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## **ACOUSTICAL REPORT**

**EXISTING E-WASTE RECYCLING FACILITY AT**

**90 MARPLE AVENUE, VILLAWOOD NSW**

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**ACOUSTICAL REPORT**  
**EXISTING E-WASTE RECYCLING FACILITY AT**  
**90 MARPLE AVENUE, VILLAWOOD NSW**

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## **1.0 INTRODUCTION**

Koikas Acoustics Pty Ltd was engaged to prepare a noise impact assessment for the existing E-Waste Recycling Facility at 90 Marple Avenue, Villawood NSW.

A cumulative operational noise impact assessment from the existing operation of the e-waste recycling facility during additional operating hours, and with proposed additional electro-winning equipment to surrounding neighbouring premises has been conducted to confirm compliance is being achieved with the acoustic requirements outlined in the NSW EPA's Noise Policy for Industry 2017 and Protection of the Environment Operations Act 1997 ("Offensive Noise").

This report presents the results and findings of an acoustic assessment for the subject proposal. In-principle acoustic treatments and noise control recommendations are included (where required) so that the premises may operate in compliance with the nominated acoustic planning levels.



## **2.0 THE PROPOSAL**

The existing e-waste recycling facility at 90 Marple Avenue, Villawood NSW. The DA application involves the alteration to the existing operating hours and the addition of electro-winning equipment and operations to the e-waste facility. Koikas Acoustics has been advised that the electro-winning equipment and operations will be housed internally, within the existing e-waste facilities building structure.

All calculations and noise-modelled scenarios conducted for this assessment are based on the existing layout and operations.

The development location is situated along the border between industrial and residential zoned areas. The subject site is classified as IN1 ‘General Industrial’ as per relevant land zoning maps included in the Bankstown Local Environment Plan 2015. Surrounding area is generally IN1 ‘General Industrial’ with R1 ‘General Residential’ to the south.

The development location is situated in a primarily industrial/residential area, surrounded by the following:

- Industrial premises to the west at 61 Marple Avenue (Global Foods Group);
- Industrial premises to the north at 82-88 Marple Avenue (JJ Supermarket);
- Industrial premises to the east at 61d Marple Avenue (Red Oriental Construction), and
- Residential premises to the south of Biloela Street.

Prevailing ambient noise conditions on-site and in the local area are generally industrial/commercial noise sources with sporadic road traffic during the daytime and environmental noise (i.e, birds chirping, leaves rustling), sporadic road traffic and domestic noise sources during the evening and night-time periods. The subject site and surrounding properties are identified in the aerial photograph in Figure 1.



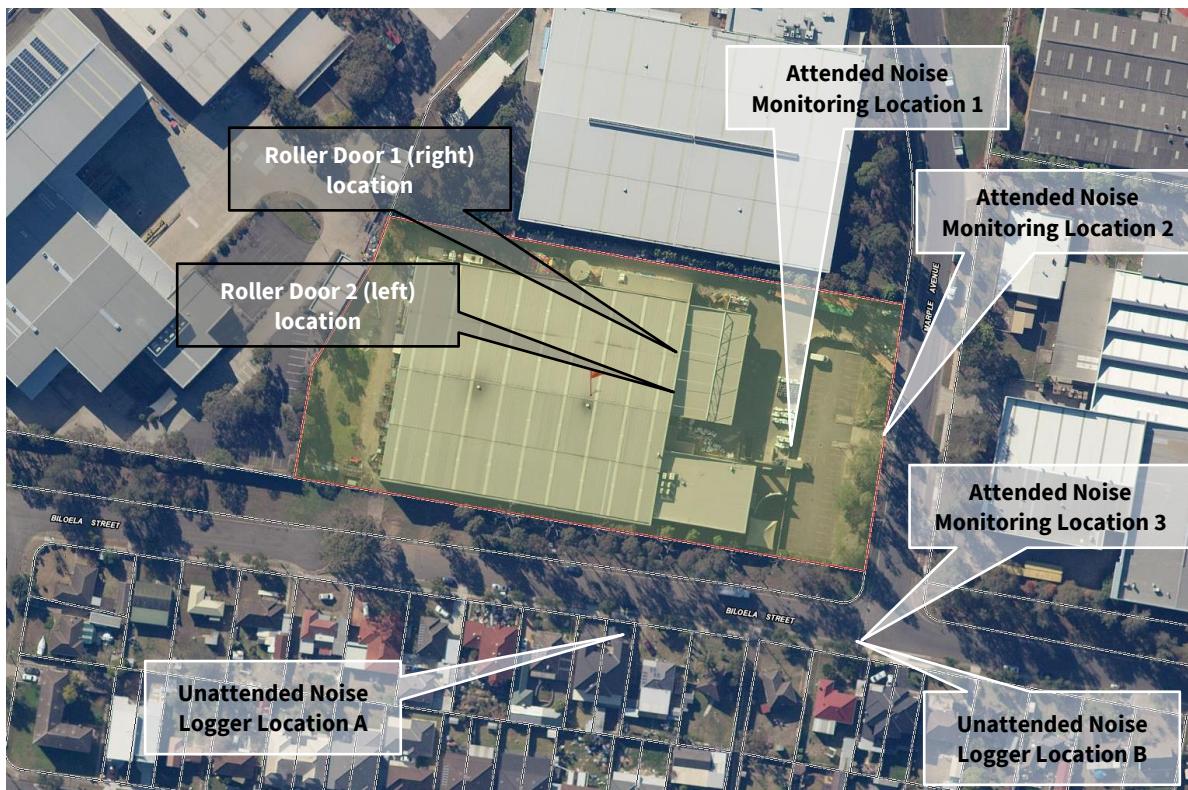


Figure 1. Aerial photo of the subject site boundaries, monitoring locations and surrounding area (Image source – Six Maps)

Koikas Acoustics has been advised of the following:

- The existing hours of operation are 7 am to 6 pm, Monday to Friday.
- The proposed new hours and operating modes are as follows:
  - 6 am – 10 pm, Monday to Friday (*Operations and Deliveries*)
  - 7 am – 3 pm, Saturday (*Operations and Deliveries*)
  - 3 pm – 6 pm, Saturday (*Deliveries Only*)
  - 10 am – 6 pm, Sunday (*Deliveries Only*)
- Existing operations consist of 20,000 tonnes per annum with mechanical processing of e-waste.
- The existing e-waste recycling facility consists of the following:
  - Approximately 72 meters x 88 meters building with concrete walls (minimum 150 mm thick)
  - A single layer of metal sheeting for the ceiling/roof.
  - Concrete flooring
- Noise at the site is expected to be generated by:
  - Vehicles entering and leaving;
  - Loading and unloading activities;

- Forklift activity;
- Processing by shredding, milling, rolling and sieving (located inside the factory building); and
- Proposed electro-winning equipment/operations.



## **3.0 NOISE SURVEYS**

### **3.1 AMBIENT NOISE SURVEYS**

Existing external ambient noise levels were measured by installing two sound level meter data loggers at the following locations as indicated in Figure 1:

- The front yard of residential premises at 103 Biloela Street, and
- Near the northern boundary of residential premises at 93-95 Biloela Street.

A Type 1 Svan 977 and NSRT MK3 noise loggers were used for the surveys. The installed location meant that the microphone was approximately 1.5 metres and 2.5 meters respectively above the ground level. This meter was placed to measure ambient noise levels that pertain to the surrounding area.

Noise from the existing facility was not audible during both site visits and was not measurable at the noise-logging locations. The ambient background noise level at both monitoring locations is dominated by continuous mechanical plant noise emanating from Red Oriental Construction at 61d Marple Avenue during the daytime and evening periods.

The instrument was set up to measure A-frequency and ‘Fast’ time-weighted noise levels. Noise level data was stored within the logger memory at 15-minute intervals between Friday 9<sup>th</sup> February and Thursday 15<sup>th</sup> December 2022.

Calibration readings were taken before and after each survey with a NATA-calibrated and certified Larson Davis CAL200 precision acoustic calibrator. No system drift was observed for this meter.

BOM weather records for the nearest available weather station indicate that inclement weather conditions did not adversely impact the noise survey results. Rainfall and wind speed observations are attached as **Appendix B** at Bankstown Airport AWS (Station 66137).



**Table 1. Summary of noise logger results [dB]**

<b>Location</b>	<b>Period, T<sup>1</sup></b>	<b>Ambient noise level</b> LAeq	<b>Rating Background Level</b> LA90
103 Biloela Street	Day	54	44
	Evening	53	44
	Night	51	37
93-95 Biloela Street	Day	61	52
	Evening	58	44
	Night	54	40
Notes	1:	The <a href="#">NSW EPA Industrial Noise Policy</a> refers to the following periods: Day 7 am to 6 pm Monday to Saturday and 8 am to 6 pm Sunday and public holidays, Evening 6 pm to 10 pm Monday to Sunday, Night 10 pm to 7 am Monday to Saturday and 10 pm to 8 am Sunday and public holidays.	
	2:	Unattended noise logger graphs are attached as <a href="#">Appendix A</a> .	

Measured noise levels during the daytime/evening periods at both monitoring locations were affected by continuous mechanical plant noise at 61d Marple Avenue (Red Oriental Construction). This was observed during both site visits.

As per the EPA NPfI Section A1, general industry hum may be included in the measured background noise level if it is a usual feature of the area. It was observed during the installation/removal of the equipment and from the attended noise survey that these mechanical plant noises were consistent and established as a normal feature of the area, this is further reflected in the consistency of the noise level trends outlined in the noise logger graphs in [Appendix A](#) of this report.

Furthermore, noise from the subject site at 90 Marple Avenue was inaudible at the noise logger locations throughout the unattended measurement period, and therefore this can not be attributed to extraneous noise.

As a result, noise emissions from 61D Marple Avenue result in general industry hum to nearby residences. As this noise source is a part of the normal ambience in this location, this has been included in the measured background noise level as it is representative of the area, as per the EPA NPfI Section A1.



### **3.2 ATTENDED NOISE SURVEYS**

Each survey was conducted with an NTi XL2 sound level meter set to A-frequency weighting and fast time response. Calibration readings were taken before and after each survey with a NATA-calibrated and certified Larson Davis CAL200 precision acoustic calibrator. No system drift was observed for this meter. Surveys were conducted for durations deemed sufficient to represent the equivalent noise level and at a particular distance from the noise source to minimise the influence of extraneous noise from other activities.

An FFT and tonal analysis was conducted in XL2 Data Explorer as per ISO 1996-2:2007. The FFT and tonal analysis provide a means of assessing the presence of tones in a noise spectrum and defining a tonal adjustment to apply to the  $L_{Aeq}$  noise level to essentially act as a penalty to account for the perceived increase in annoyance/offensive quality. Under Annex C of ISO 1996-2:2007, the tonal adjustment has been included for each measured noise source in Table 3 and Table 4.

A low-frequency noise correction may be applicable if the  $L_{Ceq} - L_{Aeq}$  is 15 dB or more as per the EPA's Noise Policy for Industry. The  $L_{Ceq} - L_{Aeq}$  for each measured noise source has been presented in the tables below. The  $L_{Ceq} - L_{Aeq}$  for all measured noise sources were found to be less than 15 dB, as such, no low-frequency noise correction is applicable.

Attended noise surveys were also conducted on Friday 16<sup>th</sup> December 2022 at the existing e-waste recycling facility to quantify the typical activities that occur during normal operation.

The following measurements were conducted of the noise emanating from the facility:

1. Internal – shredder mill (noisiest machinery inside the factory) at 5 meters;
2. Internal – shredder mill (noisiest machinery inside the factory) at 20 meters;
3. Internal – shredder mill (noisiest machinery inside the factory) spatial average of 20m x 10m;
4. External - Break-out noise at 5 meters from open roller door 1 (right);
5. External - Break-out noise at 5 meters from open roller door 2 (left);
6. External - Break-out noise at 10 meters from open roller door 2 (left);
7. External - Break-out noise at 5 meters from closed roller door 1 (right);
8. External - Break-out noise at 5 meters from closed roller door 2 (left), and
9. External - Break-out noise at 10 meters from closed roller door 2 (left).



A summary of the noise survey results is provided in Table 3.

**Table 2. Measured Noise Levels [dB]**

Noise Source	Noise Metric	Total	$L_{Ceq} - L_{Aeq}$	Annoying Characteristic Correction
Internal – shredder mill (noisiest machinery inside the factory) at 5 m	$L_{Aeq}$	95	3	+1
Internal – shredder mill (noisiest machinery inside the factory) at 20 m	$L_{Aeq}$	91	3	0
Internal – shredder mill (noisiest machinery inside the factory) spatial average of 20 m x 10 m	$L_{PAeq}$	96	4	0
External - Break-out noise at 5 m from <u>open</u> roller door 1 (right)	$L_{PAeq}$	75	3	0
External - Break-out noise at 5 m from <u>open</u> roller door 2 (left)	$L_{PAeq}$	77	3	0
External - Break-out noise at 10 m from <u>open</u> roller door 2 (left)	$L_{PAeq}$	75	2	0
External - Break-out noise at 5 m from <u>closed</u> roller door 1 (right)	$L_{PAeq}$	64	6	+1
External - Break-out noise at 5 m from <u>closed</u> roller door 2 (left)	$L_{PAeq}$	66	7	+1
External - Break-out noise at 10 m from <u>closed</u> roller door 2 (left)	$L_{PAeq}$	62	8	0

Koikas Acoustics has been advised that roller doors are typically closed and only open for a sufficient period to allow vehicles to enter and exit through the roller doors. Breakout noise from the facility was predominately from the two roller doors on the eastern façade of the building.

