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Building 4 - Hollinsworth Road, Marsden Park

Condition B39 - Operational Noise Investigation

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1 INTRODUCTION

Acoustic Logic Consultancy has been engaged to prepare an Acoustic Report for the existing development, building 4, located at Hollinsworth Road, Marsden Park.

This report has been prepared to address Condition B39 in '*Development Consent*' by the NSW Government, Department of Planning and Environment, application no. SSD 8606- as follows:

Operational Noise Verification

B39. Within three months of the commencement of operation of building 4 in stage 2 or any building in stages 3 or 4, the Applicant must undertake noise testing and prepare a Noise Validation Report (NVR) to demonstrate that the operation of the development is consistent with the predicted noise levels in the noise assessment submitted in the EIS and RTS. The NVR must:
(a) be prepared by an appropriately qualified and experienced acoustical consultant;
(b) be approved by the Planning Secretary;
(c) ensure the development is consistent with the noise predictions made in the EIS and RTS; and
(d) include a description of contingency measures in the event management actions are not effective in reducing noise levels to an acceptable level.

This office has been advised as following:

- Operating hours of Building 1 is 24hours/ 7days and operating hours of Building 4 is 7am-5pm (mechanical plant running 24hours/ 7days);
- Building 2A and building 2B is currently under construction stage, building structures are completed;
- The working hours (construction) of building 2A and building 2B are:
    - 7:00am -6:00pm, Monday to Friday
    - 8:00am -1:00pm, Saturday

As requested in Condition B39, noise assessment submitted in the EIS and RTS will be referenced in this report. Also, this assessment is based on previous noise monitoring data and engineering assumptions in noise assessment submitted in the EIS and RTS, especially:

- Report of '*Noise and vibration impact assessment, Lot 23 & 24 Hollinsworth Road Masterplan, Marsden Park*', Prepared for Logos Property Pty Ltd, provided by EMM Consulting Pty Limited, dated 13 November 2017.
- Report of '*Re: Addendum report - Marsden Park Warehousing and Industrial Estate – Noise and vibration impact assessment for the isolated dwelling at 105 Hollinsworth Road*', provided by EMM Consulting Pty Limited, dated 7 March 2018.

2 SITE DESCRIPTION

The project site is located at the Hollinsworth Road, Marsden Park.

Report of '*Noise and vibration impact assessment*, *Lot 23 & 24 Hollinsworth Road…*', indicated the following receivers "*have the potential to be impacted by future site noise*":

- Receiver 1: 140 Hollinsworth Road, Marsden Park;
- Receiver 2: Residence, located at 105 Stockholm Avenue, Hassall Grove;
- Receiver 3: Residence, located at 85 Stockholm Avenue, Hassall Grove;
- Receiver 4: Residence, located at 67B Stockholm Avenue, Hassall Grove;
- Receiver 5: Residence, located at 9 Amelia Way, Bidwill;
- Receiver 6: Residence, located at 11 Pine Crescent, Bidwill;
- Receiver 7: Residence, located at 5 Ramosus Way, Bidwill,
- Receiver 8: Baitul Huda Mosque, located at 45 Hollinsworth Road, Marsden Park;

Report of '*Re: Addendum report - Marsden Park Warehousing and Industrial…105 Hollinsworth Road*', provided by EMM Consulting Pty Limited, dated 7 March 2018. Indicated that:

"*The dwelling at 105 Hollinsworth Road is located approximately 190 m east of the eastern site boundary an d will be referenced herein as assessment location R9*."

A site map with measurement description is presented in Figure 1.

