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Attended Construction Dust, Noise & Vibration Monitoring Report

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TABLE OF CONTENTS

1 INTRODUCTION 4
2 SITE DESCRIPTION AND THE PROPOSAL 4
2.1 GENERAL PROJECT DESCRIPTION 4
2.2 CURRENT WORKS STAGE 4
2.3 APPROVED HOURS 5
2.4 SENSITIVE RECEIVERS 6
3 CONSTRUCTION DUST MONITORING 8
3.1 DUST MANAGEMENT LEVELS 8
3.2 AIR QUALITY CATEGORIES 8
3.3 DUST MONITORING 9
3.3.1 Dust Monitoring Descriptors 9
3.3.2 Equipment Used 9
3.4 AIRMET PARTICULATE MONITOR LOCATIONS 10
3.5 DUST MONITOR PHOTOS 11
3.5.1 Eastern Boundary - ER0220008 11
3.5.2 Northern Boundary - ER0423009 12
3.6 PARTICLUATE GRAPHS 13
3.7 24-HOUR AVERAGE PARTICULATE COUNT ASSESSMENT 16
3.8 1HR AIR QUALITY CATERGORY ASSESSMENT 17
3.9 SUMMARY OF WIND CONDITIONS 17
3.9.1 Dust Monitoring Impact Analysis 18
3.10 DISCUSSION 18
3.10.1 Eastern Boundary 18
3.10.2 Northern Boundary 18
4 CONSTRUCTION NOISE 19
4.1 GENERAL 19
4.1.1 Ambient Noise Descriptors 19
4.1.2 Equipment Used 19
4.1.3 Measurement Locations 19
4.2 CONSTRUCTION NOISE MANAGEMENT LEVELS 21
4.3 NOISE MEASUREMENTS 21
4.4 DISCUSSION 21
5 CONSTRUCTION VIBRATION 22
5.1 GENERAL 22
5.1.1 Equipment Used 22
5.1.2 Measurement Locations 22
5.2 CONSTRUCTION VIBRATION MANAGEMENT LEVELS 24
5.2.1 Amenity Management 24
5.2.2 Structure Damage Risk Criteria 25
5.3 VIBRATION MEASUREMENTS 26
5.4 DISCUSSION 26
6 CONCLUSION 27

1 INTRODUCTION

Acoustic Logic has been engaged to complete attended measurements for dust, noise and vibration associated with ongoing construction activities at the Hammond care Greenwich Hospital Redevelopment.

2 SITE DESCRIPTION AND THE PROPOSAL

2.1 GENERAL PROJECT DESCRIPTION

The Greenwich Hospital redevelopment project approved under SSD-13619238 consists of the following:

- Demolition of the existing hospital building and associated facilities at the site;
- Construction of a new hospital facility and integrated healthcare uses and services, including:
- A new 7 storey main hospital building.
- Two new 5-6 storey serviced self-care housing buildings (serviced seniors living);
- A new 2-3 storey respite care building.
- Construction of associated site facilities and services, including pedestrian and vehicular access and basement parking.
- Site landscaping and infrastructure works;
- Utilities works including electrical and water supply works outside property boundary; and
- Preservation of Pallister House which will continue to host dementia care and administrative functions.

2.2 CURRENT WORKS STAGE

Current construction stage can generally be described as bulk excavation works. This includes:

- Excavation works generally using hydraulic hammers, rippers and bucket attachments
- Dozing works for bulk movement of material
- Bulk earthworks loading activities on to Medium Rigid trucks with trailer, including vehicle movement on local roads

2.3 APPROVED HOURS

The approved hours under SSD-13619238 are detailed in Conditions D4 to D8 repeated below:

Construction Hours

D4. Construction, including the delivery of materials to and from the site, may only be carried out between the following hours:

(a) between 7:30am and 5:30pm, Mondays to Fridays inclusive; and

(b) between 8am and 1pm, Saturdays.

No work may be carried out on Sundays or public holidays.

D5. Construction activities may be undertaken outside of the hours in condition D4 if required:

(a) by the Police or a public authority for the delivery of vehicles, plant or materials; or

(b) in an emergency to avoid the loss of life, damage to property or to prevent environmental harm; or

(c) where the works are inaudible at the nearest sensitive receivers; or

(a) for the delivery, set-up and removal of construction cranes, where notice of the crane-related works is provided to the Planning Secretary and affected residents at least seven days prior to the works; or

(b) where a variation is approved in advance in writing by the Planning Secretary or his nominee if appropriate justification is provided for the works.

D6. Notification of such construction activities as referenced in condition D5 must be given to affected residents before undertaking the activities or as soon as is practical afterwards.