**Table 3. Ambient Noise Levels with e-waste recycling facility operating [dB]**

Noise Source	Noise Metric	Total	$L_{Ceq} - L_{Aeq}$	Annoying Characteristic Correction
<b>roller doors open</b>				
Ambient noise at the carpark – Location 1	$L_{Aeq}$	62	7	+4
Ambient noise in the driveway – Location 2	$L_{Aeq}$	67	5	+5
Ambient noise at 93-95 Biloela Street – Location 3	$L_{Aeq}$	60	9	0
<b>roller doors closed</b>				
Ambient noise at the carpark – Location 1	$L_{Aeq}$	59	7	+4
Ambient noise in the driveway – Location 2	$L_{Aeq}$	67	4	+4
Ambient noise at 93-95 Biloela Street – Location 3	$L_{Aeq}$	60	7	+1



## 4.0 ACOUSTICAL REQUIREMENTS

### 4.1 BANKSTOWN CITY COUNCIL – NOTICE OF DETERMINATION – DA468/2008

The relevant noise conditions as outlined in the subject sites' development conditions have been extracted and reproduced below:

27) The use shall operate in accordance with the Acoustic Report prepared by Wilkinson Murray Pty Ltd, dated September 2008, Report No. 08061-M, Revision A.

28) In the event that Council (or the operators of the site) receive noise complaints associated with the use, the operators, at their expense shall undertake noise samples to determine the level of noise being generated. If it is found that the noise levels at that time exceed those levels specified in the Wilkinson Murray report, then the operators shall modify work processes or upgrade the building acoustically to comply. All details shall be provided to Council for its information. The building shall at all times comply with the relevant industrial noise controls set out by the NSW State Government and its agencies.

**Figures 2-3.** Conditions 27 and 28 of the Development Consent – Image Source: DA468/2008

The Wilkinson Murray report as referenced in the Figure above outlines that the facility is expected to be compliant at all noise-sensitive receivers without the requirement for additional noise attenuation measures. As such, the subject site is deemed to be currently operating in compliance with the Wilkinson Murray report.

The Wilkinson-Murray report outlines noise criteria stating that noise emissions from the e-waste facility must not exceed:

- $L_{Aeq, 15 \text{ minutes}}$  **51 dB** at 93 Biloela Street, and
- $L_{Aeq, 15 \text{ minutes}}$  **45 dB** at 103-111 Biloela Street.

As detailed later in this report, these are more stringent criteria than what has been adopted in this report, as the Wilkinson-Murray report was prepared in September 2008, and it is likely that ambient noise levels in the area have increased since this time. However, this criteria will also be referred to as a conservative method. Additionally, The Wilkinson-Murray report was based on daytime



operational hours only. Where evening hours are considered under the new proposed extended hours, the EPA's Noise Policy for Industry has been referenced, based on current ambient noise surveys.

#### **4.2 EPA NOISE POLICY FOR INDUSTRY**

Noise emission design targets have been referenced from the *NSW Environmental Protection Authority (EPA) Noise Policy for Industry (NPfI)*.

The NPfI is designed to assess environmental noise impacts associated with scheduled activities prescribed within the Protection of the *Environment Operations Act 1997*, Schedule 1. It is also used as a reference tool for establishing suitable planning levels for noise generated by mechanical plant and equipment and noise emission from commercial operations.

For residential receivers, the guideline applies limits on the short-term intrusive nature of a noise or noise-generating development (project intrusive noise level), as well as applying an upper limit on cumulative industrial noise emissions from all surrounding development/industry (project amenity noise level).

The most stringent of the project intrusive noise level and project amenity noise level are applied as the **project noise trigger level (PNTL)**. To determine which of the intrusive and amenity noise criteria is more stringent, the underlying noise metrics must be the same.

As the intrusive noise level is defined in terms of an  $L_{Aeq, 15\text{ minutes}}$  and the amenity noise level is defined in terms of an  $L_{Aeq, \text{Period}}$ , a +3 dB correction is applied to the project amenity noise level to equate the  $L_{Aeq, \text{Period}}$  to  $L_{Aeq, 15\text{ minutes}}$ .

Where noise is measured or predicted below the project noise trigger level, the noise outcome is deemed acceptable. Above the project noise trigger level, management responses such as applying reasonable and feasible noise mitigation measures are to be recommended, along with assessing any residual noise impacts once noise mitigation has been considered.

The policy is designed in such a way that the assessing authority would consider the project noise trigger levels, reasonable and feasible mitigation measures, and any residual noise impacts when deciding on acceptable noise outcomes.



The site-specific project noise trigger levels need only be considered for the hours under which the noise or activity occurs. When compliance is achieved with the EPA's Noise Policy for Industry, 'Offensive Noise' is unlikely to occur.

**Table 4. NPfI planning levels [dB]**

**103 Biloela Street**

Period, T (Note 1)	Intrusive		Amenity					Project noise trigger level
	RBL	RBL + 5	Area classification	Recommended amenity noise level	High traffic area	Project amenity noise level	+3dB correcti on	
Day	44	49	Urban	60	No	55	58	49
Evening	44	49	Urban	50	No	45	48	48
Night	37	42	Urban	45	No	40	43	42

**93-95 Biloela Street**

Day	52	57	Urban	60	No	55	58	57
Evening	44	49	Urban	50	No	45	48	48
Night	40	45	Urban	45	No	40	43	43

Notes 1.	<p>The <a href="#">NSW EPA Industrial Noise Policy</a> refers to the following periods:</p> <p>Day      7 am to 6 pm Monday to Saturday and 8 am to 6 pm Sunday and public holidays,</p> <p>Evening    6 pm to 10 pm Monday to Sunday,</p> <p>Night     10 pm to 7 am Monday to Saturday and 10 pm to 8 am Sunday and public holidays.</p> <p>2. The amenity criterion is based on the area classification of the site as being 'rural' and has not been corrected for an assessment in areas of high traffic and for existing industrial noise where applicable.</p> <p>3. Project noise amenity level = recommended noise amenity level – 5dB, except where specific circumstances are met, such as high traffic.</p>
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### 4.3 OFFENSIVE NOISE (POEO ACT 1997 DEFINITION)

The definitions of 'offensive noise' in the Protection of the Environment Operations Act 1997 means:

- (a) *that, by reason of its level, nature, character or quality, or the time at which it is made, or any other circumstances:*
  - (i) *is harmful to (or is likely to be harmful to) a person who is outside the premises from which it is emitted, or*
  - (ii) *interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted, or*
- (b) *that is of a level, nature, character or quality prescribed by the regulations or that is made at a time, or in other circumstances, prescribed by the regulations.*



## **5.0 OPERATIONAL USE NOISE ASSESSMENT**

### **5.1 NOISE PREDICTION MODEL**

The noise predictions are based on computer simulation (CadnaA) of the site and the surrounding area. The program predicts noise levels to receiver points based on source sound power levels, source-receiver distances, the presence of any acoustic shielding objects, and the effects of acoustic absorption of the ground and other elements. Noise propagation calculations follow *ISO 9613 Acoustics – Attenuation of sound during propagation outdoors*. Per the sound propagation algorithms adopted in the ISO standard, the output of the noise model is a downwind sound pressure level which constitutes an assessment of noise-enhancing weather conditions.

The noise prediction model has been prepared per the existing building footprint/operations and information provided to Koikas Acoustics by MRA Consulting Group regarding anticipated traffic movements.

### **5.2 ASSESSMENT SCENARIOS**

The following noise sources have been considered in the noise model:



**Table 5. Acoustic design scenarios and parameters**

Design Scenario	Operational Use
	Noise Sources Considered
<b>Scenario 1 – Operations and Deliveries</b>  Daytime/Evening/Night [0600 – 2200] <sup>1</sup>	<ul style="list-style-type: none"> <li>Internal operations (<i>outlined in Section 3.2</i>) with all roller doors open for 5 minutes and closed for the remaining 10 minutes in a 15-minute period.</li> <li>Proposed electro-winning equipment operating continuously inside the facility</li> <li>4 x trucks entering/exiting the site in the busiest 15-minutes</li> <li>8 x cars entering/exiting the car park during the busiest 15-minutes</li> <li>8 x car door slams in the front car park in the busiest 15-minute</li> <li>8 x car engine ignition sequences during the busiest 15-minutes</li> </ul>
<b>Scenario 2 – Deliveries Only</b>  Daytime [0700 – 1800] <sup>1</sup>	<ul style="list-style-type: none"> <li>4 x trucks entering/exiting the site in the busiest 15-minutes</li> <li>8 x cars entering/exiting the car park during the busiest 15-minutes</li> <li>8 x car door slams in the front car park in the busiest 15-minute</li> <li>8 x car engine ignition sequences during the busiest 15-minutes</li> </ul>
Notes:	<p>1. <b>EPA</b> defines the following periods:  <b>Day:</b> 7 am to 6 pm Mon to Sat and 8 am to 6 pm Sun and public holidays,  <b>Evening:</b> 6 pm to 10 pm Mon to Sun,  <b>Night:</b> 10 pm to 7 am Mon to Sat and 10 pm to 8 am Sun and public holidays.</p>

### 5.3 SOURCE NOISE LEVELS

The following noise sources have been adopted for the noise modelling assessment.

**Table 6. Source noise levels, L<sub>Aeq 15 minutes</sub> [dB]**

Noise Source	Noise Metric	Total
Internal Operations – Roller Door One <sup>1,4</sup>	L <sub>p</sub> @ 5 m	71
Internal Operations – Roller Door Two <sup>1,4</sup>		73
Internal Operations - electro-winning equipment	L <sub>p</sub> @ 1 m	65
Car moving in the car park <sup>2,5</sup>	L <sub>w</sub>	78
Car door slam <sup>3,5</sup>		55
Car engine ignition sequence <sup>3,5</sup>	L <sub>w</sub>	53
Semi-trailer moving in facility <sup>2,5</sup>		91
Notes:	<p>1. The noise model will correct for directional losses through roller door openings  2. 1 x Vehicle movement – constant noise source  3. Corrected to 1 event in a 15-minute period  4. Noise levels have been sourced from noise measurements as outlined in Section 3.2 of this report  5. Noise levels have been sourced from previous measurements conducted by Koikas Acoustics</p>	

The proposed electro-winning equipment is a bespoke piece of equipment that is proposed to be custom-built for the e-waste facility. As the equipment is being custom-made, published noise data



from the manufacturer does not exist. Koikas Acoustics has been advised by the client that the equipment is expected to produce a sound pressure level of  $L_{Aeq}$  65 dB at 1 m. This will need to be confirmed at a compliance testing stage after the equipment has been installed. This has been discussed further in Section 5.5 of this report.

#### 5.4 CALCULATED NOISE LEVEL RESULTS

All calculations consider the noise sources and elements as described in Sections 3.2, 5.2 & 5.3 of this report. The most noise-sensitive receiver locations are summarised below and are shown in Figure 4.

**Table 7. Assessment locations**

ID	Receiver type and address	Assessment location
R1	Residential / 111 Biloela Street	
R2	Residential / 109 Biloela Street	Most noise-affected boundary
R3	Residential / 107 Biloela Street	Upper floor level
R4	Residential / 105 Biloela Street	Most noise-affected boundary
R5	Residential / 103 Biloela Street	Upper floor level
R6	Residential / 101 Biloela Street	
R7	Residential / 99 Biloela Street	
R8	Residential / 97 Biloela Street	Most noise-affected boundary
R9	Residential / 95 Biloela Street	
R10	Residential / 93 Biloela Street	Upper floor level



**Figure 4.** Receiver locations and Identifications

Predicted operational noise levels are as follows:

Table 8. Scenario 1 – Daytime/Evening/Night – Operations and Deliveries [dB]				
Receivers		Calculated External Noise Levels L <sub>Aeq,15min</sub>	Project Noise Trigger Level L <sub>Aeq,15min</sub>	Exceeding
Residential	R1	21	<b>Daytime: 45</b> <i>Wilkinson-Murray Report (2008 – Condition 27)</i>	Nil
Residential	R2	22		Nil
Residential	R3	26		Nil
Residential	R4	25		Nil
Residential	R5	31		Nil
Residential	R6	35		Nil
Residential	R7	37		Nil
Residential	R8	43		Nil
Residential	R9	44 <sup>1</sup>		Nil
Residential	R10	43		Nil
Notes:	1.	As per the EPA NPfI, any residual noise impact that exceeds the adopted project noise trigger levels by ≤ 2 dB, the impact on surrounding residential receivers is negligible, and therefore acceptable. As such, compliance has been achieved at R9.		



**Table 9. Scenario 1 – Daytime – Deliveries Only [dB]**

Receivers		Calculated External Noise Levels L <sub>Aeq,15min</sub>	Project Noise Trigger Level L <sub>Aeq,15min</sub>	Exceeding
Residential	R1	14	<i>Daytime: 45</i> <i>Wilkinson-Murray Report (2008 – Condition 27)</i>	Nil
Residential	R2	17		Nil
Residential	R3	22		Nil
Residential	R4	21		Nil
Residential	R5	24		Nil
Residential	R6	25		Nil
Residential	R7	28		Nil
Residential	R8	30		Nil
Residential	R9	31		Nil
Residential	R10	29		Nil

As outlined above, no additional noise mitigation measures are required provided that the facility operates as described in this report.

