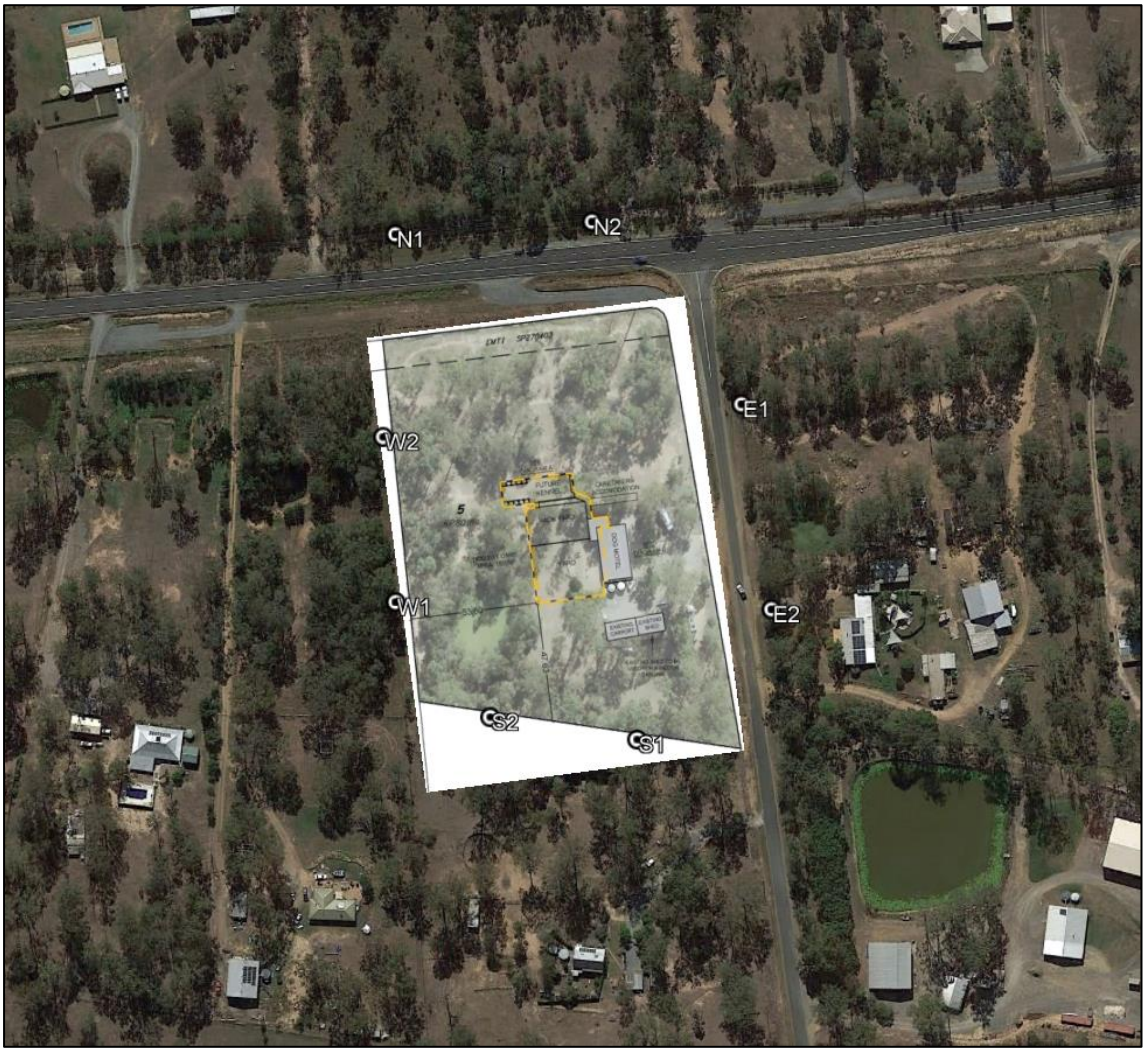
Noise emissions from crowds or groups of people have been derived from prediction calculation methodology presented by M.J. Hayne et al. *Prediction of Noise from Small to Medium Sized Crowds* (Paper Number 133, Proceedings of Acoustics 2011). Where the A-weighted sound power levels from a crowd size, **N**, can be approximated by:

$$L_{WAeq} = 15\ Log\boldsymbol{N} + 64\ dB(A).$$

This prediction methodology applies for a crowd in an outdoor social setting.

This assessment considers the following as the most potentially affected noise sensitive boundaries presented in **Plate 5.1** following.