D7. Construction works may be undertaken outside of the hours in condition D4, unless directed otherwise by the Planning Secretary, between the following hours: Saturday: 1pm to 3:30pm if construction works achieve construction noise management levels for 'Outside recommended standard hours' detailed in the *Interim Construction Noise Guideline* (DECC, 2009).

D8. Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours:

(a) 9am to 12pm, Monday to Friday;

(b) 2pm to 5pm Monday to Friday; and

(c) 9am to 12pm, Saturday.

2.4 SENSITIVE RECEIVERS

The nearest/potentially most impacted sensitive receivers surrounding the site representative of noise catchments have been identified and as summarised below. An aerial photo of the site indicating nearby noise sensitive receivers and the catchment areas, and the ambient noise measurement locations is presented in Figure 1

Table 1 – Sensitive Receiver

Receiver (Refer Figure 1)	Receiver Type	Comment
R1	Residential	Residential properties along the western boundary of the site 117, 117A & 117B River Road, Greenwich.
R2	Residential	Residential properties to the north of the site, across River Road – 102 to 120 River Road, Greenwich.
R3	Residential	Residential properties to the east of the site, across St Vincent's Road – 10 to 20 St Vincent's Road, Greenwich.
R4	Residential	Residential properties along the southern boundary of the site – 24 to 55 Gore Street, Greenwich
E1	Educational	Greenwich Public School to the northwest across River Road



Figure 1 – Site Description (Source: SDT Explorer)

3 CONSTRUCTION DUST MONITORING

Please see following summary of particulate counts from the attended testing conducted at Hammondcare Greenwich on Monday 21/09/2026.

Applicable dust limits have been included below for 24-hour averaging.

Additionally, analysis of 1-hour averaging for Air Quality Category guidelines has been shown. Generally, these Air Quality Categories are used for short term alerts and alarms and is not assessable as criteria.

3.1 DUST MANAGEMENT LEVELS

The air quality limits are based on the standards outlined in Department of the Environment's *National Environment Protection (Ambient Air Quality) Measure* and NSW EPA's air quality categories.

Dust monitoring it so be conducted to measure mechanically generated respirable PM_{10} dust particles (< 10µm) and $PM_{2.5}$ dust particles (< 2.5µm), which are generally understood to be the main health concern in airborne dust.

The PM_{10} and $PM_{2.5}$ goals are summarised below.

Table 2 – PM_{10} and $PM_{2.5}$ Goals (24-Hour Average)

Pollutant	Averaging Time	Maximum Concentration
Particulate Matter PM_{10}	24 hours	50µg/m^3
Particulate Matter $PM_{2.5}$	24 Hours	25µg/m^3

3.2 AIR QUALITY CATEGORIES

The EPA has air quality categories based on particle concentration over a one-hour average. Typically, a project target of 'Poor' category as a reference. **Notwithstanding, please note that the assessment level is based on the 24-hour average**.

Table 3 – PM_{10} and $PM_{2.5}$ Goals (1-Hour Average)

Pollutant	Air Quality Category (AQC)				
	Good	Fair	Poor	Very Poor	Extremely Poor
Particulate Matter PM_{10} (µg/m^3)	< 50	50-100	**100-200**	200-600	600 and above
Particulate Matter $PM_{2.5}$ (µg/m^3)	< 25	25-50	**50-100**	100-300	300 and above

3.3 DUST MONITORING

3.3.1 Dust Monitoring Descriptors

The principal dust monitoring measurement parameters are:

PM_{10} – represents the concentration of particulate matter with an aerodynamic diameter of 10 micrometres or less suspended in the air. PM_{10} is commonly used as an indicator of coarse airborne dust and is relevant to assessing potential impacts from activities such as earthworks, excavation, vehicle movements and material handling. Elevated PM_{10} concentrations can contribute to nuisance dust impacts and may also have implications for human health due to the ability of these particles to enter the respiratory system.

$PM_{2.5}$ – represents the concentration of fine particulate matter with an aerodynamic diameter of 2.5 micrometres or less suspended in the air. Due to their small size, $PM_{2.5}$ particles can penetrate deeper into the respiratory system and are commonly monitored when assessing potential health impacts associated with combustion sources, vehicle emissions and fine dust generation.

24-hour maximum average concentration – represents the calculated average particulate concentration over a continuous 24-hour period during the monitoring, expressed in micrograms per cubic metre of air ($\mu g/m^3$). This descriptor is used to assess Department of the Environment's National Environment Protection (Ambient Air Quality) Measure. It provides an assessable limit to prevent sustained dust impacts rather than short-duration peaks.