Compliance has therefore been achieved with the adopted project noise trigger levels of the EPA's Noise Policy for Industry.

## 5.5 ELECTRO-WINNING EQUIPMENT DISCUSSION AND RECOMMENDATIONS

The noise level of the proposed electro-winning equipment will need to be verified after the equipment is installed at an occupational certification stage.

The equipment and operations are proposed to be housed internally within the e-waste facility where the roller doors are proposed to be closed for the majority of the time. Therefore, all noise emissions from the proposed electro-winning equipment will be heavily shielded from nearby residences, and offensive noise impacts are expected to be minimal.



Koikas Acoustics has been advised that the proposed electro-winning equipment will generate a sound pressure level of approximately  $L_{Aeq}$  65 dB at 1 m away from the equipment. The proposed electro-winning equipment is a custom-made bespoke piece of equipment, and as a result, manufacturer-published noise data does not exist, as the equipment does not exist.

This will need to be verified after the equipment is installed. Although it is highly unlikely to occur, should it be found that the equipment generates noise levels that result in exceeding noise emissions from the facility, the following noise attenuation measures could be implemented.

- The equipment could be moved to a location where the direct line of sight between the equipment and the roller door opens is minimised;
- A noise barrier could be installed around the equipment. The noise barrier should be of solid construction, and extend at least 1 m higher than the top of the equipment, or extend from ground to ceiling height. Proposed barrier construction methods include:
  - 15 mm polycarbonate panels;
  - PVC-type formwork (eg *Klionic Panel 0402 399 990*). The cavity of this panel should be filled with as a minimum, sound insulation batts.

It should be noted that based on the proposed internal location, the nature of the electro-winning equipment and the operation of the existing e-waste facility where roller doors are mainly kept closed, it is highly unlikely that the new electro-winning equipment will result in noise levels that exceed the adopted project noise trigger levels and compliance is expected to be achieved.

## **5.6 OFFENSIVE NOISE CHECKLIST (EPA NOISE GUIDE FOR LOCAL GOVERNMENT, 2013)**

The EPA NGLG provides a checklist that is proposed to assist with establishing if a particular noise is offensive. The checklist is summarised as follows:

- Is the noise loud in an absolute sense? Is it loud relative to other noise in the area?  
*No, the operation of the existing e-waste recycling facility was measured and calculated to be barely audible or inaudible to the surrounding premises.*
- Does the noise include characteristics that make it particularly irritating?  
*Some activities may contain annoying characteristics, however, based on their loudness, it is expected to be inaudible.*



- Does the noise occur at times when people expect to enjoy peace and quiet?  
*No, the facility is proposed to operate during the daytime period only.*
- Is the noise atypical for the area?  
*No, there are surrounding industrial premises.*
- Does the noise occur often?  
*The noise may occur often during the daytime period, however, expected to be inaudible inside the dwellings.*
- Are several people affected by the noise?  
*Residential premises along Biloela Street. Compliant noise levels are predicted for each of these premises, and noise emissions from the e-waste facility are expected/calculated to be inaudible.*



## **6.0 CONCLUSION**

Koikas Acoustics was requested to prepare an acoustical report for the existing e-waste recycling facility with the addition of electro-winning equipment inside the facility at 90 Marple Avenue, Villawood NSW. The assessment considers potential noise impacts on surrounding premises from the existing e-waste recycling facility.

Acoustic planning levels have been referenced from current EPA and other relevant acoustic planning guidelines and requirements.

The layout and operating conditions were based on existing operations on Friday 16<sup>th</sup> December 2022 and the proposed equipment. Unattended noise measurements were required to quantify the prevailing ambient background noise level.

The adopted project noise trigger level per the EPA's Noise Policy for Industry 2017 is outlined in Section 4.2 of this report.

Operational noise assessment from the existing e-waste recycling facility with the addition of electro-winning equipment was found to achieve the project noise trigger levels. No further mitigation measures are required for the surrounding premises.



# **APPENDIX A**

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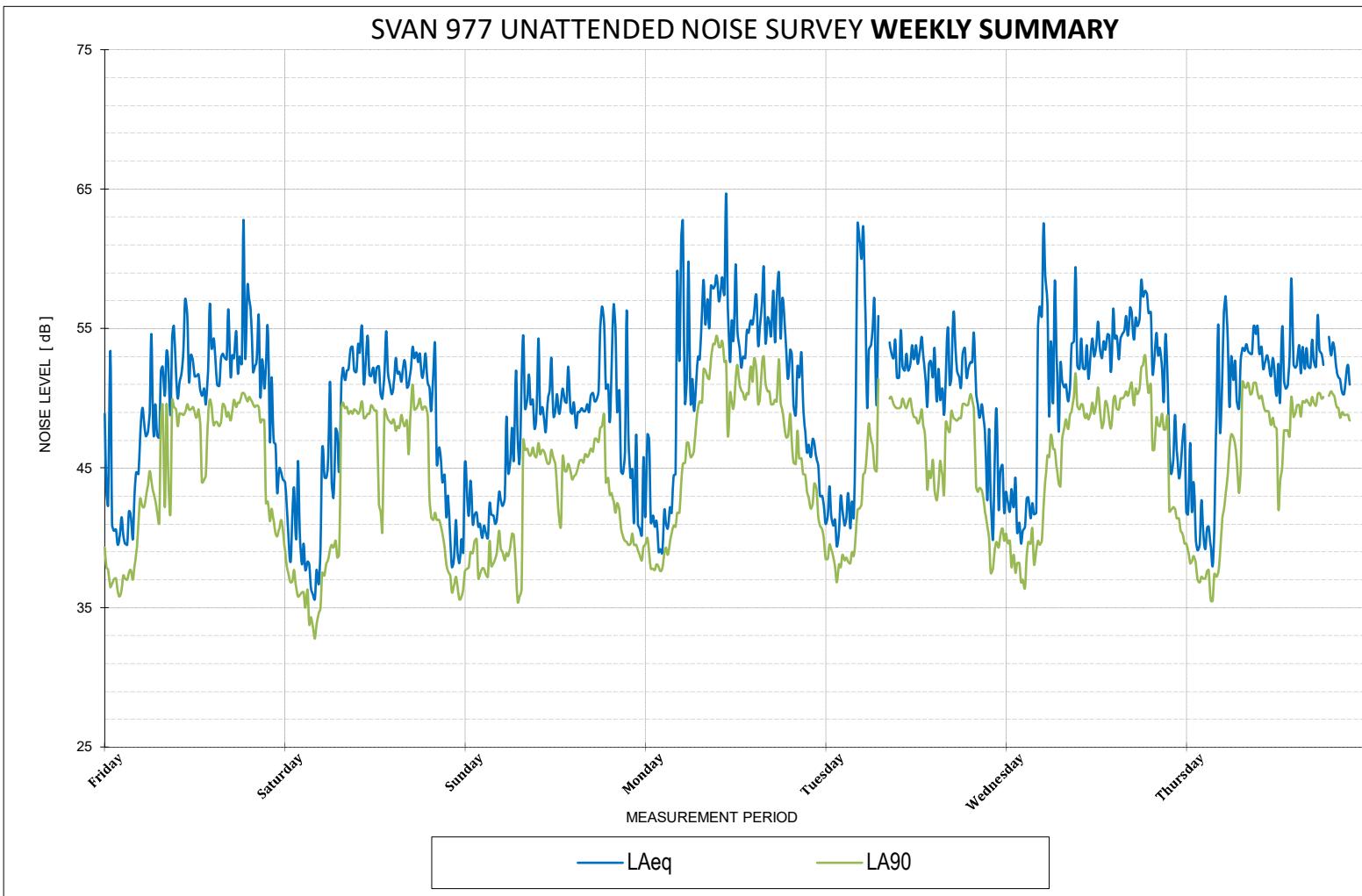
**A**

**APPENDIX A**

## WEEKLY SUMMARY

LOGGER LOCATION: 103 Biloela Street, Villawood

PERIOD: 9th to the 15th December 2022

**SUMMARY OF AMBIENT LEVELS**

	LA90 Daytime	LA90 Evening	LA90 Night-time
Day 1	44	45	37
Day 2	44	39	34
Day 3	44	40	36
Day 4	50	44	38
Day 5	44	41	38
Day 6	48	46	38
Day 7	46	49	37
RBL	44	44	37

	LAeq Daytime	LAeq Evening	LAeq Night-time
Day 1	53	56	47
Day 2	52	50	44
Day 3	50	53	45
Day 4	57	53	52
Day 5	53	51	54
Day 6	54	55	52
Day 7	53	52	49
Average	54	53	51

**SUMMARY OF TRAFFIC LEVELS**

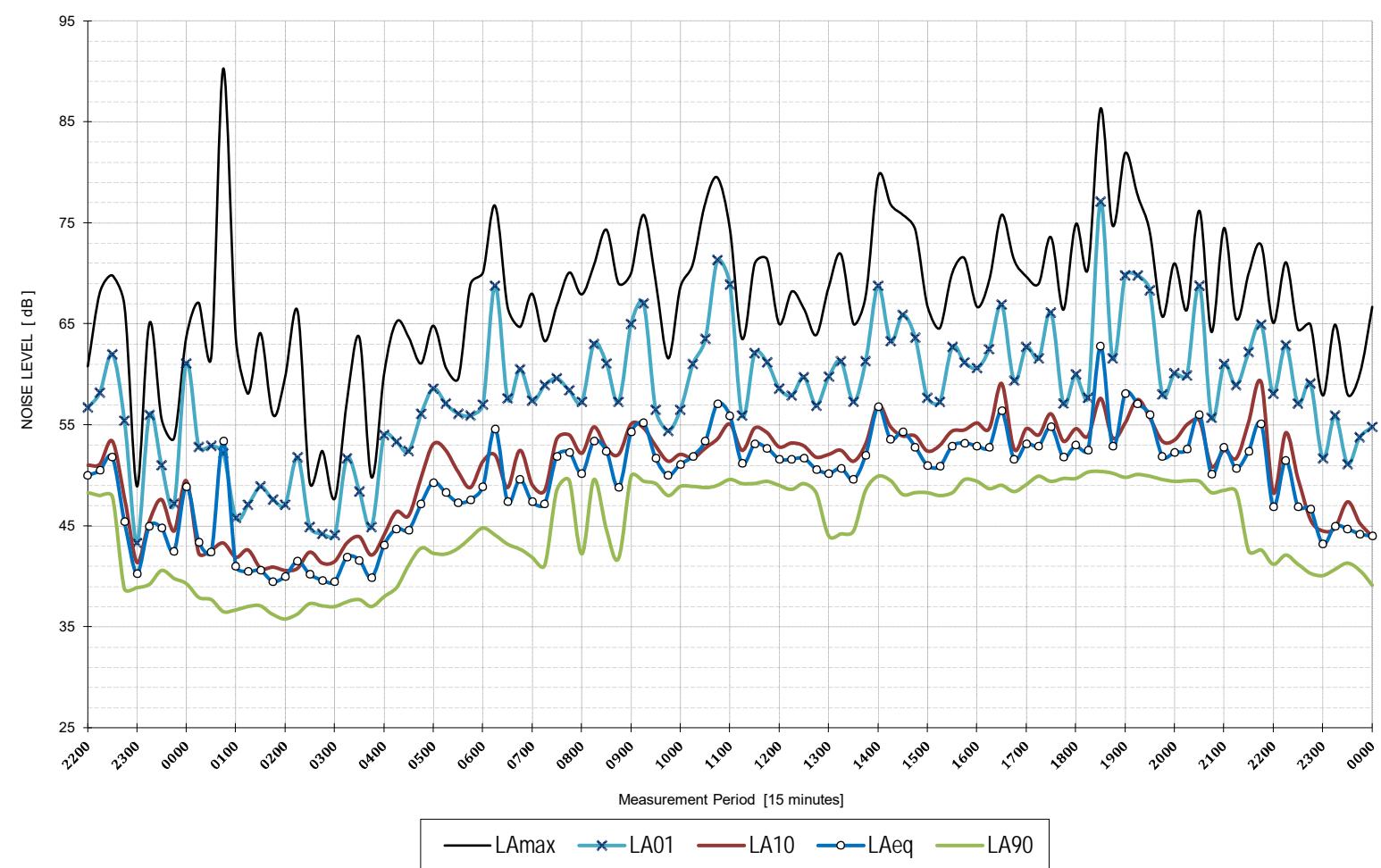
LAeq 15 hrs	0700-2200	54	dB
LAeq 9 hrs	2200-0700	51	dB
Max LAeq 1 hr	0700-2200	54	dB
Max LAeq 1 hr	2200-0700	54	dB

Maximum noise events as defined in the Environmental Noise Management Manual	23
7 day average - [L <sub>Amax</sub> - L <sub>Aeq</sub> ≥ 15]	