Plate 5.1: *Site marked and adjacent Lot zoning (Red = Rural Residential). Point receiver locations shown for assessment purposes.*



5.2 Acoustic Treatments

5.2.1 Acoustic Barrier Dog Yard

Noise emissions from the proposed dog yard, can be reduced at the residential zone boundary of with the construction of an acoustic fence or barrier. The proposed fence is 1.8 meters high above dog yard finished ground level. The proposed location of the acoustic fence is shown in **Plan 5.1** below and is included in the following assessment. The item Kennel is assumed to be three metres in height.

The basic design is to reduce noise by around 6-10 dB(A) and can usually be achieved with low cost, standard solutions, of overlapping timber boards or plywood panels. As a guide, the higher the fence, the better the noise reduction achieved. Infill panels can be timber, plywood, etc with a minimum density of 12.5 kg/m2. For example, 100 x 25 mm timber slats with a minimum 25 mm overlap will be effective. Posts can be 100 mm minimum dimension (i.e.. 100 x 100).

Materials other than timber can be used, if required. For example, an alternative to 100 mm timber posts are 75mm x 75mm galvanised square hollow section steel posts. The size and location of openings under or through the barrier must be kept to a minimum.

To be fully effective the fence must extend around to the side boundaries of the property being screened. Landscaping of the fence is recommended, associated with changes in fence design or style to reduce the visual effect of the fence. The use of earth-mounds and landscaping has better acoustical properties than screen fencing alone.

Plate 5.2: *Showing proposed location of acoustic fence marked orange on Plans.*

5.2.2 Dog Motel

Dogs that require overnight stay are currently housed in the existing dog motel on site that has been converted from a single storey dwelling of standard construction and is no longer used as a dwelling. Doors and windows are kept closed at night and onsite inspections confirm air conditioning has been installed. The glass doors have light diffusers on the bottom part of the glazing obscuring the outside view for the dogs. Dog barking at night time was not found during ambient noise monitoring at the site boundary.

For assessment purposes, the façade of the motel assumes 25 dB(A) attenuation through the building envelope. This is achieved with 4mm glazing with weather seals for smaller windows and acoustic seals for glass sliding doors. No further acoustic treatments are proposed.

5.2.3 Future Kennel Design

A kennel is proposed in the future and included in the assessment in this Report. The proposed kennel is enclosed and air conditioned and an approximate height of three meters. Noise attenuation through the building envelope is required to be 25 dB(A) when doors and windows are closed.

An example of external wall and glazing design to achieve 25 dB(A) attenuation for the kennel is presented below. Detailed design can be considered when the plans for the kennel become available.

Table 5.2: *Example forms of construction. (Source: Schedule 2 of the Queensland Development Code Mandatory Part 4.4).*

Minimum R_w	Acceptable forms of construction
35	Single leaf of clay brick masonry at least 110mm thick with: (i) a row of at least 70mm x 35mm timber studs or 64mm steel studs at 600mm centres, spaced at least 20mm from the masonry wall; and (ii) One layer of plasterboard at least 10mm thick fixed to outside face of studs OR Minimum 6mm thick fibre cement sheeting or weatherboards or plank cladding externally, minimum 90mm deep timber stud or 92mm metal stud, standard plasterboard at least 13mm thick internally.
27	Minimum 4mm thick glass with full perimeter *acoustically rated seals*
24	Minimum 4mm thick glass with standard weather seals

5.2.4 Night-time Noise Emissions

The dog yard is not proposed to be in use during the evening and night time. Dogs that require overnight stay are currently housed within the existing dog motel. Doors and windows are to be closed at night. Dog drop-off and collection are not proposed during night time hours

A separated kennel is proposed in the future. Where dogs stay overnight in the kennel, the doors and windows are to remain closed.

5.3 Environmental Noise Emissions

5.3.1 Dog Yard (Daytime Leq)

The measured dog noise has been converted to a sound power level and calculated to the boundary of a residential premises in each direction. The calculated sound level is assessed against the Logan City Planning Scheme presented in **Section 2** and summarised in **Section 3.3** of this report. The location of the noise sources and receivers at the residential zone boundaries and noise contours are shown in **Plate 5.3** following. An assessment of dog barking noise is presented in **Table 5.3**.