1-hour average concentration – represents the average concentration of particulate matter measured over a one-hour period, expressed in micrograms per cubic metre of air ($\mu g/m^3$). This parameter is used to identify short-term increases in dust concentrations and describe the Air Quality Category. While not an assessable limit this descriptor can help provide indications of possible exceedances of 24-hour maximum average concentrations when sustained periods above the Fair Air Quality Category are measured. Shorter averaging periods are useful for identifying temporary dust events that may not be evident in longer averaging periods caused by intermittent activities, such as construction operations, vehicle movements or wind-generated dust events.

3.3.2 Equipment Used

Dust monitoring was conducted using the AirmetER-AX Realtime Air Quality Monitoring Stations. These dust monitors include a laser-based counter which provides indicative particulate counts. These models feature a heated air intake to evaporate water droplets to minimise false counts.

The monitoring was continuous, with particle counts recorded at 1 and 5-minute intervals throughout the monitoring period.

All monitoring equipment used retains current calibration - either manufacturers' calibration or NATA certified calibration.

3.4 AIRMET PARTICULATE MONITOR LOCATIONS



Figure 2 – Particulate Monitor Locations

3.5 DUST MONITOR PHOTOS

3.5.1 Eastern Boundary - ER0220008



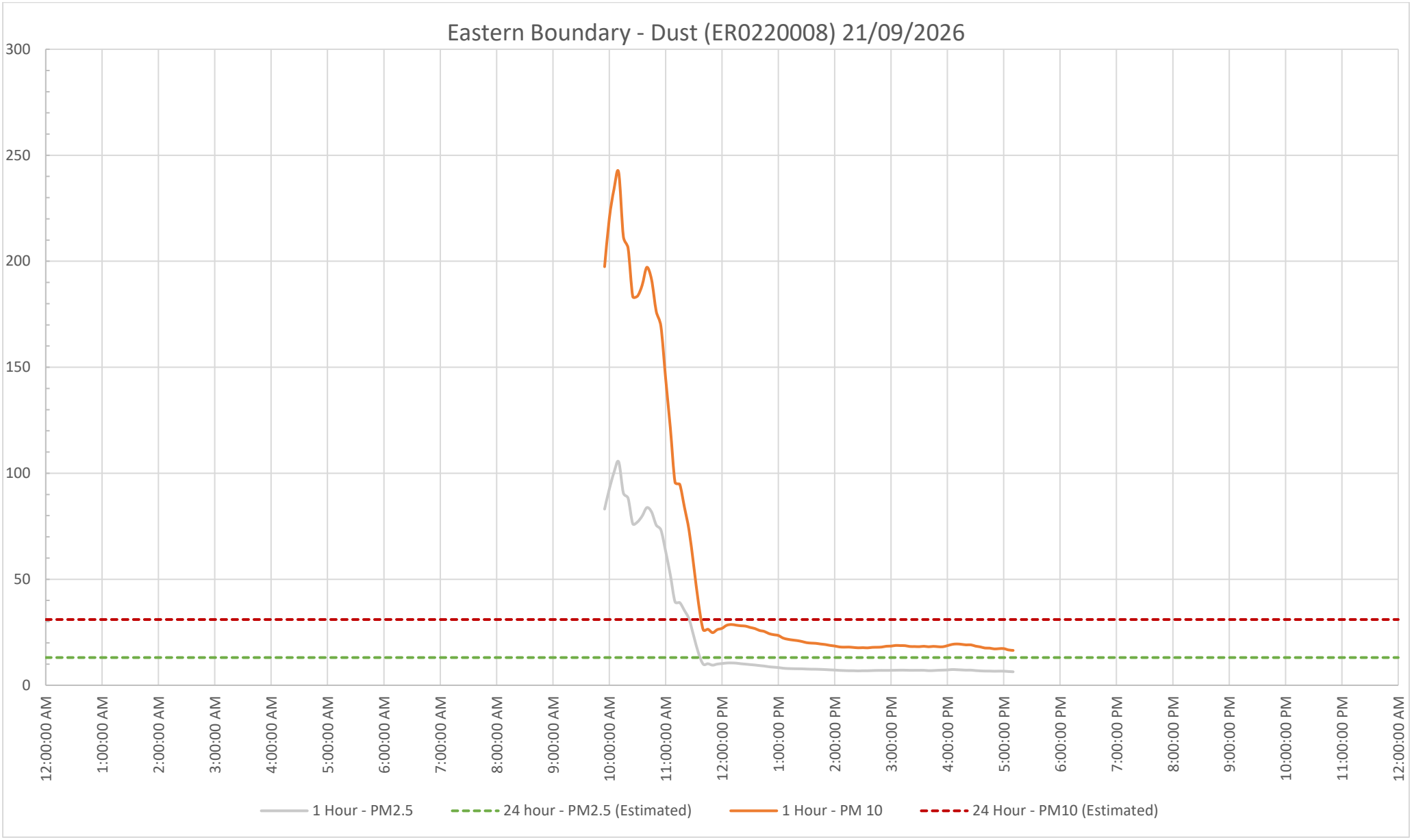
Figure 3 -AIRMET Monitor on Eastern Boundary (ER0220008)