DAY 1

LOGGER LOCATION: 103 Biloela Street, Villawood

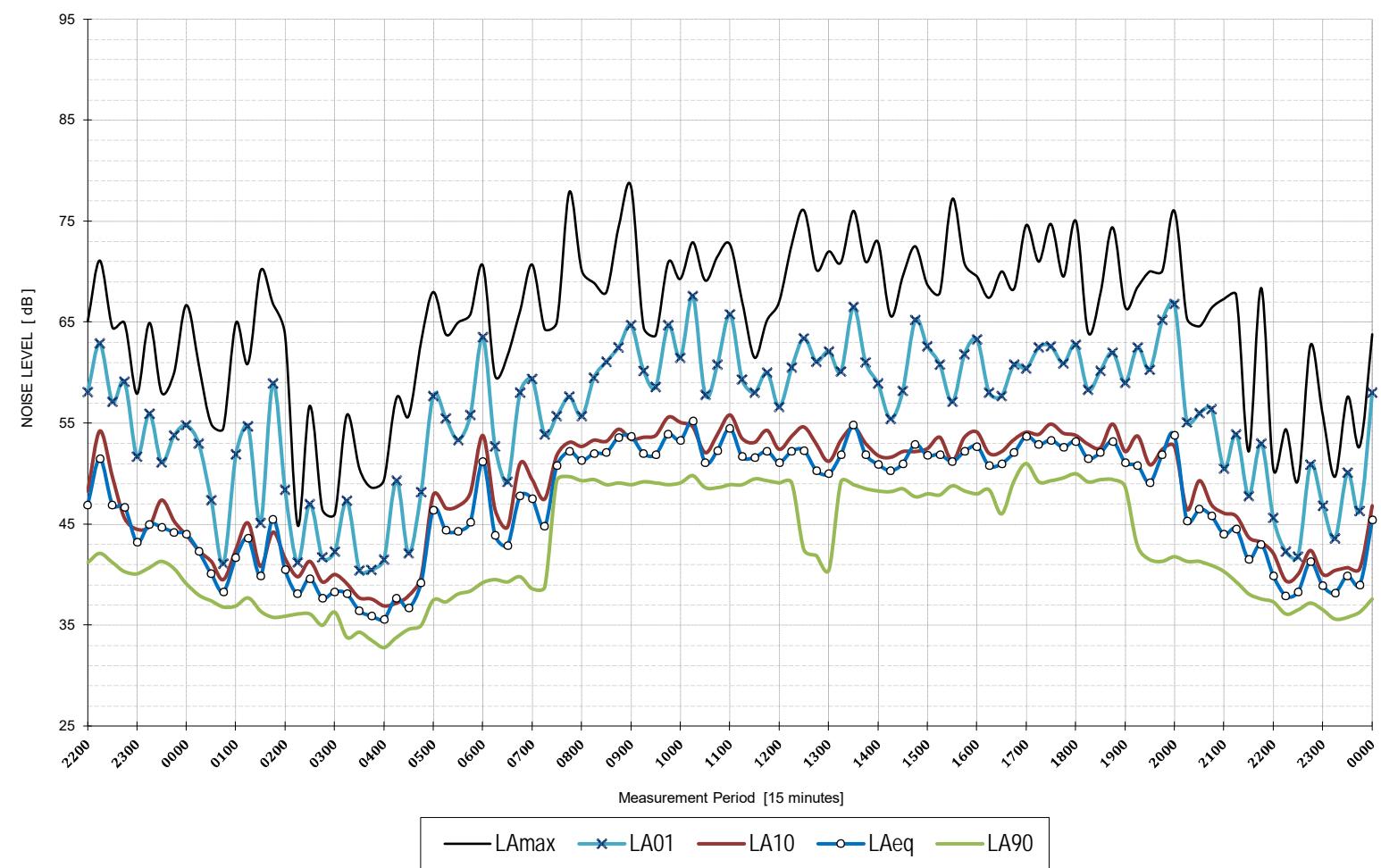
DATE: Friday, 9 December 2022



DAY 2

LOGGER LOCATION: 103 Biloela Street, Villawood

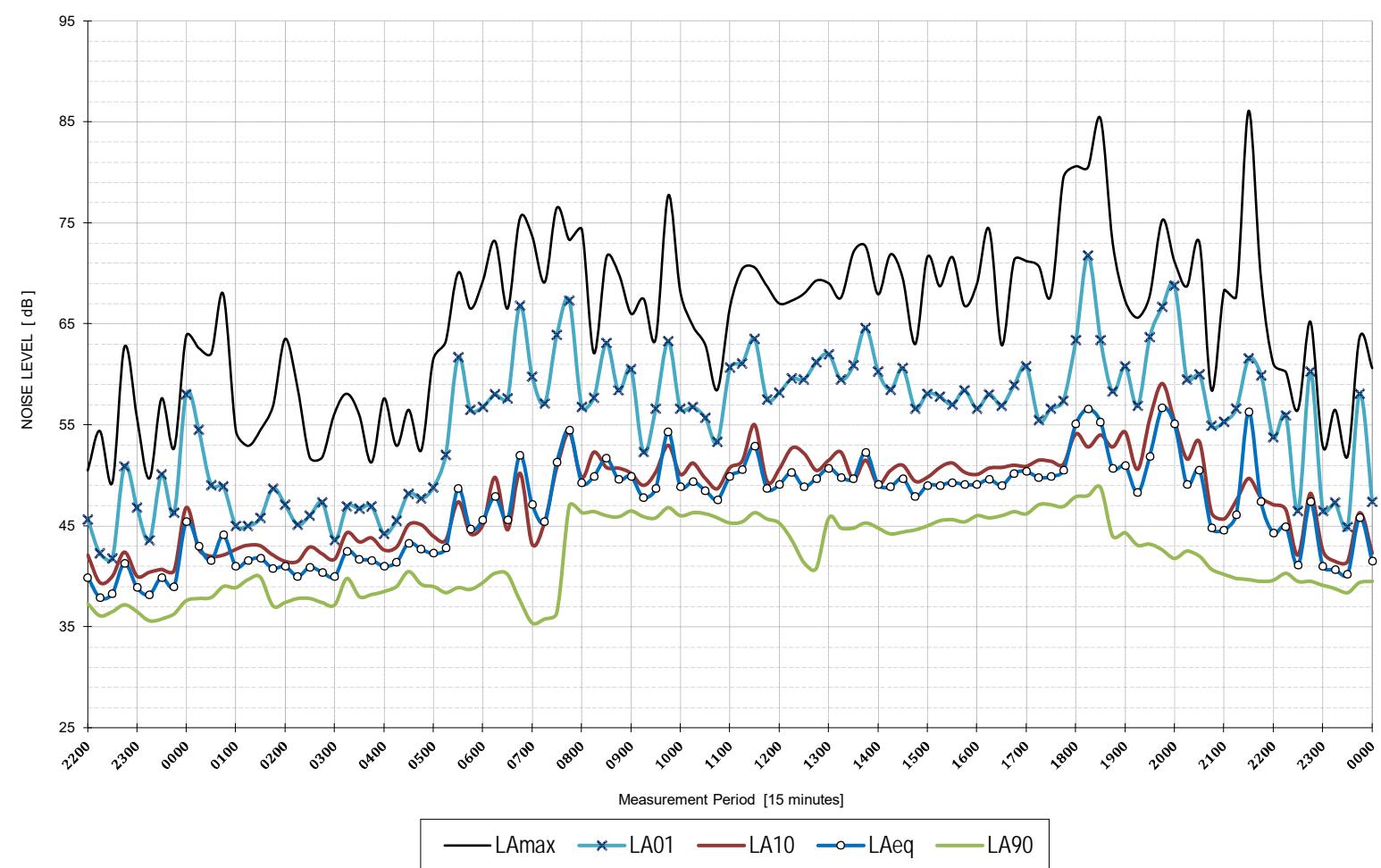
DATE: Saturday, 10 December 2022



DAY 3

LOGGER LOCATION: 103 Biloela Street, Villawood

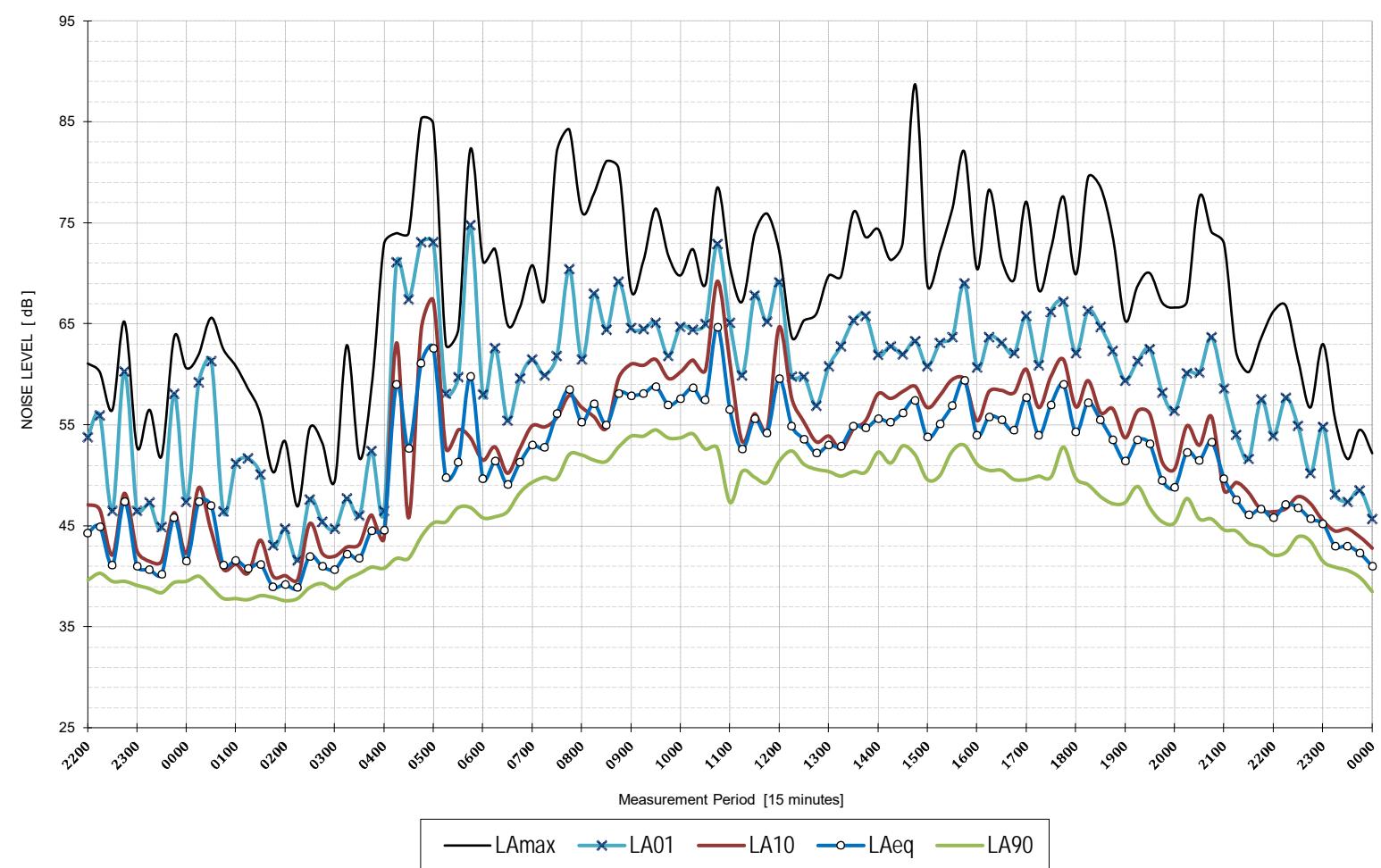
DATE: Sunday, 11 December 2022



DAY 4

LOGGER LOCATION: 103 Biloela Street, Villawood

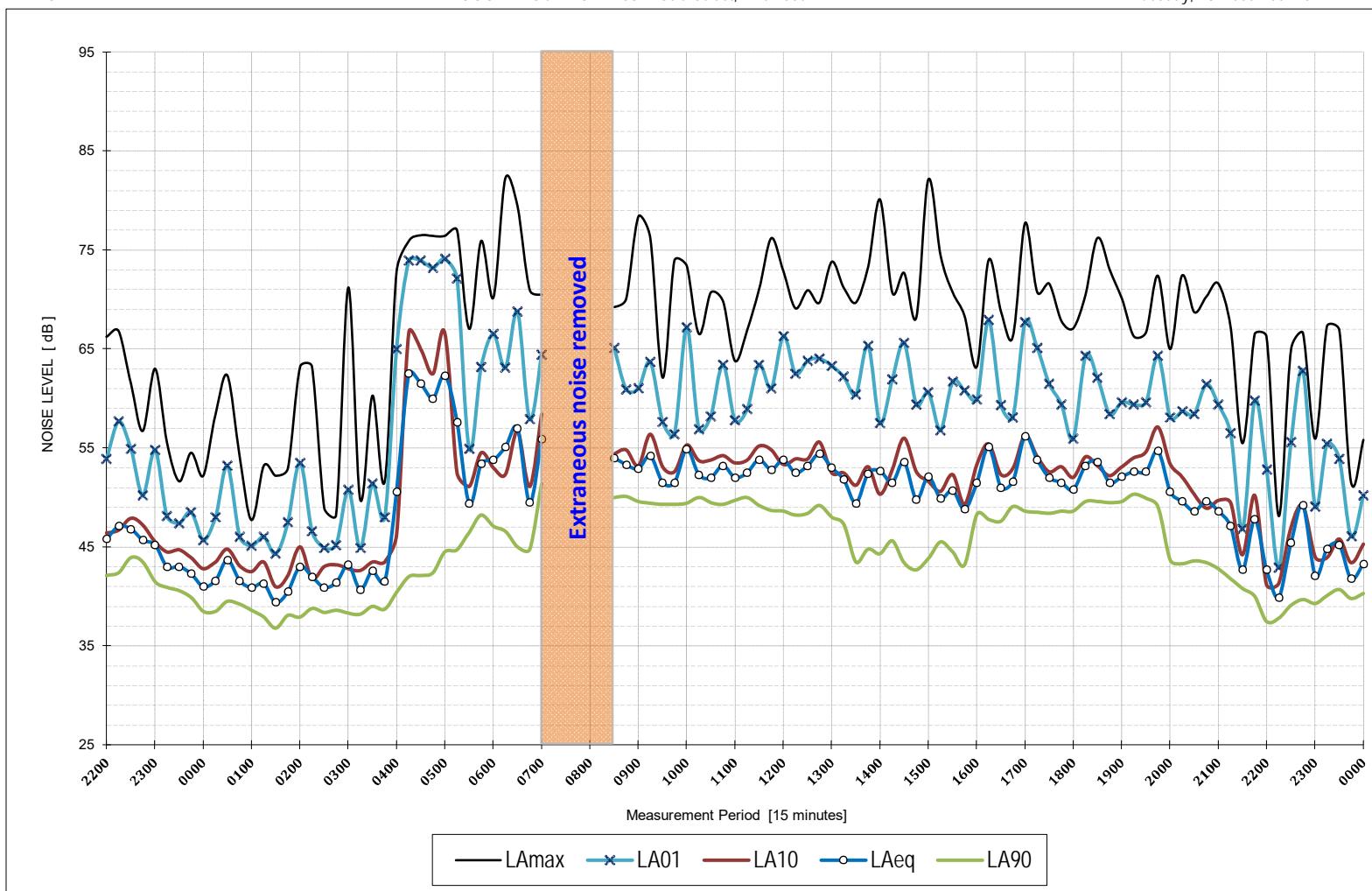
DATE: Monday, 12 December 2022



DAY 5

LOGGER LOCATION: 103 Biloela Street, Villawood

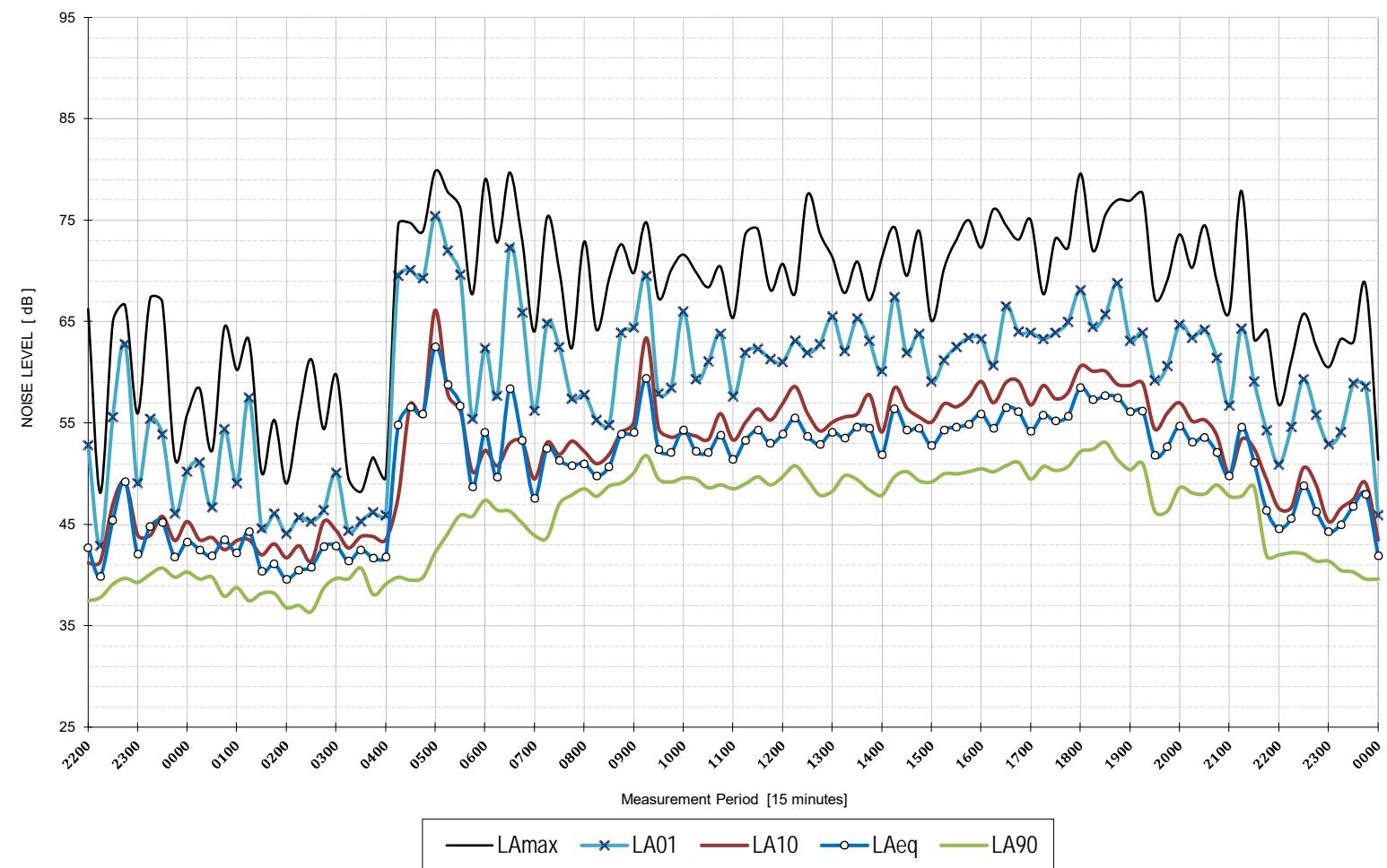
DATE: Tuesday, 13 December 2022



DAY 6

LOGGER LOCATION: 103 Biloela Street, Villawood

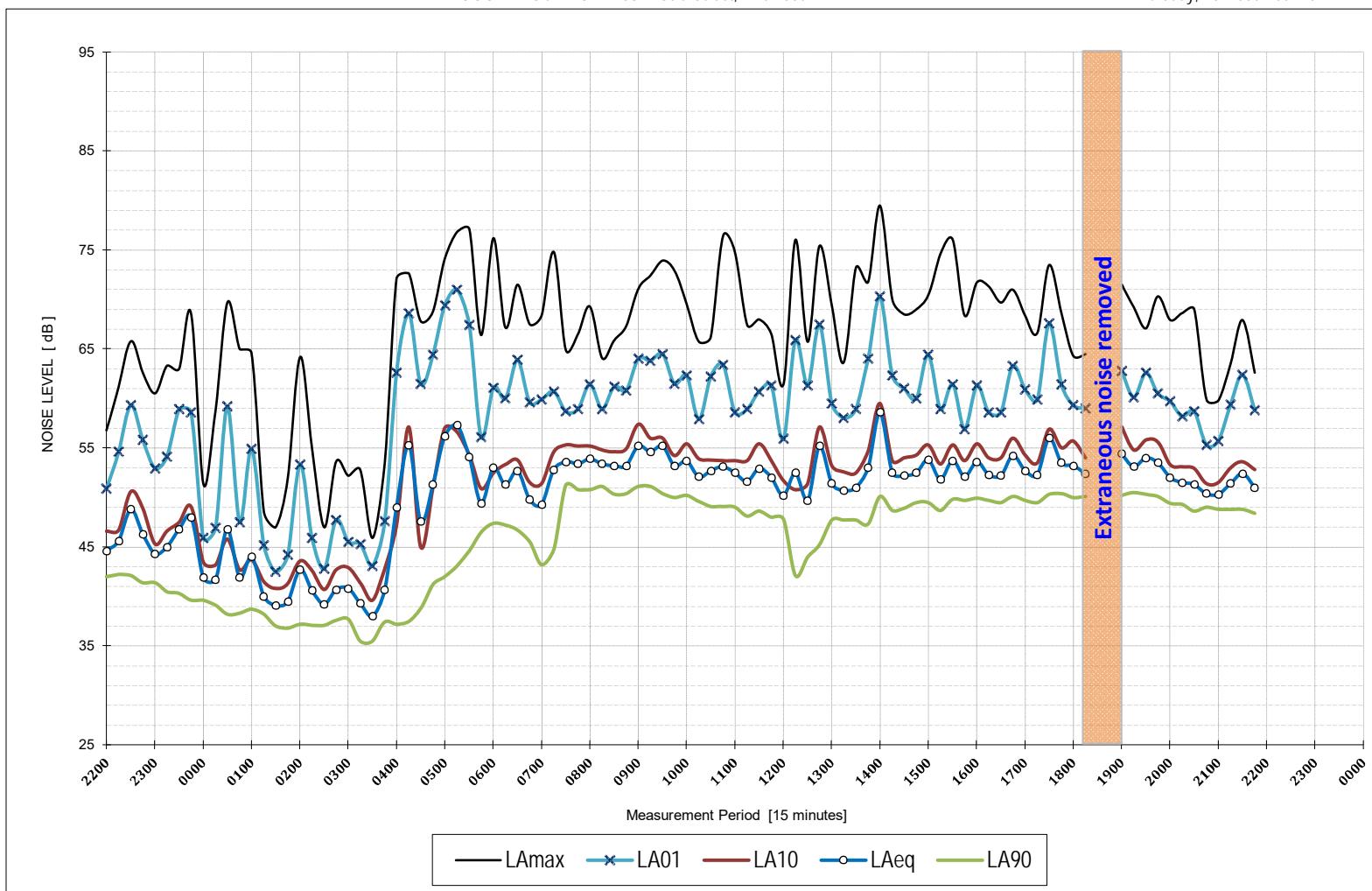
DATE: Wednesday, 14 December 2022



DAY 7

LOGGER LOCATION: 103 Biloela Street, Villawood

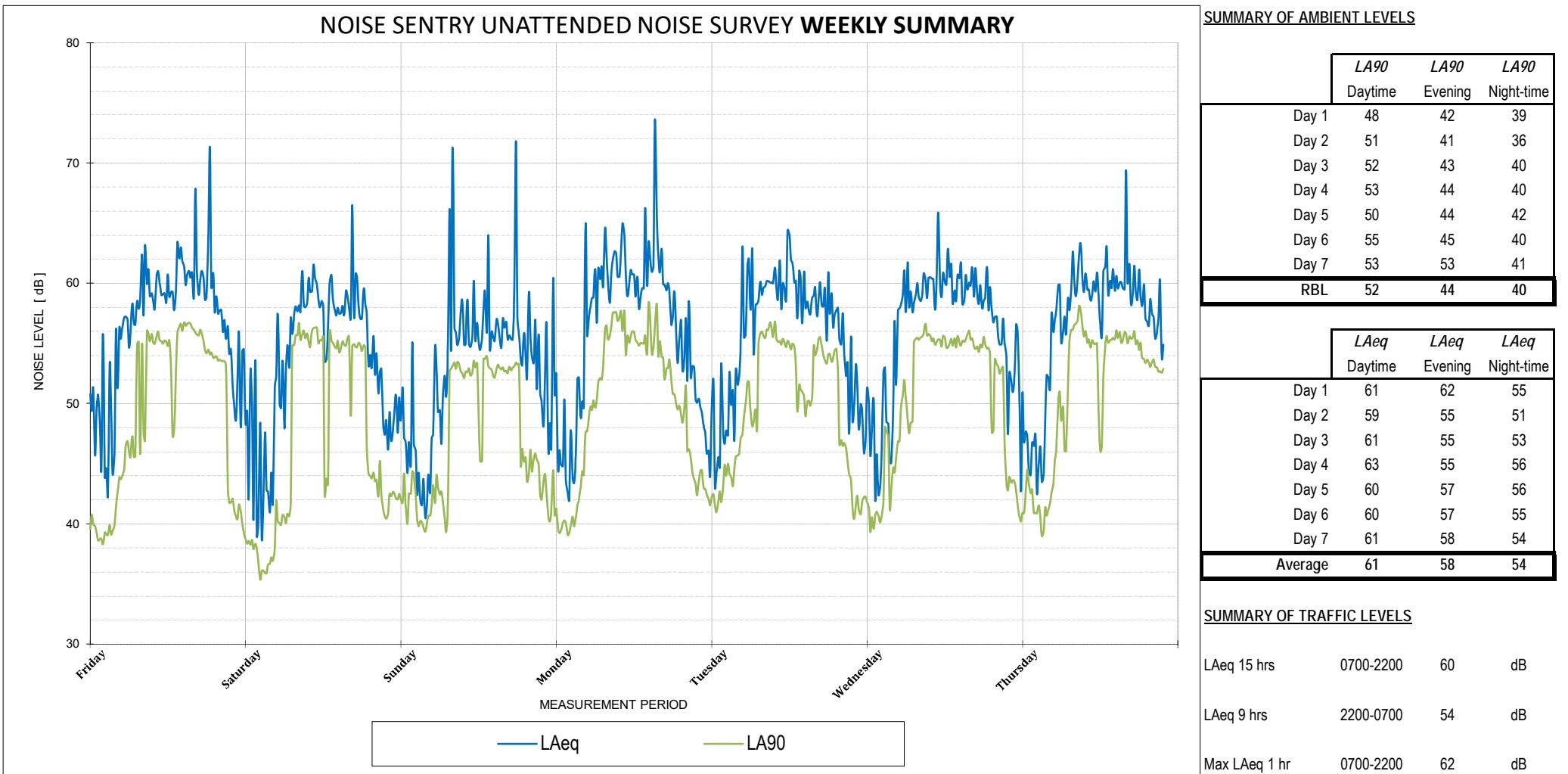
DATE: Thursday, 15 December 2022