Plate 5.3: *Showing the noise contours of dog barking in proposed dog yard. Leq, dB(A), 1s, free field.*

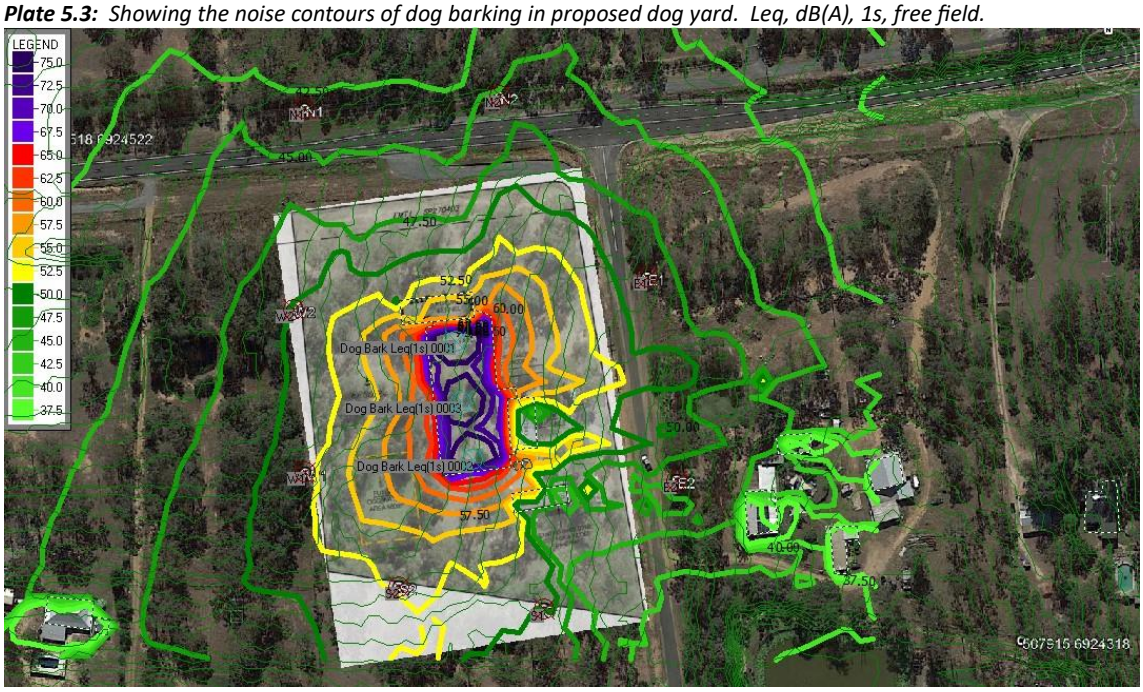


Table 5.3*: Forecast noise emissions and criteria, 20x Large Dogs Barking. Levels are in dB(A), free field.*

20x Dogs Barking					Noise Limit Monday to Saturday			Noise Limit Sunday			Compliance Monday to Saturday			Compliance Sunday		
Receiver	LAeq, (412s)	LAeq 1h	Impulse Adj.	LAeq, 1h, Adj	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
N1	43	-9	5	**39**	52	44	30	52	42	33	**Yes**	**NA**	**NA**	**Yes**	**NA**	**NA**
N2	45	-9	5	**41**	52	44	30	52	42	33	**Yes**	**NA**	**NA**	**Yes**	**NA**	**NA**
E1	49	-9	5	**45**	52	44	30	52	42	33	**Yes**	**NA**	**NA**	**Yes**	**NA**	**NA**
E2	47	-9	5	**43**	52	44	30	52	42	33	**Yes**	**NA**	**NA**	**Yes**	**NA**	**NA**
S1	50	-9	5	**46**	52	44	30	52	42	33	**Yes**	**NA**	**NA**	**Yes**	**NA**	**NA**
S2	53	-9	5	**49**	52	44	30	52	42	33	**Yes**	**NA**	**NA**	**Yes**	**NA**	**NA**
W1	52	-9	5	**48**	52	44	30	52	42	33	**Yes**	**NA**	**NA**	**Yes**	**NA**	**NA**
W2	50	-9	5	**46**	52	44	30	52	42	33	**Yes**	**NA**	**NA**	**Yes**	**NA**	**NA**

5.3.2 Dog Barking Indoors (including Kennel) (Leq)

The measured dog noise has been converted to a sound power level and calculated to the boundary of a residential premises in each direction. The calculated sound level is assessed against the Logan City Planning Scheme presented in **Section 2** and summarised in **Section 3.3** of this report. The sound level attenuation of the building envelope and the kennel are assumed 25 dB(A) as discussed in **Section 5.2.2** and **5.2.3**. Up to twenty dogs are assumed inside the dog motel. When the Kennel is constructed, up to ten dogs are assumed inside the Kennel. The location of the noise sources and receivers at the residential zone boundaries and noise contours are shown in **Plate 5.4** following. An assessment of dog barking noise is presented in **Table 5.4**.