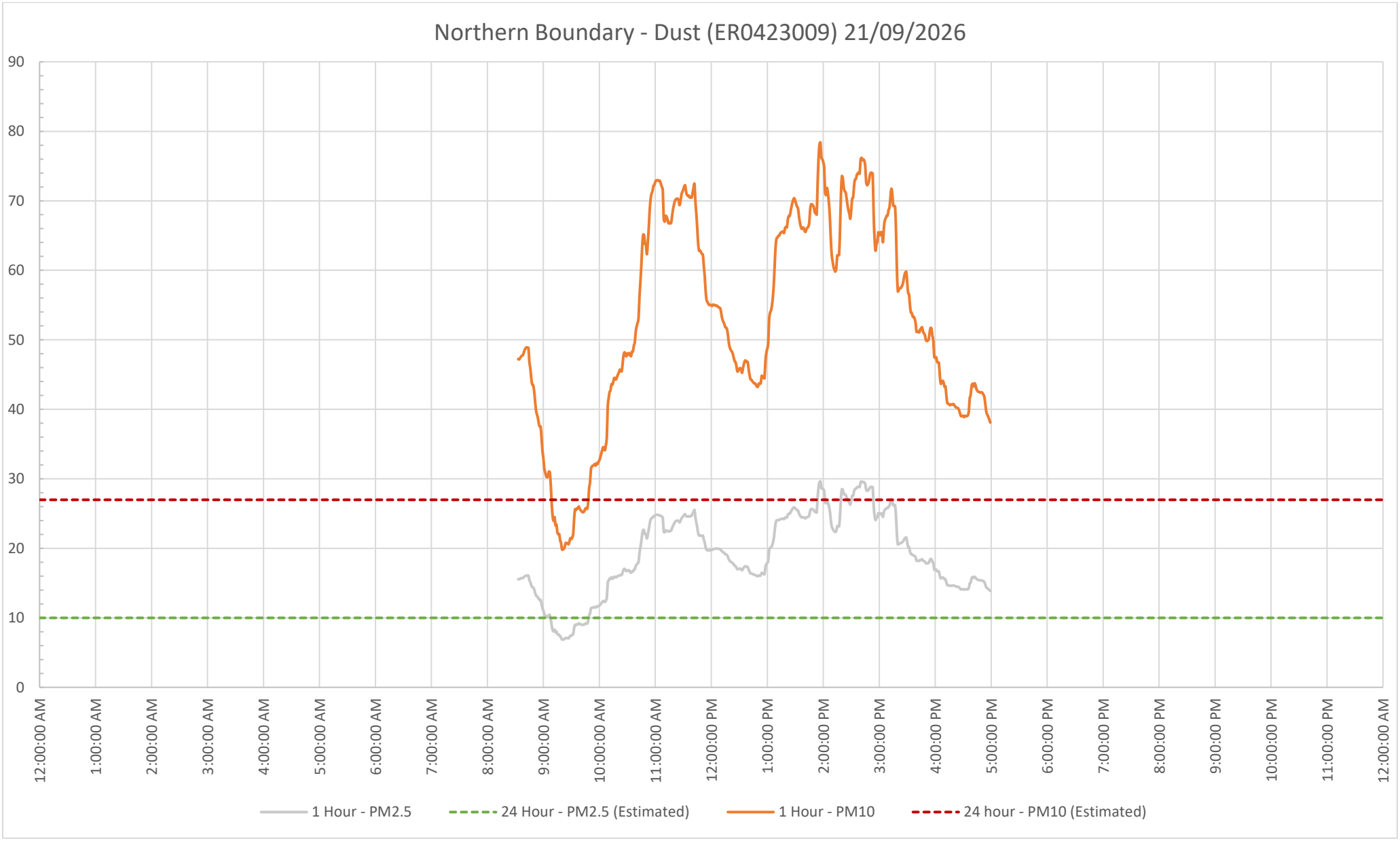
3.5.2 Northern Boundary - ER0423009



Figure 4 – AIRMET Monitor on Northern Boundary (ER0423009)