## WEEKLY SUMMARY

LOGGER LOCATION: 93-95 Biloela Street, Villawood

PERIOD: 9th to the 15th December 2022

SUMMARY OF TRAFFIC LEVELSSUMMARY OF TRAFFIC LEVELS

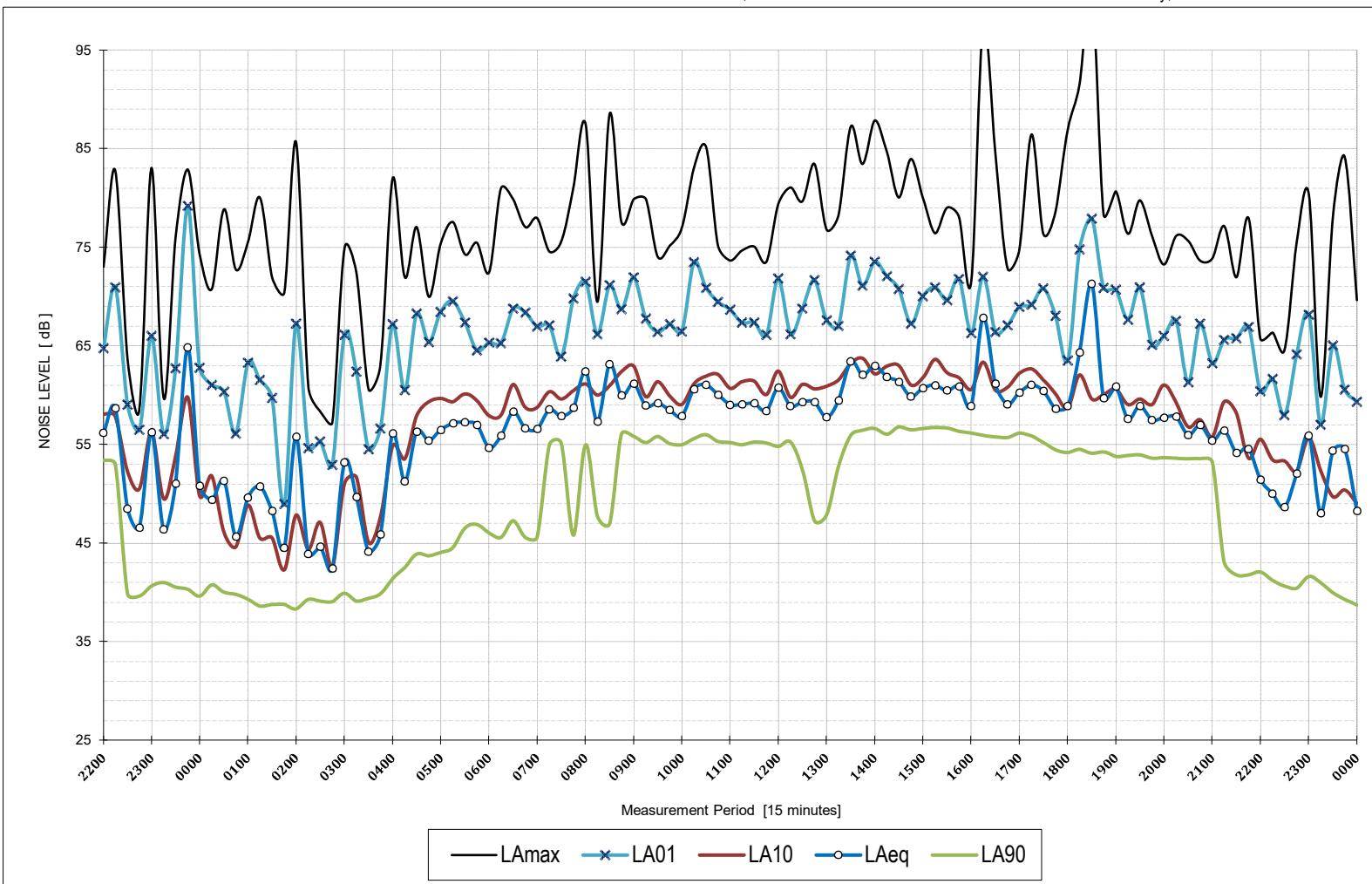
LA <sub>eq</sub> 15 hrs	0700-2200	60	dB
LA <sub>eq</sub> 9 hrs	2200-0700	54	dB
Max LA <sub>eq</sub> 1 hr	0700-2200	62	dB
Max LA <sub>eq</sub> 1 hr	2200-0700	59	dB

Maximum noise events as defined in the Environmental Noise Management Manual  
7 day average - [ $LA_{max} - LA_{eq} \geq 15$ ] 29

DAY 1

LOGGER LOCATION: 93-95 Biloela Street, Villawood

DATE: Friday, 9 December 2022

AMBIENT NOISE METRICS

Descriptor	Period	Level	Units
LA90 Daytime	0700-1800	48	dB
LA90 Evening	1800-2200	42	dB
LA90 Night-time	2200-0700	39	dB
LAeq Daytime	0700-1800	61	dB
LAeq Evening	1800-2200	62	dB
LAeq Night-time	2200-0700	55	dB

TRAFFIC & MISC. NOISE METRICS

LAeq 15 hours	0700-2200	61	dB