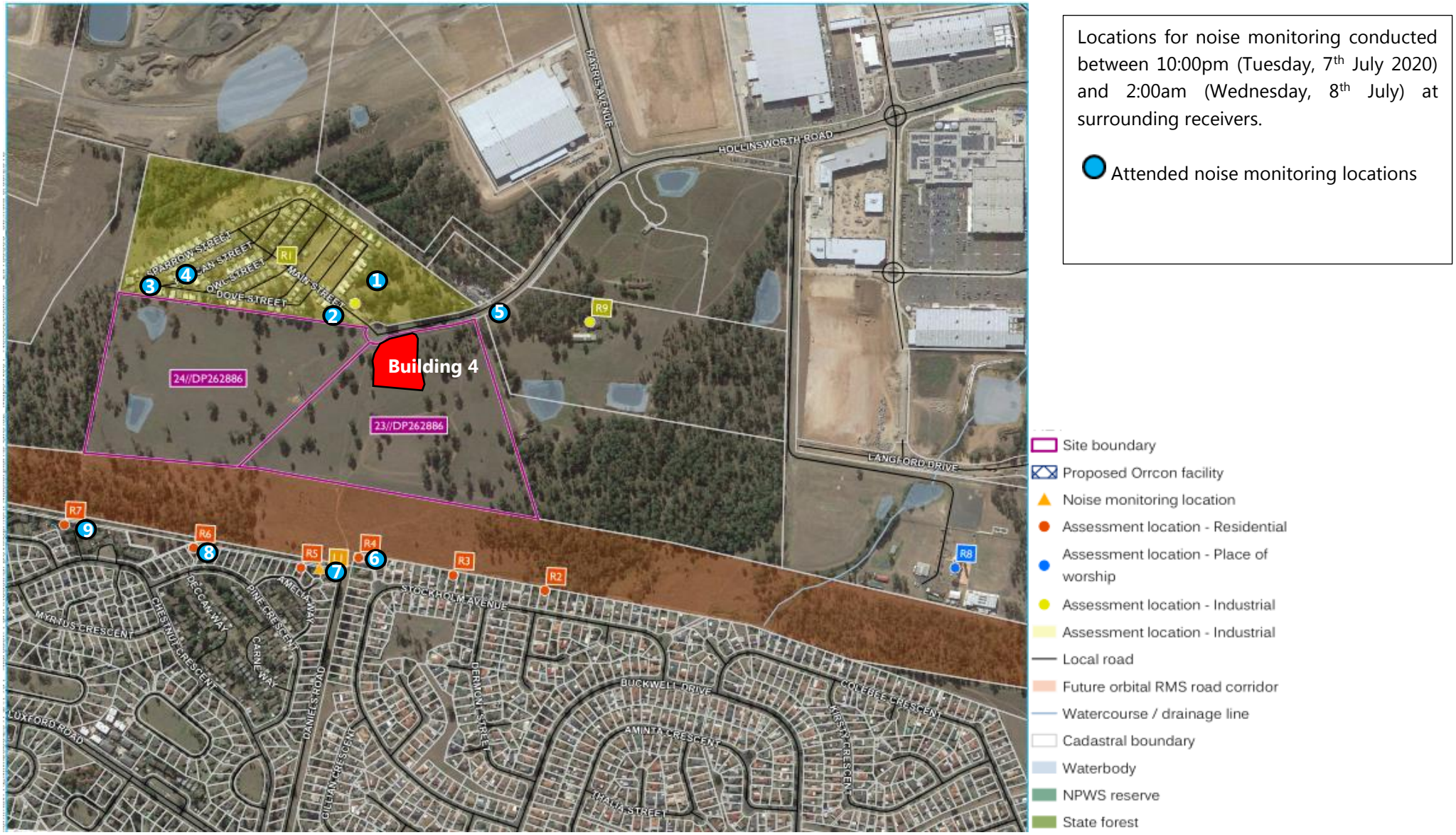

Figure 1: Noise monitoring and assessment locations (from '*Re: Addendum report - Marsden Park …,*', provided by EMM Consulting Pty Limited, dated 7 March 2018

3 BACKGROUND NOISE LEVELS

Existing environmental noise survey (see figure 1) was based on a long-term unattended monitoring in the following documents:

- *Noise and vibration impact assessment, Lot 23 & 24 Hollinsworth Road Masterplan, Marsden Park'*, Prepared for Logos Property Pty Ltd, provided by EMM Consulting Pty Limited, dated 13 November 2017.
- Report of *'Re: Addendum report - Marsden Park Warehousing and Industrial Estate – Noise and vibration impact assessment for the isolated dwelling at 105 Hollinsworth Road*', provided by EMM Consulting Pty Limited, dated 7 March 2018.

3.1 MEASURED BACKGROUND NOISE LEVELS

Section 3.2.1 of '*Noise and vibration impact assessment…Marsden Park*' states the following:

> "*To establish the existing ambient noise environment of the area, unattended noise monitoring as conducted at one location representative of residential receivers surrounding the project, as described in Table 3.2*."

Table 3.3 in Section 3.2.1 of '*Noise and vibration impact assessment…Marsden Park*', outlined the rating background levels of unattended noise monitoring (see table 1 below).