Plate 5.4: *Showing the noise contours of dog barking inside dog motel and kennel. Leq, dB(A), 1s, free field, doors and windows closed.*

Table 5.4: *Forecast noise emissions and criteria, twenty large dogs barking inside dog motel and/or ten large dogs barking inside Kennel. Levels are in Leq, dB(A), free field.*

20x Dogs Indoors					Noise Limit Monday to Saturday			Noise Limit Sunday			Compliance Monday to Saturday			Compliance Sunday		
Receiver	LAeq, (412s)	LAeq 1h	Impulse Adj.	LAeq, 1h, Adj	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
N1	31	-12	5	**24**	52	44	30	52	42	33	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
N2	32	-12	5	**25**	52	44	30	52	42	33	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
E1	33	-9	5	**29**	52	44	30	52	42	33	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
E2	33	-9	5	**29**	52	44	30	52	42	33	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
S1	23	-9	5	**19**	52	44	30	52	42	33	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
S2	27	-9	5	**23**	52	44	30	52	42	33	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
W1	32	-9	5	**28**	52	44	30	52	42	33	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
W2	36	-12	5	**29**	52	44	30	52	42	33	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

Note: -12 dB(A) for group of ten dog in Kennel, barking 206 'barks' per hour.

5.3.3 Dog Barking Indoors (including Kennel) (Night Lmax)

The measured dog noise has been converted to a sound power level and calculated to the boundary of a residential premises in each direction. The calculated sound level is assessed against the Logan City Planning Scheme presented in **Section 2** and summarised in **Section 3.3** of this report. The sound level attenuation of the building envelope and the kennel are assumed 25 dB(A) as discussed in **Section 5.2.2** and **5.2.3**. Ten dogs are assumed inside The location of the noise sources and receivers at the residential zone boundaries and noise contours are shown in **Plate 5.5** following. An assessment of dog barking noise is presented in **Table 5.5**.

Plate 5.5: *Showing the noise contours of dog barking inside dog motel and kennel. Lmax, dB(A), free field, doors and windows closed.*

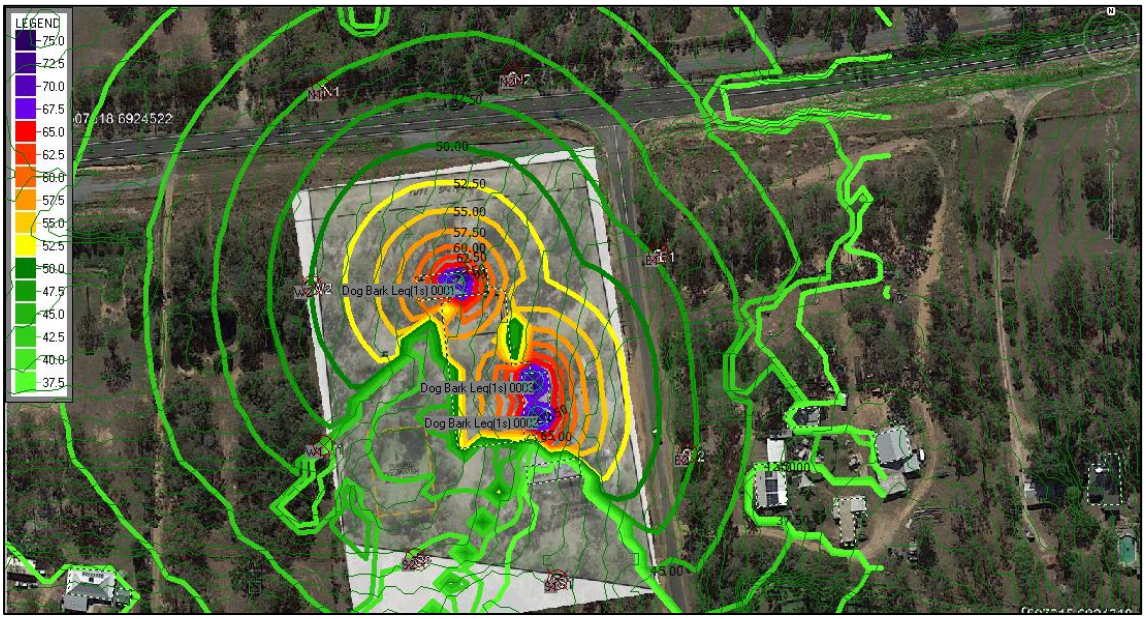


Table 5.5: *Forecast noise emissions and criteria, large dogs barking inside dog motel and/or inside Kennel. Levels are in Lmax, dB(A), free field.*