LAeq 9 hours	2200-0700	55	dB
Max LAeq 1 hour	0700-2200	64	dB
Max LAeq 1 hour	2200-0700	59	dB

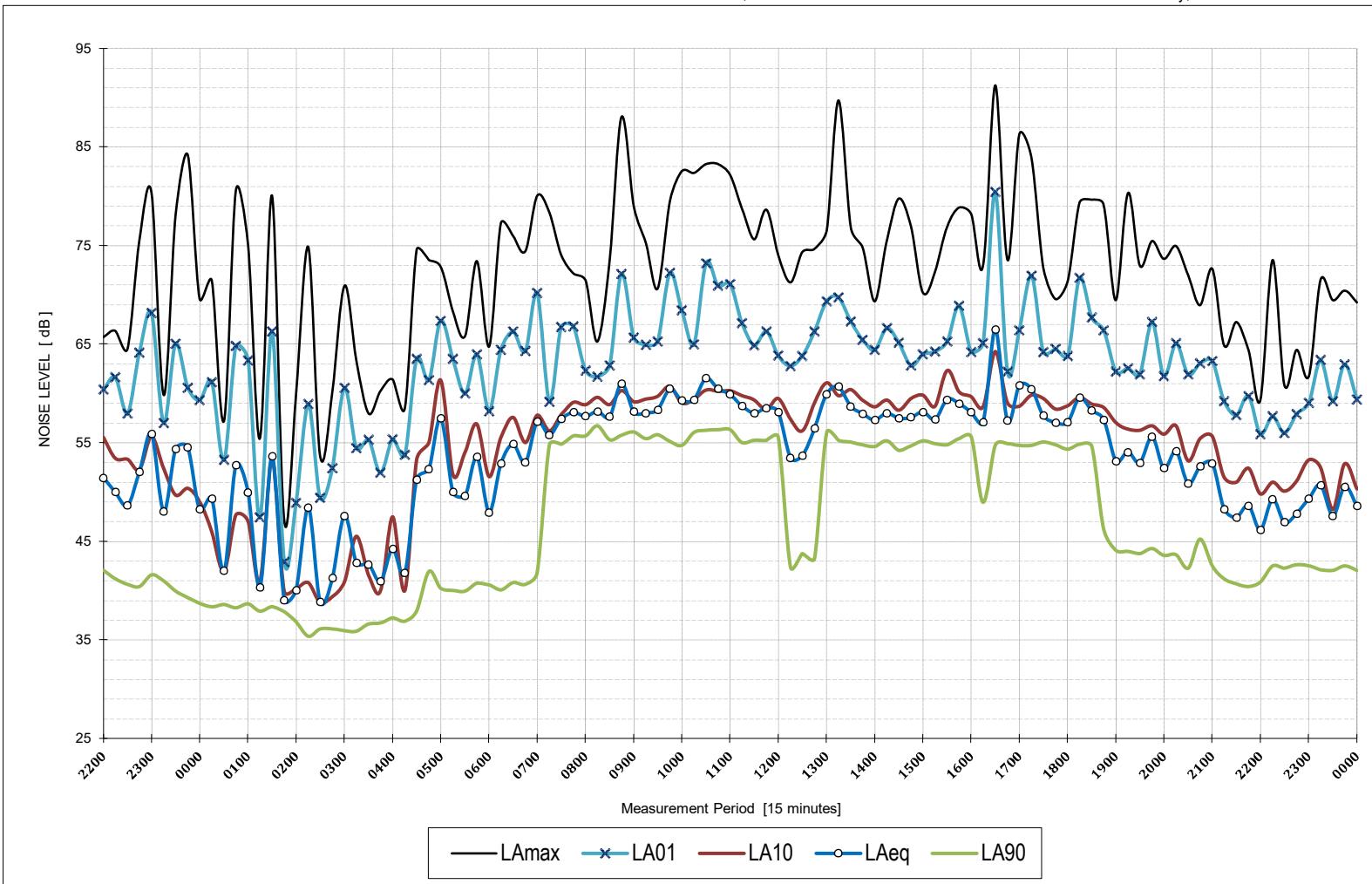
Maximum noise events as defined  
in the Environmental Noise  
Management Manual [ $L_{Amax} - L_{Aeq} \geq 15$ ]

31

DAY 2

LOGGER LOCATION: 93-95 Biloela Street, Villawood

DATE: Saturday, 10 December 2022

AMBIENT NOISE METRICS

Descriptor	Period	Level	Units
LA90 Daytime	0700-1800	51	dB
LA90 Evening	1800-2200	41	dB
LA90 Night-time	2200-0700	36	dB
LAeq Daytime	0700-1800	59	dB
LAeq Evening	1800-2200	55	dB
LAeq Night-time	2200-0700	51	dB

TRAFFIC & MISC. NOISE METRICS

LAeq 15 hours	0700-2200	58	dB
LAeq 9 hours	2200-0700	51	dB
Max LAeq 1 hour	0700-2200	60	dB
Max LAeq 1 hour	2200-0700	54	dB

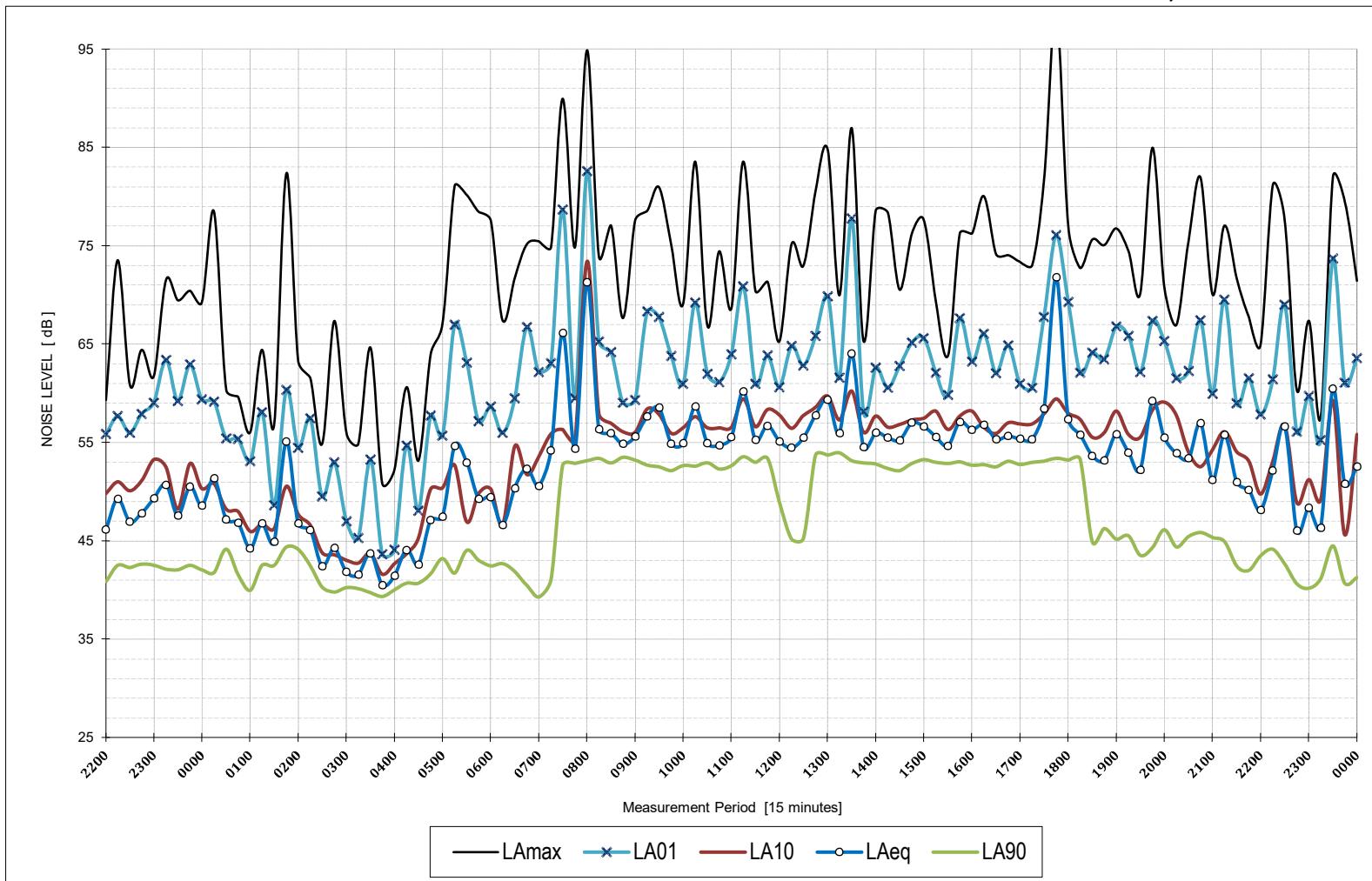
Maximum noise events as defined  
in the Environmental Noise  
Management Manual [ $L_{\text{Max}} - L_{\text{Aeq}} \geq 15$ ]