3.6 PARTICLUATE GRAPHS


Eastern Boundary - Dust (ER0220008) 21/09/2026
300
250
200
150
100
50
0
12:00:00 AM
1:00:00 AM
2:00:00 AM
3:00:00 AM
4:00:00 AM
5:00:00 AM
6:00:00 AM
7:00:00 AM
8:00:00 AM
9:00:00 AM
10:00:00 AM
11:00:00 AM
12:00:00 PM
1:00:00 PM
2:00:00 PM
3:00:00 PM
4:00:00 PM
5:00:00 PM
6:00:00 PM
7:00:00 PM
8:00:00 PM
9:00:00 PM
10:00:00 PM
11:00:00 PM
12:00:00 AM
1 Hour - PM2.5
24 hour - PM2.5 (Estimated)
1 Hour - PM 10
24 Hour - PM10 (Estimated)


Northern Boundary - Dust (ER0423009) 21/09/2026
90
80
70
60
50
40
30
20
10
0
12:00:00 AM
1:00:00 AM
2:00:00 AM
3:00:00 AM
4:00:00 AM
5:00:00 AM
6:00:00 AM
7:00:00 AM
8:00:00 AM
9:00:00 AM
10:00:00 AM
11:00:00 AM
12:00:00 PM
1:00:00 PM
2:00:00 PM
3:00:00 PM
4:00:00 PM
5:00:00 PM
6:00:00 PM
7:00:00 PM
8:00:00 PM
9:00:00 PM
10:00:00 PM
11:00:00 PM
12:00:00 AM
1 Hour - PM2.5
24 Hour - PM2.5 (Estimated)
1 Hour - PM10
24 hour - PM10 (Estimated)

3.7 24-HOUR AVERAGE PARTICULATE COUNT ASSESSMENT

The attended monitoring was carried out over 8.5 hrs. To obtain an overall 24hr figure we assumed the particulate count measured at the beginning and end of construction hours (7:30 to 5:00pm) applied to all out-of-construction work hours.

The out-of-construction work hours assumed values are as follows:

- Eastern Boundary Out of Construction Hours Particulate Count
    - PM_{10} 1min average of 13µg/m3 from 12:00 AM to 8:55 AM
    - PM_{10} 1min average of 13µg from 5:20 PM to 11:59 PM
    - $PM_{2.5}$ 1min average of 6µg/m3 from 12:00 AM to 8:55 AM
    - $PM_{2.5}$ 1min average of 6µg from 5:20 PM to 11:59 PM
- Northern Boundary Out of Construction Hours Particulate Count
    - PM_{10} 1min average of 3.69µg/m3 from 12:00 AM to 7:33 AM
    - PM_{10} 1min average of 18.69µg from 5:00 PM to 11:59 PM
    - $PM_{2.5}$ 1min average of 1.38µg/m3 from 12:00 AM to 7:33 AM
    - $PM_{2.5}$ 1min average of 7.61µg from 5:00 PM to 11:59 PM

Table 4 – Estimated 24 Hour Average Particulate Concentration

Monitor	Particle Size	Estimated 24 Hour Average Particulate Concentration µg/m³	Dust Management Level µg/m³	Compliant
Eastern Boundary ER0220008	Particulate Matter PM_{10}	31	50	Yes
	Particulate Matter $PM_{2.5}$	13	25	Yes
Northern Boundary ER0423009	Particulate Matter PM_{10}	27	50	Yes
	Particulate Matter $PM_{2.5}$	10	25	Yes

Based on the estimated 24-hour average particulate concentration the concentration of particles produced during the monitored construction period for 21/09/2026 are within the standards outlined in Department of the Environment's *National Environment Protection (Ambient Air Quality) Measure*.

3.8 1HR AIR QUALITY CATERGORY ASSESSMENT

For site particulate monitoring we recommend setting up alerts on your particulate monitor system when the 1-hr figure exceeds the Fair air quality category.

While the 1-hr level is not assessable, it is a valuable guide for when additional dust management activities may need to be applied to remain below the 24-hour average.

Multiple successive 1-hour periods above the Fair Air Quality Category may lead to exceedances of the 24-hour Particulate matter goals.

Our attended monitoring found the following:

- Eastern Boundary went above the Fair air quality category in 2 successive 1-hour periods.
- Northern boundary was found to be within the Fair air quality category during all measured periods

Table 5 – Worst 1-Hour Particulate Concentration

Monitor	Particle Size	1 Hour Particulate Concentration Range µg/m³	Air Quality Category Range
Eastern Boundary ER0220008	Particulate Matter PM_{10}	17 - 240	Good - Very Poor
	Particulate Matter $PM_{2.5}$	7 - 105	Good - Very Poor
Northern Boundary ER0423009	Particulate Matter PM_{10}	20 - 78	Good - Fair
	Particulate Matter $PM_{2.5}$	7 - 30	Good - Fair

It is important to note that the 1-hour average particulate concentration is not a compliance assessment parameter and should not be used to determine compliance. The NSW EPA 1-hour Air Quality Categories are intended as an indicator of short-term fluctuations in particulate concentrations and is used to identify periods of elevated activity.