Table 1 – Measured Background Noise Level (Unattended Noise Monitor)

Location	Time of Day	Rating Background Level dB(A)L_{90}
Amelia Way, Bidwill *'within the noise catchment representative of these residences'*, (see figure 1)	Day	37
	Evening	35
	Night	31

4 OPERATIONAL NOISE LIMITS

4.1 DEVELOPMENT CONSENT CONDITIONS

Condition B36 in '*Development Consent*' by the NSW Government, Department of Planning and Environment, application no. SSD 8606 states the following:

B36. The Applicant must ensure that noise generated by operation of the development does not exceed the noise limits in Table 2.

Table 2: *Noise Limits dB(A)*

Location	Day $L_{Aeq(15\ minute)}$	Evening $L_{Aeq(15\ minute)}$	Night $L_{Aeq(15\ minute)}$	Night $L_{A1(1\ minute)}$	$L_{Aeq(period)}$
All residential properties located to the south of the site	42	40	36	46	N/A
R8 – Place of Public Worship (when in use)	N/A	N/A	N/A	N/A	50

Note: *Noise generated by the development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) in Fact Sheet C of the EPA's Noise Policy for Industry. Refer to the plan in Appendix B for the location of residential sensitive receivers.*

4.2 OPERATIONAL NOISE LEVELS

Report of '*Noise and vibration… Lot 23 & 24 Hollinsworth Road Masterplan, Marsden Park*', presented noise criteria in table 5.5 (from building 4 (Project Site) to potential receivers (R1 to R8))– as follows:

Assessment location	Period	Predicted $L_{Aeq(15min)}$ noise level, dB			Noise criteria, dB	Exceedance, dB		
		Calm	Winds	F class inversion		Calm	Winds	F class inversion
R1	Day	48	48	N/A	70 $L_{Aeq(Day)}$	Nil	Nil	N/A
	Evening	48	48	N/A	70 $L_{Aeq(Evening)}$	Nil	Nil	N/A
	Night	45	46	46	70 $L_{Aeq(Night)}$	Nil	Nil	Nil
R2	Day	32	34	N/A	42 $L_{Aeq(15min)}$	Nil	Nil	N/A
	Evening	32	34	N/A	40 $L_{Aeq(15min)}$	Nil	Nil	N/A
	Night	31	33	33	36 $L_{Aeq(15min)}$	Nil	Nil	Nil
R3	Day	34	36	N/A	42 $L_{Aeq(15min)}$	Nil	Nil	N/A
	Evening	34	36	N/A	40 $L_{Aeq(15min)}$	Nil	Nil	N/A
	Night	33	35	35	36 $L_{Aeq(15min)}$	Nil	Nil	Nil
R4	Day	38	40	N/A	42 $L_{Aeq(15min)}$	Nil	Nil	N/A
	Evening	38	39	N/A	40 $L_{Aeq(15min)}$	Nil	Nil	N/A
	Night	36	38	38	36 $L_{Aeq(15min)}$	Nil	2	2
R5	Day	38	39	N/A	42 $L_{Aeq(15min)}$	Nil	Nil	N/A
	Evening	38	38	N/A	40 $L_{Aeq(15min)}$	Nil	Nil	N/A
	Night	35	37	37	36 $L_{Aeq(15min)}$	Nil	1	1
R6	Day	37	38	N/A	42 $L_{Aeq(15min)}$	Nil	Nil	N/A
	Evening	37	38	N/A	40 $L_{Aeq(15min)}$	Nil	Nil	N/A
	Night	34	35	36	36 $L_{Aeq(15min)}$	Nil	Nil	Nil
R7	Day	33	33	N/A	42 $L_{Aeq(15min)}$	Nil	Nil	N/A
	Evening	33	35	N/A	40 $L_{Aeq(15min)}$	Nil	Nil	N/A
	Night	31	31	33	36 $L_{Aeq(15min)}$	Nil	Nil	Nil
R8	Day	26	29	N/A	50 $L_{Aeq(Day)}$ [1]	Nil	Nil	N/A
	Evening	26	29	N/A	50 $L_{Aeq(Evening)}$ [1]	Nil	Nil	N/A
	Night	25	28	28	50 $L_{Aeq(Night)}$ [1]	Nil	Nil	Nil

Notes: *1. The difference between internal and external noise levels is 10 dB with windows open.*
2. N/A = Not applicable.