32

DAY 3

LOGGER LOCATION: 93-95 Biloela Street, Villawood

DATE: Sunday, 11 December 2022

AMBIENT NOISE METRICS

Descriptor	Period	Level	Units
LA90 Daytime	0800-1800	52	dB
LA90 Evening	1800-2200	43	dB
LA90 Night-time	2200-0800	40	dB
LAeq Daytime	0800-1800	61	dB
LAeq Evening	1800-2200	55	dB
LAeq Night-time	2200-0800	53	dB

TRAFFIC & MISC. NOISE METRICS

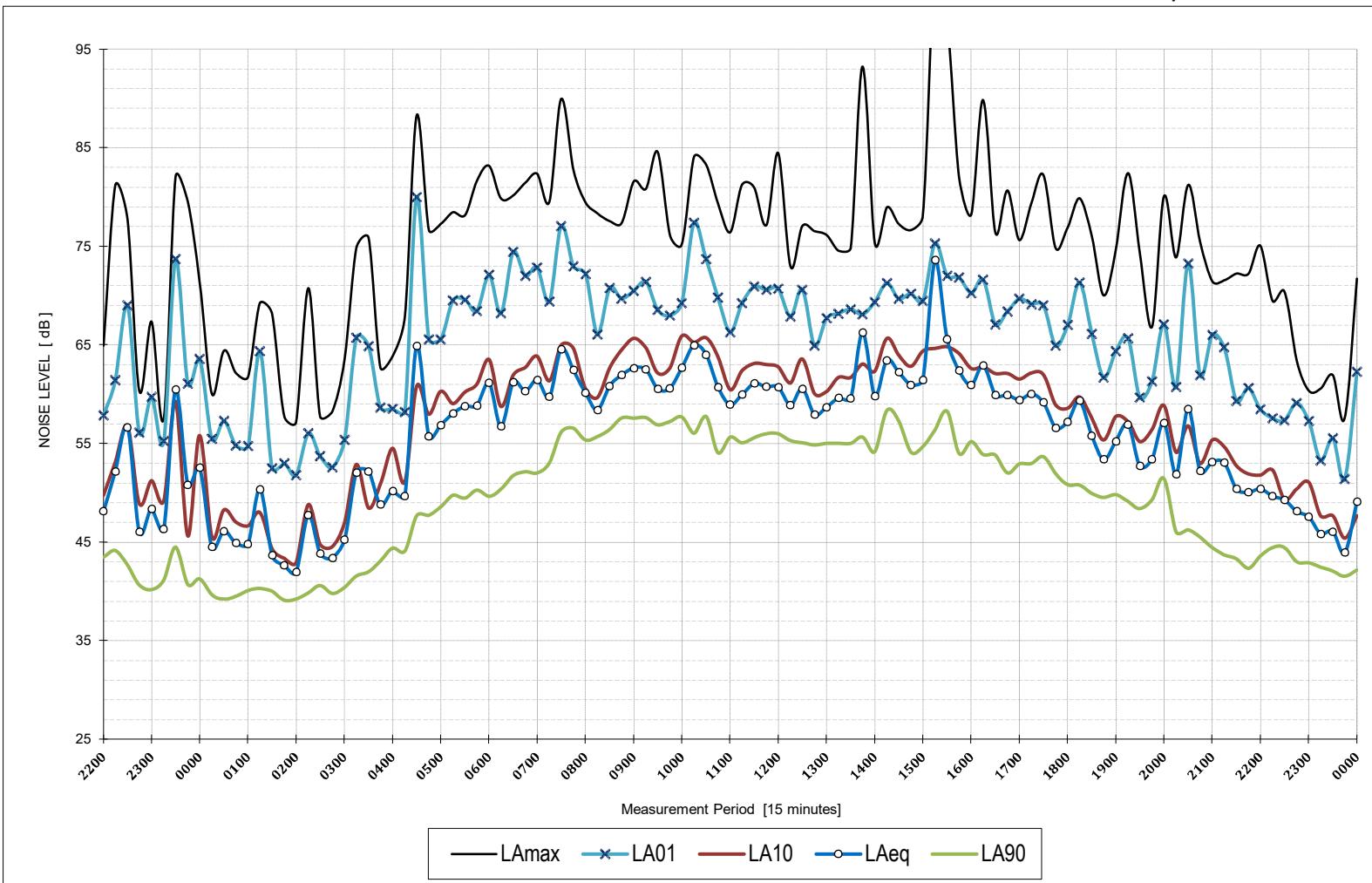
LAeq 15 hours	0700-2200	60	dB
LAeq 9 hours	2200-0700	49	dB
Max LAeq 1 hour	0700-2200	66	dB
Max LAeq 1 hour	2200-0700	50	dB

Maximum noise events as defined  
in the Environmental Noise  
Management Manual [ $L_{Amax} - L_{Aeq} \geq 15$ ] 23

DAY 4

LOGGER LOCATION: 93-95 Biloela Street, Villawood

DATE: Monday, 12 December 2022

AMBIENT NOISE METRICS

Descriptor	Period	Level	Units
LA90 Daytime	0700-1800	53	dB
LA90 Evening	1800-2200	44	dB
LA90 Night-time	2200-0700	40	dB
LAeq Daytime	0700-1800	63	dB
LAeq Evening	1800-2200	55	dB
LAeq Night-time	2200-0700	56	dB

TRAFFIC & MISC. NOISE METRICS

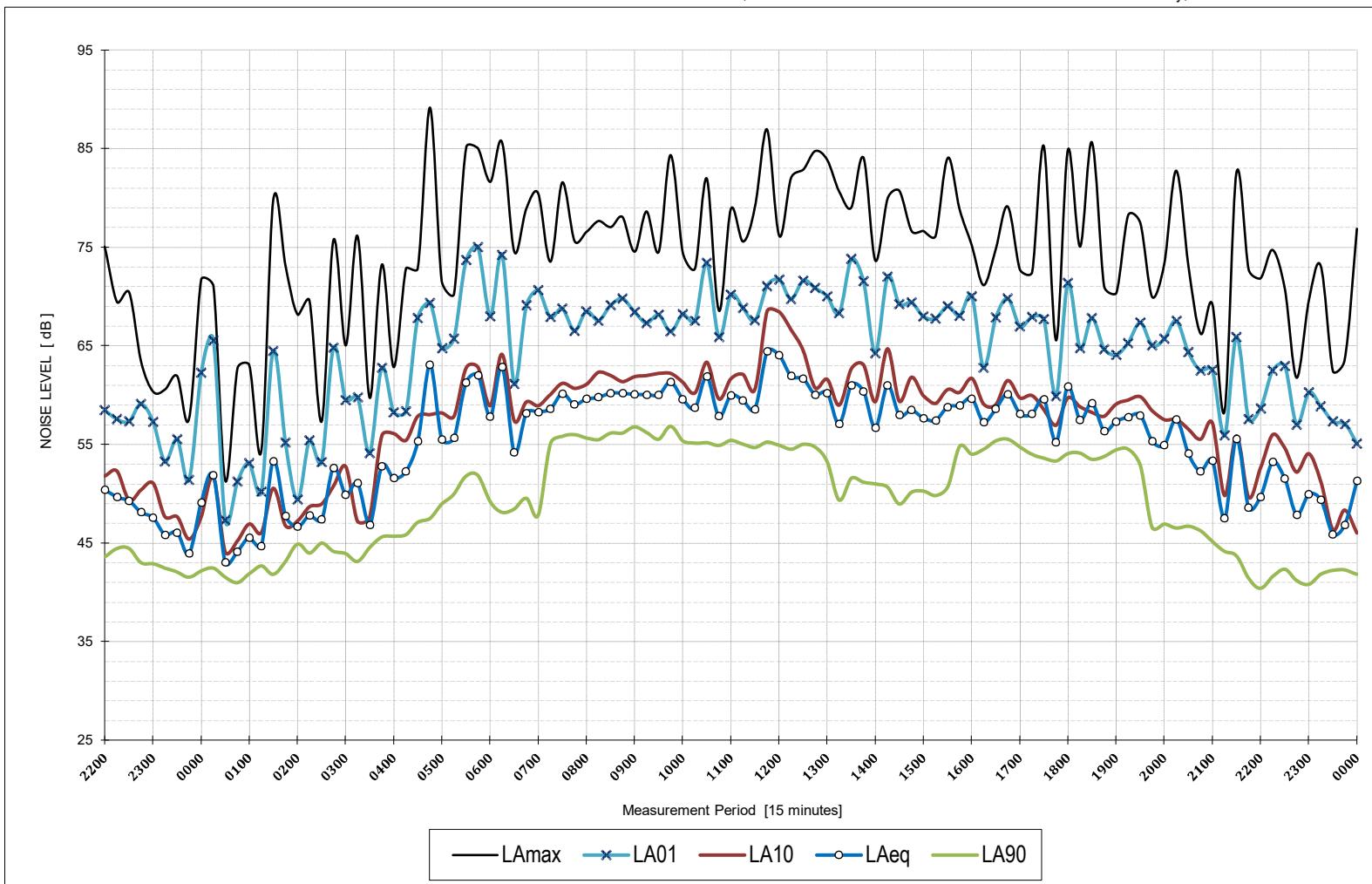
LAeq 15 hours	0700-2200	62	dB
LAeq 9 hours	2200-0700	56	dB
Max LAeq 1 hour	0700-2200	63	dB
Max LAeq 1 hour	2200-0700	60	dB

Maximum noise events as defined  
in the Environmental Noise  
Management Manual [ $L_{Amax} - L_{Aeq} \geq 15$ ] 30

DAY 5

LOGGER LOCATION: 93-95 Biloela Street, Villawood

DATE: Tuesday, 13 December 2022

AMBIENT NOISE METRICS

Descriptor	Period	Level	Units
LA90 Daytime	0700-1800	50	dB
LA90 Evening	1800-2200	44	dB
LA90 Night-time	2200-0700	42	dB
LAeq Daytime	0700-1800	60	dB
LAeq Evening	1800-2200	57	dB
LAeq Night-time	2200-0700	56	dB

TRAFFIC & MISC. NOISE METRICS

LAeq 15 hours	0700-2200	59	dB
LAeq 9 hours	2200-0700	56	dB
Max LAeq 1 hour	0700-2200	61	dB
Max LAeq 1 hour	2200-0700	60	dB