Compliance with PM_{10} and $PM_{2.5}$ ambient particulate air quality is determined based only on the 24-hour average particulate concentration management levels established within the Department of the Environment's *National Environment Protection (Ambient Air Quality) Measure*. Accordingly, short-term 1-hour concentrations should be interpreted as contextual information only and not as a compliance metric.

3.9 SUMMARY OF WIND CONDITIONS

Table 6 – Wind Data Summary (Bureau of Meteorology, 2026)

Time (AEST)	Wind Direction	Wind Speed (km/h)	Wind Gusts (km/h)	Temperature (°C)	Relative Humidity (%)
06:00	WNW	15	22	24.5	32
09:00	WNW	22	31	27.8	28
11:00	NW	28	41	29.2	24
11:47 (Change)	SSE	48	63	18.5	68
12:00	SSE	44	59	16.1	74

Time (AEST)	Wind Direction	Wind Speed (km/h)	Wind Gusts (km/h)	Temperature (°C)	Relative Humidity (%)
15:00	SE	37	48	14.8	81
18:00	SSE	26	35	13.5	85

3.9.1 Dust Monitoring Impact Analysis

- Pre-Change Phase (06:00 – 11:46): High temperature (peaking at 29.2°C) combined with very low relative humidity (dropping to 24%) significantly dried out surface soils and exposed materials. Light to moderate WNW/NW winds would direct any liberated particulate matter from project site toward the southeast (towards Eastern Boundary Particulate Montior ER0220008 and R3).
- The Inversion Event (11:47): The boundary of the cold front brought an immediate 63 km/h gust from the SSE. This extreme energy threshold is well above typical friction velocity limits required to initiate dust suspension on open sites. Any unmitigated stockpiles or exposed areas would have experienced instantaneous wind erosion and topsoil lofting.
- Post-Change Phase (11:48 onwards): The wind completely reversed to sustained SSE/SE airflows. Any particulate matter generated after midday would travel north-northwest, (towards northern boundary Particulate Monitor ER0423009 and R2)

Note: the dramatic surge in relative humidity (rising up to 85%) and dropping temperatures would have aided in stabilizing smaller ambient particulates over the course of the afternoon.

3.10 DISCUSSION

3.10.1 Eastern Boundary

The drop in air quality occurred during the morning period from construction start until midday during which WNW/NW winds (Towards Southeast, where the monitor was located) directed most of particulates both ambient and from construction activities to the monitoring location. This was coupled with a low humidity that may have decreased the ambient air quality.

From 11:47am, an inversion event brought an SSE/SE wind change. This correlated with a drop in the 1-hour average to around PM10 25ug/m3 (Good AQC) and PM2.5 10ug/m3 (Good AQC) at the Eastern Boundary monitoring location. This wind direction continued for the rest of the construction hours where 1-hour average particle counts generally returned to Fair Air Quality Category

3.10.2 Northern Boundary

Air quality in this location was only marginally affected by wind direction. Increase in particulate counts correlated with the 11:47am SSE/SE wind inversion and 63km/h gusts. This short drop in air quality was followed by a decrease in particles from midday to 1:00pm.

Following, the drop in particles a period of higher particulate counts was experienced from 1:00pm till 3:00pm with a peak at 2:30pm. The particulate counts then continued to decrease from 3:00pm till end of construction hours.

4 CONSTRUCTION NOISE

4.1 GENERAL

4.1.1 Ambient Noise Descriptors

Ambient noise constantly varies in level from moment to moment, so it is not possible to accurately determine prevailing noise conditions by measuring a single, instantaneous noise level.

To quantify ambient noise, a 15-minute measurement interval is typically utilised. Noise levels are monitored on a continuous basis over this period, and statistical and integrating techniques are used to characterise the noise being measured.

The principal measurement parameters are:

L_{eq} - represents the average noise energy during a measurement period. This parameter is derived by integrating the noise levels measured over the measurement period. L_{eq} is important in the assessment of noise impact as it closely corresponds with how humans perceive the loudness of steady state and quasi-steady state noise sources (such as traffic noise).