20x Dogs Barking					Noise Limit Monday to Saturday			Noise Limit Sunday			Compliance Monday to Saturday			Compliance Sunday		
Receiver	LAmax	Adjustment	Impulse Adj.	LAmax, 1h, Adj	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
N2	46		5	**51**	NA	NA	60	NA	NA	60	Yes	Yes	Yes	Yes	Yes	Yes
E1	47		5	**52**	NA	NA	60	NA	NA	60	Yes	Yes	Yes	Yes	Yes	Yes
E2	48		5	**53**	NA	NA	60	NA	NA	60	Yes	Yes	Yes	Yes	Yes	Yes
S1	36		5	**41**	NA	NA	60	NA	NA	60	Yes	Yes	Yes	Yes	Yes	Yes
S2	40		5	**45**	NA	NA	60	NA	NA	60	Yes	Yes	Yes	Yes	Yes	Yes
W1	47		5	**52**	NA	NA	60	NA	NA	60	Yes	Yes	Yes	Yes	Yes	Yes
W2	50		5	**55**	NA	NA	60	NA	NA	60	Yes	Yes	Yes	Yes	Yes	Yes

5.3.4 Vehicle Movement and Crowd

There is expected to be up to 20 vehicles per hour during peak drop off and collection times for the dogs. Vehicles have been treated as a moving line source, traveling an average speed of 5 km/h with 20 vehicle movements per hour. A crowd of 10 people are considered external to the entrance of the dog motel.

The calculated cumulative sound level is assessed against the Logan City Planning Scheme presented in **Section 2** and summarised in **Section 3.3** of this report. The location of the noise sources and receivers at the residential zone boundaries and noise contours are shown in **Plate 5.6** following. An assessment of carpark noise is presented in **Table 5.6**.

Plate 5.6: *Showing the noise contours of vehicle movements (only). Leq, dB(A), 1 hour, free field.*

Table 5.6: *Forecast noise emissions and criteria, 20x vehicle movement per hour and crowd of ten people in carpark. Levels are in Leq, dB(A), free field.*

Carpark and Crowd Noise				Noise Limit Monday to Saturday			Noise Limit Sunday			Compliance Monday to Saturday			Compliance Sunday		
Receiver	LAeq, (1h)	Impulse Adj.	LAeq, 1h, Adj	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
N1	20		**20**	52	44	30	52	42	33	Yes	Yes	**NA**	Yes	Yes	**NA**
N2	28		**28**	52	44	30	52	42	33	Yes	Yes	**NA**	Yes	Yes	**NA**
E1	33		**33**	52	44	30	52	42	33	Yes	Yes	**NA**	Yes	Yes	**NA**
E2	35		**35**	52	44	30	52	42	33	Yes	Yes	**NA**	Yes	Yes	**NA**
S1	22		**22**	52	44	30	52	42	33	Yes	Yes	**NA**	Yes	Yes	**NA**
S2	27		**27**	52	44	30	52	42	33	Yes	Yes	**NA**	Yes	Yes	**NA**
W1	30		**30**	52	44	30	52	42	33	Yes	Yes	**NA**	Yes	Yes	**NA**
W2	23		**23**	52	44	30	52	42	33	Yes	Yes	**NA**	Yes	Yes	**NA**

6.0 Assessment Conclusions and Recommendations

6.1 Assessment to Logan City Planning Scheme

Attended and unattended noise monitoring of the animal keeping facility (currently in use) demonstrates that the Rural Residential Zone Code Performance Outcomes P08 and P018 of the Logan City Planning Scheme (summarised in **Section 2.1** of this report) are generally achieved through the Acceptable Outcomes below:

Acceptable Outcome A07;

a. Noise emissions from the animal keeping facility, which is currently in use, have been assessed to be compliant by way of measurement of dog barking at the boundary of adjacent residential premises, as set out in section 4 of this Report. The measured noise emissions have been assessed to the standards of Table 3.2.1.1 of Logan City Council Planning Scheme Policy 3.
b. All adjacent Lots have been considered residential use and this performance outcome has not been applied.
c. to f. Not part of this report.

Acceptable Outcome A018;

a. to f. These outcomes are considered planning matters and not part of this report. The facility is generally well set back from boundaries. An acoustic fence for visual screening and noise attenuation (AO f. iii.) is considered around the dog yard (runs) to further reduce noise emissions and reduce visual stimulation for the dogs (which may reduce barking frequency).