Report of '*Re: Addendum report - Marsden Park Warehousing and Industrial… 105 Hollinsworth Road*', presented noise criteria in table 6 (from building 4 (Project Site) to receivers (R9))– as follows:

Assessment location	Period	Predicted $L_{Aeq(15min)}$ noise level, dB			Noise criteria, dB	Exceedance, dB		
		Calm	Winds	F class inversion		Calm	Winds	F class inversion
R9[1]	Day	35	37	N/A	70 $L_{Aeq(Day)}$	Nil	Nil	N/A
	Evening	35	37	N/A	70 $L_{Aeq(Evening)}$	Nil	Nil	N/A
	Night	34	36	36	70 $L_{Aeq(Night)}$	Nil	Nil	Nil

Notes: 1. Within an industrial zone as per the BCC Growth Centre DCP, therefore industrial noise criteria are applicable in accordance with Section 2 of the INP (EPA 2000).

2. Day is from 7 am to 6 pm Monday to Saturday, and from 8 am to 6 pm on Sundays and public holidays; Evening is from 6 pm to 10 pm; Night is the remaining periods.

4.3 SUMMARISED OPERATIONAL NOISE CRTERIA – NOISE ASSESSMENT

The summarised operational noise criteria summarised in noise assessment submitted in the EIS and RTS from the site (building 4) to the assessment locations are presented in Table 2 below:

Table 2 -Summarised Operational Noise Levels

Assessment Location	Time of the day	Noise Criteria dB(A) L_{Aeq}
R1	Day	70 $L_{Aeq(day)}$
	Evening	70 $L_{Aeq(eve)}$
	Night	70 $L_{Aeq(night)}$
R2 to R7	Day	42 $L_{Aeq(15min)}$
	Evening	40 $L_{Aeq(15min)}$
	Night	36 $L_{Aeq(15min)}$
R8	When in use	50 $L_{Aeq(when\ in\ use)}$ - Externally 40 $L_{Aeq(when\ in\ use)}$ - Internally
R9	Day	70 $L_{Aeq(day)}$
	Evening	70 $L_{Aeq(eve)}$
	Night	70 $L_{Aeq(night)}$

4.4 OPERATIONAL NOISE CRITERIA (CONDITION B36)

The operational noise criteria from the site (building 1) to the assessment locations are presented in Table 3 below:

Table 3 – Operational noise Criteria (Condition B36)

Assessment Location	Day $L_{Aeq(15min)}$	Evening $L_{Aeq(15min)}$	Night $L_{Aeq(15min)}$	Night $L_{A1(1min)}$	dB(A) $L_{eq(period)}$
R2 to R7 – Residences	42	40	36	46	N/A
R8 – Place of Worship (when in use)	N/A	N/A	N/A	N/A	50

5 NOISE MONITORING

Attended noise monitoring data will be used as a basis for this assessment are detailed in the following sections.

5.1 MEASUREMENT EQUIPMENT

Attended noise measurements were obtained using a Norsonic 140 Sound Level Analyser, set on A- weighted fast response. The sound level meter was calibrated before and after the measurements using a Norsonic 1251 Sound Level Calibrator. No significant drift was recorded.

5.2 MEASUREMENT LOCATIONS AND PERIOD

The measurement locations are shown in Figure 1 and discussed below.

5.2.1 Attended Noise Measurements

Attended noise measurement was carried out between 10:00pm (Tuesday, 7th July 2020) and 2:00am (Wednesday, 8th July) at surrounding receivers.

5.2.1.1 Measured Noise Levels (attended)

Measured noise levels from the attended noise monitoring are presented in Table 4 below.