L_{90} – This is commonly used as a measure of the background noise level as it represents the noise level heard in the quieter periods during the measurement interval. The L90 parameter is used to set noise emission criteria for potentially intrusive noise sources since the disturbance caused by a noise source will depend on how audible it is above the pre-existing noise environment, particularly during quiet periods, as represented by the L90 level.

L_{10} is used in some guidelines to measure noise produced by an intrusive noise source since it represents the average of the loudest noise levels produced at the source. Typically, this is used to assess noise from licenced venues.

L_{max} is the highest noise level produced during a noise event and is typically used to assess sleep arousal impacts from short term noise events during the night. It is also used to assess internal noise levels resulting from aircraft and railway ground vibration induced noise.

L_1 is sometimes used in place of L_{max} to represent a typical noise level from a number of high-level, short-term noise events.

4.1.2 Equipment Used

Attended noise measurements were conducted using a Norsonics SA 140 (type 1) sound analyser

Measurements were completed over a 15-minute period. Measurements were taken on "A" frequency weighting and fast time response, unless noted otherwise.

All monitoring equipment used retains current calibration - either manufacturers' calibration or NATA certified calibration. The monitors were field calibrated at the beginning and the end of the measurement with no significant drift in calibration noted.

4.1.3 Measurement Locations

Locations of attended measurements are provided in Figure 5



Figure 5 – Noise Measurement Locations

4.2 CONSTRUCTION NOISE MANAGEMENT LEVELS

Construction noise management levels relevant to the works have been determined in accordance with the ICNG at SSDA stage and detailed in the approved the Noise & Vibration Impact Assessment with reference 20210374.1/2507A/R4/LL, dated 25/07/2023. The following table summarise applicable noise management levels for works carried out during standard hours.

Table 7 – Project Specific Construction Noise Management Levels – ICNG Standard Hours

Receiver	RBL	Noise Affected Management Level (NML)- dB(A)$L_{eq(15min)}$	Highly Noise Affected Management Level (HANML)- dB(A)$L_{eq(15min)}$
R1 / R2 (West / North)	48	58	75
R3 (East)	44	54	
R4 (South)	44	54	
Commercial	-	70	N/A

4.3 NOISE MEASUREMENTS

Table 8 – Attended Measured Noise Levels

ID	Location	Time	Measured Noise Level dB(A)$L_{eq(15min)}$
A1	16 St Vincents Road	9:45:13	64
A2	35 Gore Street	10:14:34	55
A3	120 River Road	13:23:41	70 (65)*
A4	102 River Road	14:44:34	68 (63)*
A5	110 River Road	15:02:50	68 (63)*

4.4 DISCUSSION

Generally, all attended measurement were below the HNAML but above the NML.

For measurements A1 and A2 the measurement was less affected by traffic noise from River Road and therefore the Measured noise level is a better outline of the contribution of noise from construction activities.

For A3, A4 and A5 noise contributions from traffic noise were significant, however construction noise remained audible. Based on this, the noise level contribution directly from construction activities may be 3-5dB below the measured noise level at these locations.

5 CONSTRUCTION VIBRATION

5.1 GENERAL

5.1.1 Equipment Used

Attended vibration measurements were conducted using a SVAN 958A Class 1 Four Channel Sound and Vibration Analyser.

All monitoring equipment used retains current calibration - either manufacturers' calibration or NATA certified calibration. The monitors were field calibrated at the beginning and the end of the measurement with no significant drift in calibration noted.

5.1.2 Measurement Locations

Locations of attended vibration measurements are provided in Figure 6



Figure 6 – Vibration Measurement Locations

5.2 CONSTRUCTION VIBRATION MANAGEMENT LEVELS

5.2.1 Amenity Management

Vibration goals for the amenity of nearby land users are those recommended by the EPA document *Assessing Vibration: A technical guideline*. These levels (extracted from Tables 2.2 and 2.4 of the guideline) are presented in the following table for various types of vibration:

Table 9 -(Table 2.2 Assessing Vibration: A Technical Guideline) – Preferred and Maximum Weighted RMS Values for Continuous and Impulsive Vibration Acceleration (m/s2) 1-80Hz

Location	Assessment Period [1]	Preferred values		Maximum Values	
		z-axis	x- and y-axes	z-axis	x- and y-axes
Continuous Vibration					
Critical areas[2]	Day or night-time	0.0050	0.0036	0.010	0.0072
Residences	Daytime	0.010	0.0071	0.02	0.014
	Night-time	0.007	0.005	0.014	0.010
Offices, schools, educational institutions and places of worship	Day or night-time	0.020	0.014	0.040	0.028
Workshops	Day or night-time	0.04	0.029	0.080	0.058
Impulsive Vibration					
Critical areas[2]	Day or night-time	0.0050	0.0036	0.010	0.0072
Residences	Daytime	0.30	0.21	0.60	0.42
	Night-time	0.10	0.071	0.20	0.14
Offices, schools, educational institutions and places of worship	Day or night-time	0.64	0.46	1.28	0.92
Workshops	Day or night-time	0.64	0.46	1.28	0.92