6.2 Conclusions

It is concluded that:

- The relevant parts of the Rural Residential Zone Code Performance Outcome P08 and P018 (for noise emissions) are generally achieved, determined by way of measurement at the boundary of adjacent residential premises;
- An acoustic fence for screening (AO 18 f. iii.) is considered around the dog runs to further reduce noise emissions and reduce visual stimulation for the dogs (which may reduce barking frequency);
- Dogs that stay overnight are kept indoors in the dog motel during the evening and nighttime;
- Doors and windows are generally kept closed during the evening and nighttime and the dog motel is air conditioned;
- Where the Kennel is proposed in the future, it must be enclosed and air conditioned during evening and nigh time periods;
- Dogs are generally quiet and bark more when excited, such as when people (other than staff) approach the facility. This generally occurs during the morning and afternoon pick up;
- Staff were observed to discourage continuous barking actively successfully.

6.3 Recommendations

It is recommended that:

- The facility be approved to accommodate twenty dogs, including overnight stay in the dog motel;
- Noise emissions from the proposed dog yard (run), can be reduced at the residential zone boundary with the construction of an acoustic fence or barrier. 1.8 meters high above finished ground level. The proposed location of the acoustic fence is shown in **Plate ES1** following. The proposed acoustic fence around the dog runs must be constructed with a density of 12 Kg/m^2, be continuous and gap free;
- Dogs are kept inside the dog motel during evening and nighttime periods with doors and windows closed during nighttime periods;
- The proposed future Kennel be constructed to achieve noise attenuation of at least 25 dB(A) and be enclosed and air conditioned for evening and nighttime use.

6.4 Caution

The conclusions and recommendations above are based solely on supplied information and surveyed under operating conditions available at that time. The average sound levels are likely to change slightly from day to day and will change from location to location depending on the number and type of dogs at the facility. The conclusions and recommendations take no account of degradation or maintenance of equipment over time, nor the circumstances of instances of use of equipment as may occur from time to time.

APPENDIX A: Definitions

Noise assessment terms used in this Report include-

Event maximum sound pressure level ($L_{A\%,adj,T}$), L01

The L01 level is calculated as the noise level equalled and exceeded for 1% of the measurement time, for example 9 seconds in any 15 minute interval. L01 is an appropriate level to characterise single events, such as from train bypass.

Average maximum sound pressure level ($L_{A\%,adj,T}$), L10

The "L10" level is an indicator of "steady-state" noise or intrusive noise conditions from traffic, music and other relatively non-impulsive noise sources. The L10 level is calculated as the noise level equalled and exceeded for 10% the measurement time, for example 90 seconds in any 15 minute interval. The measured L10 time-intervals for day/evening/night are arithmetically averaged to present the "average maximum" levels of the environment for day/evening/night. The level can be adjusted for tonality or impulsiveness.

Background sound pressure level ($L_{A90,T}$), L90

Commonly called the "L90" or "background" level and is an indicator of the quietest times of day, evening or night. The L90 level is calculated as the noise level equalled and exceeded for 90% the measurement time. The measured L90 time-intervals are arithmetically averaged to present the "average background" levels of the environment for day/evening/night. The level is recorded in the absence of any noise under investigation. The level is not adjusted for tonality or impulsiveness.

Rating Background Level (RBL)

The overall, single-figure, background level representing each assessment period (day/evening/night) over the whole monitoring period (as opposed to over each 24-hour period used for the assessment of background level). This is defined as the median value of all the day evening or night assessment background levels.

Equivalent Continuous or time average sound pressure level ($L_{Aeq,T}$), Leq

Commonly called the "Leq" level it is the logarithmic average noise level from all sources far and near. The level can be adjusted for tonality.