Table 4- Measured Operational Noise Levels

Location	Measured Noise Level dB(A)$L_{eq(15min)}$	Observation	Operational Noise Levels	Under Noise Levels?
Location 1 within R1	Noise from project site Inaudible @ Background noise 41	Operational noise from building 4 to Location 1 is inaudible.	70 $L_{Aeq(night)}$	Yes
Location 2 within R1	Noise from project site Inaudible @ Background noise 39	Operational noise from building 4 to Location 1 is inaudible.		Yes
Location 3 within R1	32	Mechanical plant operational noise, and vehicle movement noise from building 1		Yes
Location 4 within R1	36	Mechanical plant operational noise, and vehicle movement noise from building 1		Yes
Location 5 Representing R8	Noise from project site Inaudible @ Background noise 45	The operational noise (mainly mechanical noise) generated from 145 Hollinsworth Road, Marsden Park is masking the noise generated from building 1 to R8 and R9.	50 $L_{Aeq(when\ in\ use)}$ Externally	Yes
Location 5 Representing R9			70 $L_{Aeq(night)}$	Yes
Location 6 Representing R2, R3 and R4	Noise from project site Inaudible @ Background noise 43	Operational noise from building 4 to Location 6 is inaudible.	Night-time 36 dB(A) $L_{Aeq(15min)}$	Yes
Location 7 Representing R5	Noise from project site Inaudible @ Background noise 41	Operational noise from building 4 to Location 7 is inaudible.		Yes
Location 8 Representing R6	Noise from project site Inaudible @ Background noise 36	Operational noise from building 4 to Location 8 is inaudible.		Yes
Location 9 Representing R7	Noise from project site Inaudible @ Background noise 42	Operational noise from building 4 to Location 9 is inaudible.	70 $L_{Aeq(night)}$	Yes

Note:

1. Inaudibility means that the noise under investigation is approximately 7-10 dB(A) below the ambient noise level in the space.

Measured noise levels from the attended noise monitoring regarding operational noise criteria of Condition B36 are presented in Table 5 below.

Table 5- Measured Operational Noise - Condition B36

Location	Measured Noise Level dB(A)$L_{eq(15min)}$	Condition B36 Noise Criteria	Comply?
Location 5 Representing R8	Noise from project site Inaudible @ Background noise 45	$50L_{eq(period)}$ (When in use)	Yes
Location 6 Representing R2, R3 and R4	Noise from project site Inaudible @ Background noise 43	Night – $36L_{Aeq(15min)}$ Night – 46 $L_{A1(1min)}$	Yes
Location 7 Representing R5	Noise from project site Inaudible @ Background noise 41		Yes
Location 8 Representing R6	Noise from project site Inaudible @ Background noise 36		Yes
Location 9 Representing R7	Noise from project site Inaudible @ Background noise 42		Yes

Note:

1. Inaudibility means that the noise under investigation is approximately 7-10 dB(A) below the ambient noise level in the space.

6 FINDINGS

The representative noise monitoring on site reflects building 4 operating with simultaneous mechanical plant in operating. Attended noise measurement was carried out by ALC between 10:00pm (Tuesday, 7th July 2020) and 2:00am (Wednesday, 8th July) at surrounding receivers, based on noise assessment submitted in the EIS and RTS.

Based on the measurements results, it is noted:

- essentially, noise monitoring conducted within southern receivers (R2, R3, R4, R5, R6 and R7) indicated that operational noise from building 4 to southern receivers is inaudible.

- noise monitoring results have been found within acceptable limits to the operational noise levels for all assessment receivers, as presented in the following report:

    - Report of '*Noise and vibration impact assessment, Lot 23 & 24 Hollinsworth Road Masterplan, Marsden Park*', Prepared for Logos Property Pty Ltd, provided by EMM Consulting Pty Limited, dated 13 November 2017.
    - Report of '*Re: Addendum report - Marsden Park Warehousing and Industrial Estate – Noise and vibration impact assessment for the isolated dwelling at 105 Hollinsworth Road*', provided by EMM Consulting Pty Limited, dated 7 March 2018.

- the potential sleep disturbance impacts from operation of the project during the night period are unlikely; however, the facility shall manage noise as described in '*mitigation and management*' section of noise assessment submitted in the EIS and RTS to avoid maximum noise level events.

Generally, noise survey above indicates that operational noise emissions from existing development, building 4, located at Hollinsworth Road, Marsden Park are within acceptable limits for the existing receivers adjacent to the project site.

Given this, the noise criteria of Condition B36 in '*Development Consent*' by the NSW Government, Department of Planning and Environment, application no. SSD 8606, has been implemented to the satisfaction of the acoustic consultant.

7 CONCLUSION

Acoustic Logic Consultancy has been engaged to prepare an Acoustic Report for the existing development, building 4, located at Hollinsworth Road, Marsden Park.

Condition B39 in '*Development Consent*' by the NSW Government, Department of Planning and Environment, application no. SSD 8606, has been address in this report. Generally, the measurement results satisfy the noise criteria of Condition B36 in '*Development Consent*' by the NSW Government, Department of Planning and Environment, application no. SSD 8606.

We trust this information is satisfactory. Please contact us should you have any further queries.

Yours faithfully,

Acoustic Logic Pty Ltd
Hugh Cao