1 Daytime is 7:00am to 10:00pm and night-time is 10:00pm to 7:00am.

2 Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring. There may be cases where sensitive equipment or delicate task require more stringent criteria than the human comfort criteria specified above. Stipulation of such criteria is outside the scope of this policy, and other guidance documents (e.g. relevant standards) should be referred to. Source: BS6472-1992.

Table 10 -(Table 2.4 Assessing Vibration: A technical guideline) – Acceptable Vibration Dose Values for Intermittent Vibration (m/s1.75)

Location	Daytime[1]		Night-time[1]	
	Preferred value	Maximum Value	Preferred value	Maximum Value
Critical areas[2]	0.10	0.20	0.10	0.20
Residences	0.20	0.40	0.13	0.26
Offices, schools, educational institutions and places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60

1 Daytime is 7:00am to 10:00pm and night-time is 10:00pm to 7:00am.
2 Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring. These criteria are only indicative, and there may be a need to assess intermittent values against the continuous or impulsive criteria for critical areas. Source: BS6472-1992.

5.2.2 Structure Damage Risk Criteria

5.2.2.1 Generally

German Standard DIN 4150-3 (2016) provides a guideline for acceptable levels of vibration velocity in building foundations, to assess the effects of vibration on structures. The table give guidance on the maximum accepted values of velocity at the foundation and in the plane of the highest floor of various types of buildings, to prevent any structural damage.

The table following lists the peak particle velocity, which is the maximum absolute value of the velocity signals for the three orthogonal components. This is measured as a maximum value of any of the three orthogonal component particle velocities when measured at the foundation, and the maximum levels measured in the x- and y-horizontal directions in the plane of the floor of the uppermost storey.

It is noted that if measured vibration levels do not exceed the guidelines listed in the following table, damage that will reduce the serviceability of the building will not occur, and if damage to the building does occur, it is assumed that the damage is related to other causes. Furthermore, the DIN4150-3 guideline states the following regarding the limits presented in Table 1 of the standard:

"Exceeding the guideline values does not necessarily lead to damage. Should they be exceeded, however, further investigations may be necessary, such as determining and evaluating the stresses as detailed in 4.3 and 4.4.".

Table 11 -(Table 1 – DIN 4150-3 (2016)) – Guideline Values for Vibration Velocity, $v_{i,max}$, for Evaluating the Effects of Short-Term Vibration on Structures

	TYPE OF STRUCTURE	Guideline values for $v_{i,max}$ in mm/s				
		Foundation, all directions, i = x, y, z, at a frequency of			Topmost floor, horizontal direction, i = x, y	Floor slabs, vertical direction, i = z
		1Hz to 10Hz	10Hz to 50Hz	50Hz to 100Hz [a]	All Frequencies	All Frequencies
L/C	1	2	3	4	5	6
1	Buildings used for commercial purposes, industrial buildings, and buildings of similar design	20	20 to 40	40 to 50	40	20
2	Residential buildings and buildings of similar design and/or occupancy	5	5 to 15	15 to 20	15	20
3	Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 **and** are of great intrinsic value (e.g. listed buildings) buildings that are under a preservation order)	3	3 to 8	8 to 10	8	20[b]

NOTE Even if guideline values as in line 1, columns 2 to 5, are complied with, minor damage cannot be excluded.

a At frequencies above 100 Hz, the guideline values for 100 Hz can be applied as minimum values.

b It may be necessary to lower the guideline value markedly to prevent minor damage

5.3 VIBRATION MEASUREMENTS

Table 12 – Attended Vibration Levels

ID	Location	Calculated PPV mm/s
V1	16 St Vincents Road	0.1
V2	112 River Road	0.06

5.4 DISCUSSION

PPV of all attended measurements were within the DIN 4150 3 (2016) Guideline values for vibration velocity.

6 CONCLUSION

Acoustic Logic has been engaged to complete attended measurements for dust, noise and vibration associated with ongoing construction activities at the Hammond care Greenwich Hospital Redevelopment.

The management limits and results for the attended Dust, Noise and Vibration measurements have been outlined above for further comparison to existing unattended dust, noise and vibration monitoring occurring around the project site.

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

Yours faithfully,



Acoustic Logic Pty Ltd
Dane Lewis