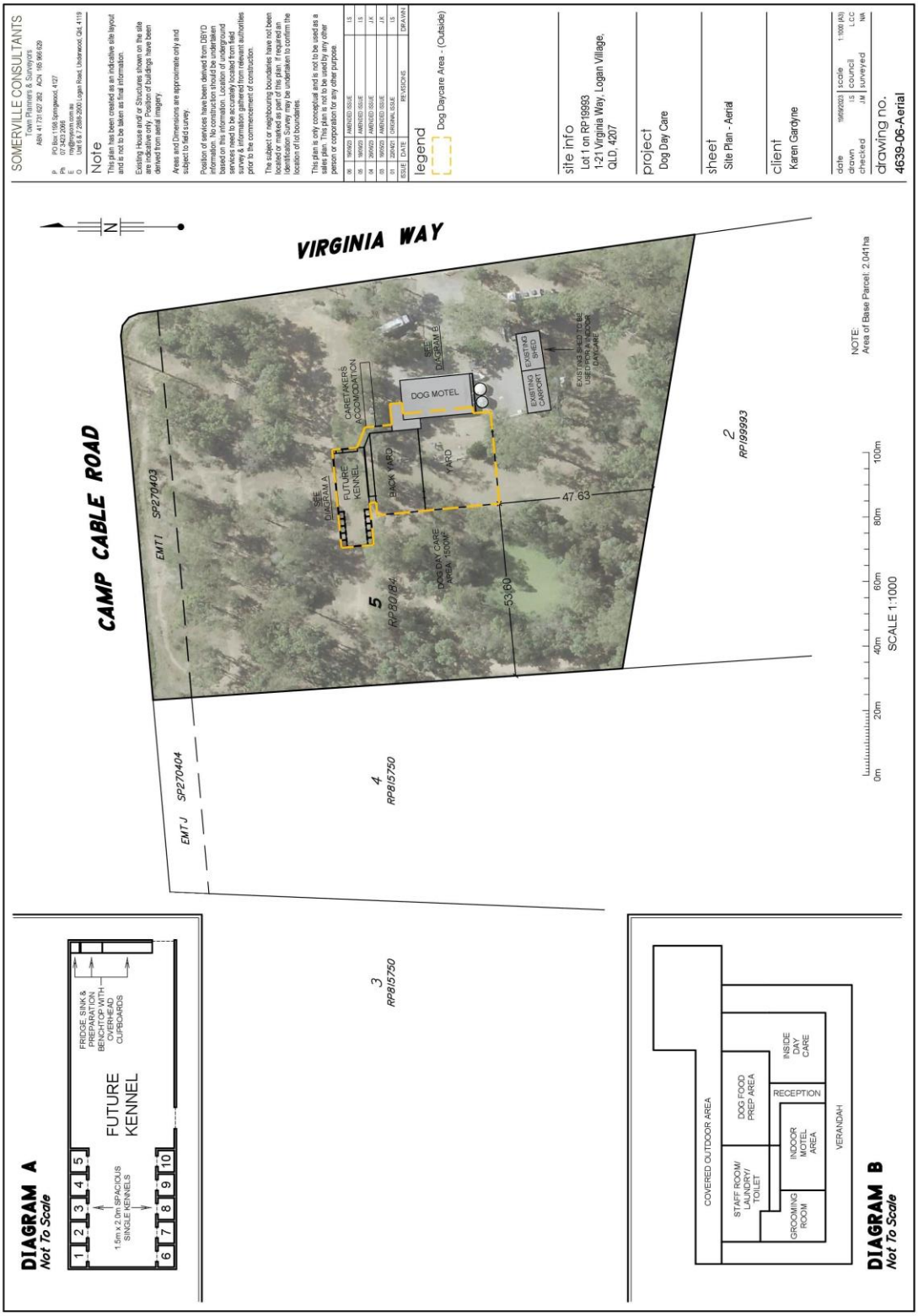
Adjustments to levels

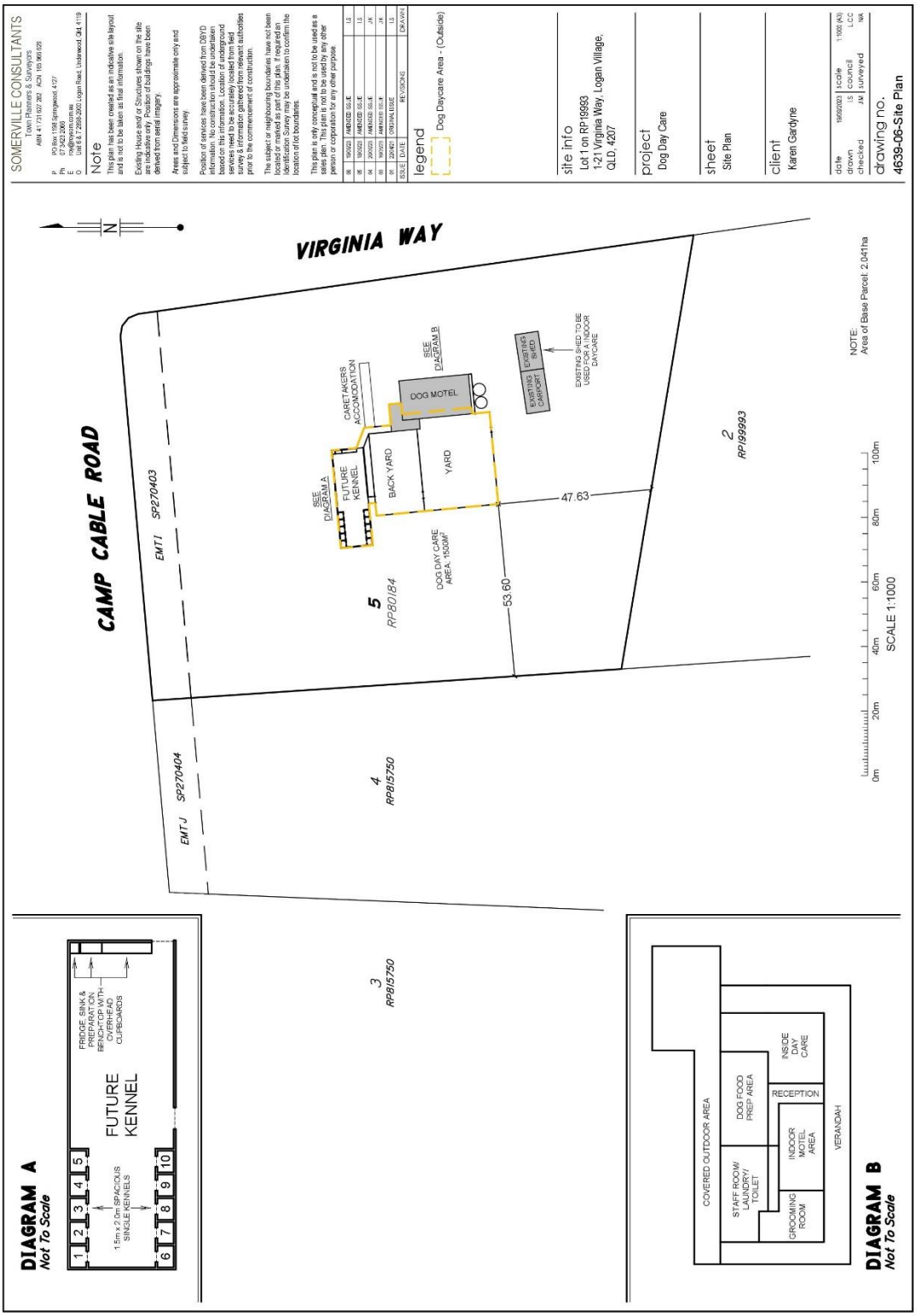
Under some circumstances, noise levels may be "adjusted" for tonal or impulsive characteristics by the addition of +2 or +5 dB. The adjustments are made in accordance with AS1055. Measured noise levels are not normally adjusted for the purposes of a traffic noise assessment.

Free-field level

A sound level that is measured at a distance of more than 3.5 metres from a wall or facade.

APPENDIX B: Plans

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Note
This plan has been created as an indicative site layout and is not to be taken as final information.
Existing House and/or Structures shown on the site are indicative only. Position of buildings have been derived from aerial imagery.
Areas and Dimensions are approximate only and subject to field survey
Position of services have been derived from DBYD information and should be considered indicative only based on this information. Location of underground services need to be accurately located from field survey & information gathered from relevant authorities prior to the commencement of construction.
The subject or neighbouring boundaries have not been located or marked as part of this plan. If required an identification Survey may be undertaken to confirm the location of the boundaries.
This plan is only conceptual and is not to be used as a sales plan. This plan is not to be used by any other person or corporation for any other purpose.
legend
Dog Daycare Area - (Outside)
site Info
Lot 1 on RP19993
1-21 Virginia Way, Logan Village, QLD, 4207
project
Dog Day Care
sheet
Site Plan
client
Karen Gardyne
drawing no.
4639-06-Site Plan
VIRGINIA WAY
CAMP CABLE ROAD
EMT1 SP270403
EMT J SP270404
5 RP80184
4 RP815750
3 RP815750
2 RP19993
DOG MOTEL
CARETAKERS ACCOMODATION
FUTURE KENNEL
BACK YARD
YARD
EXISTING SHED
EXISTING CARPORT
EXISTING SHED TO BE USED FOR A INDOOR DAYCARE
SEE DIAGRAM A
SEE DIAGRAM B
DOGS DAY CARE AREA 1500M²
47.63
53.60
NOTE:
Area of Base Parcel: 2.041ha
SCALE 1:1000
DIAGRAM A
Not To Scale
FUTURE KENNEL
1.5m x 2.0m SPACIOUS SINGLE KENNELS
FRIDGE, SINK & PREPARATION BENCHTOP WITH OVERHEAD CUPBOARDS
DIAGRAM B
Not To Scale
COVERED OUTDOOR AREA
STAFF ROOM/ LAUNDRY/ TOILET
GROOMING ROOM
INDOOR MOTEL AREA
DOG FOOD PREP AREA
RECEPTION
INSIDE DAY CARE
VERANDAH