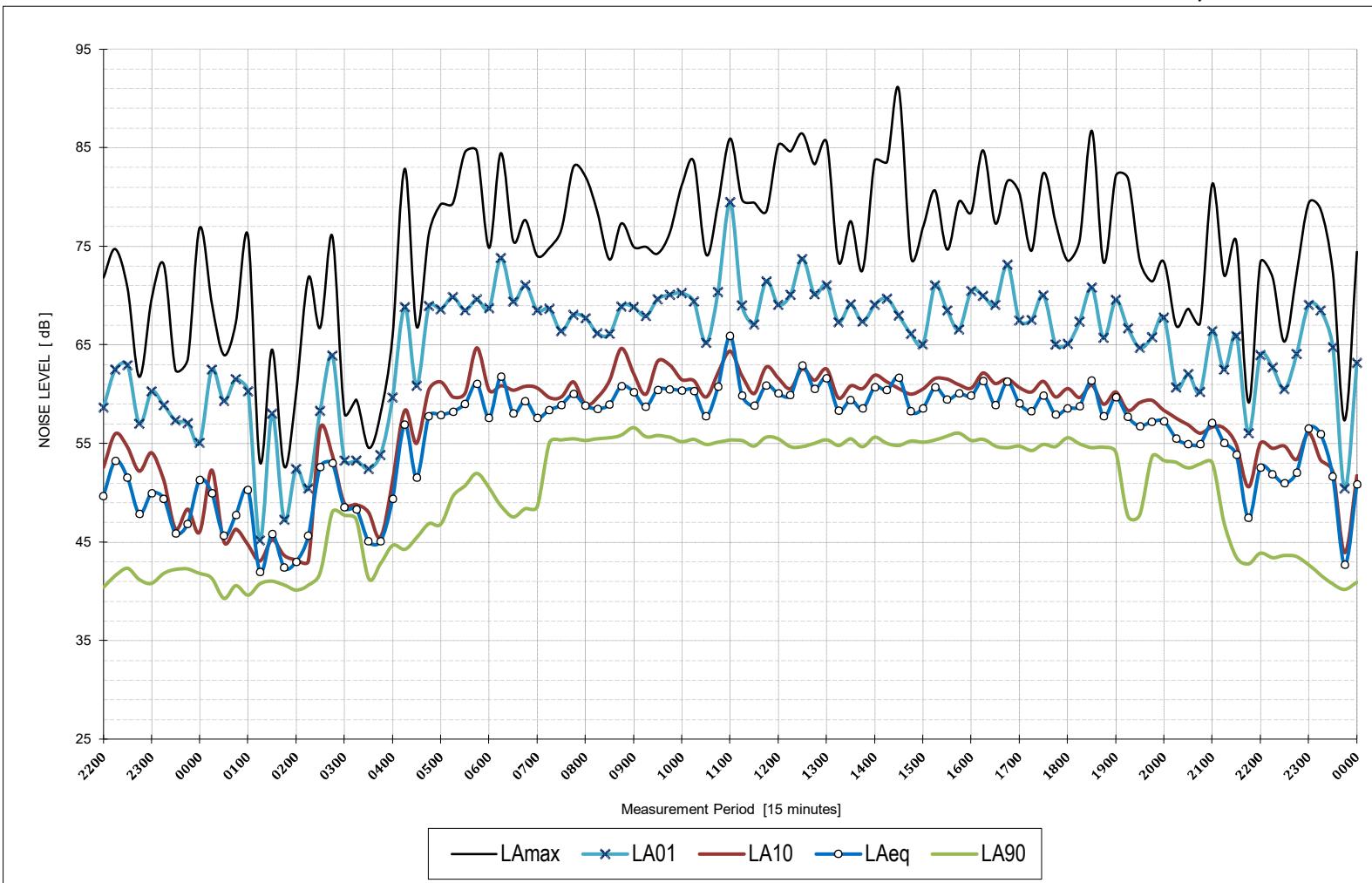
Maximum noise events as defined  
in the Environmental Noise  
Management Manual [ $L_{Max} - L_{Aeq} \geq 15$ ]

27

DAY 6

LOGGER LOCATION: 93-95 Biloela Street, Villawood

DATE: Wednesday, 14 December 2022

AMBIENT NOISE METRICS

Descriptor	Period	Level	Units
LA90 Daytime	0700-1800	55	dB
LA90 Evening	1800-2200	45	dB
LA90 Night-time	2200-0700	40	dB
LAeq Daytime	0700-1800	60	dB
LAeq Evening	1800-2200	57	dB
LAeq Night-time	2200-0700	55	dB

TRAFFIC & MISC. NOISE METRICS

LAeq 15 hours	0700-2200	60	dB
LAeq 9 hours	2200-0700	55	dB
Max LAeq 1 hour	0700-2200	61	dB
Max LAeq 1 hour	2200-0700	59	dB

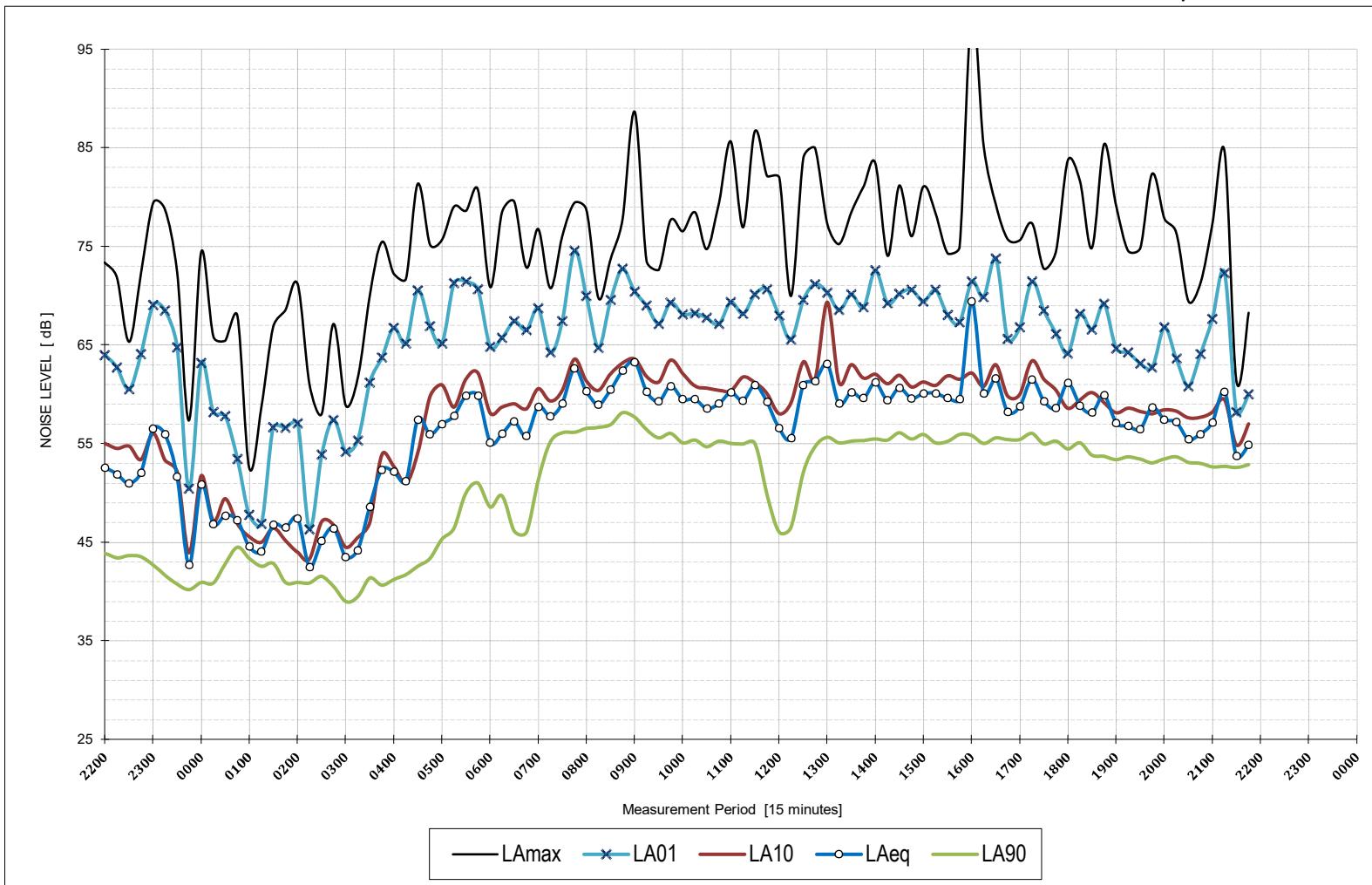
Maximum noise events as defined  
in the Environmental Noise  
Management Manual [ $L_{Amax} - L_{Aeq} \geq 15$ ]

28

DAY 7

LOGGER LOCATION: 93-95 Biloela Street, Villawood

DATE: Thursday, 15 December 2022

AMBIENT NOISE METRICS

Descriptor	Period	Level	Units
LA90 Daytime	0700-1800	53	dB
LA90 Evening	1800-2200	53	dB
LA90 Night-time	2200-0700	41	dB
LAeq Daytime	0700-1800	61	dB
LAeq Evening	1800-2200	58	dB
LAeq Night-time	2200-0700	54	dB

TRAFFIC & MISC. NOISE METRICS

LAeq 15 hours	0700-2200	60	dB
LAeq 9 hours	2200-0700	54	dB
Max LAeq 1 hour	0700-2200	62	dB
Max LAeq 1 hour	2200-0700	58	dB

Maximum noise events as defined  
in the Environmental Noise  
Management Manual [ $L_{Max} - L_{Aeq} \geq 15$ ]

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# **APPENDIX B**

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# **APPENDIX B**

hd	Station Number	Year Month Day Hour Minutes in YYYY	MM	DD	HH24	Mi format in Local time	Year Month Day Hour Minutes in YYYY	MM	DD	HH24	Mi format in Local standard time	Total precipitation in last 15 minutes in mm where observations count >= 6	Quality Total precipitation in last 15 minutes	Count of total precipitation observations in last 15 minutes	Average wind speed in last 15 minutes in km/h where observations count >= 6	Quality of average wind speed in last 15 minutes	Count of average wind speed observations in last 15 minutes	Highest maximum 3 sec wind gust in last 15 minutes in km/h where observations count >= 6	Quality of Highest maximum 3 sec wind gust in last 15 minutes	Count of Highest maximum 3 sec wind gust observations in last 15 minutes	Standard deviation of wind in last 15 minutes where observations count >= 6	Quality of standard deviation of wind in last 15 minutes	Count of standard deviation of wind observations in last 15 minutes	Average direction of wind in last 15 minutes in degrees true where observations count >= 6	Quality of average direction of wind in last 15 minutes	Count of average direction of wind observations in last 15 minutes
hd	66137	2022 12 8 0 2022	12	8	1 0	2022	12	8	0 0	0 0	0 0	0	0	0	9.2 Y	15	11.2 Y	15	11 Y	15	304 Y	15	0	0		
hd	66137	2022 12 8 1 15 2022	12	8	1 15	2022	12	8	0 15	0 Y	15	0	15	0	15	11.2 Y	15	11 Y	15	304 Y	15	0	0			
hd	66137	2022 12 8 1 30 2022	12	8	1 30	2022	12	8	0 30	0 Y	15	0	15	0	15	9.4 Y	15	9.4 Y	15	15 Y	15	303 Y	15	0	0	
hd	66137	2022 12 8 1 45 2022	12	8	1 45	2022	12	8	0 45	0 Y	15	0	15	0	15	9.4 Y	15	9.4 Y	15	10 Y	15	299 Y	15	0	0	
hd	66137	2022 12 8 2 0 2022	12	8	2 0	2022	12	8	1 0	0 Y	15	0	15	0	15	9.4 Y	15	9.4 Y	15	16 Y	15	333 Y	15	0	0	
hd	66137	2022 12 8 2 15 2022	12	8	2 15	2022	12	8	1 15	0 Y	15	0	15	0	15	9.4 Y	15	9.4 Y	15	1 Y	15	353 Y	15	0	0	
hd	66137	2022 12 8 2 30 2022	12	8	2 30	2022	12	8	1 30	0 Y	15	0	15	0	15	6.4 Y	15	7.6 Y	15	12 Y	15	343 Y	15	0	0	
hd	66137	2022 12 8 2 45 2022	12	8	2 45	2022	12	8	1 45	0 Y	15	0	15	0	15	4.1 Y	15	9.4 Y	15	10 Y	15	330 Y	15	0	0	
hd	66137	2022 12 8 3 0 2022	12	8	3 0	2022	12	8	2 0	0 Y	15	0	15	0	15	5.3 Y	15	9.4 Y	15	55 Y	15	33 Y	15	0	0	
hd	66137	2022 12 8 3 15 2022	12	8	3 15	2022	12	8	2 15	0 Y	15	0	15	0	15	8.9 Y	15	9.4 Y	15	5 Y	15	88 Y	15	0	0	
hd	66137	2022 12 8 3 30 2022	12	8	3 30	2022	12	8	2 30	0 Y	15	0	15	0	15	3.7 Y	15	9.4 Y	15	84 Y	15	79 Y	15	0	0	
hd	66137	2022 12 8 3 45 2022	12	8	3 45	2022	12	8	2 45	0 Y	15	0	15	0	15	10.4 Y	15	14.8 Y	15	14 Y	15	288 Y	15	0	0	
hd	66137	2022 12 8 4 0 2022	12	8	4 0	2022	12	8	3 0	0 Y	15	0	15	0	15	9.5 Y	14	13 Y	14	11 Y	14	264 Y	14	0	0	
hd	66137	2022 12 8 4 15 2022	12	8	4 15	2022	12	8	3 15	0 Y	15	0	15	0	15	7.3 Y	15	11.2 Y	15	22 Y	15	257 Y	15	0	0	
hd	66137	2022 12 8 4 30 2022	12	8	4 30	2022	12	8	3 30	0 Y	15	0	15	0	15	5.1 Y	15	11.2 Y	15	11 Y	15	261 Y	15	0	0	
hd	66137	2022 12 8 4 45 2022	12	8	4 45	2022	12	8	3 45	0 Y	15	0	15	0	15	5.5 Y	15	9.4 Y	15	14 Y	15	239 Y	15	0	0	
hd	66137	2022 12 8 5 0 2022	12	8	5 0	2022	12	8	4 0	0 Y	15	0	15	0	15	4.7 Y	15	7.6 Y	15	6 Y	15	261 Y	15	0	0	
hd	66137	2022 12 8 5 15 2022	12	8	5 15	2022	12	8	4 15	0 Y	15	0	15	0	15	6 Y	15	9.4 Y	15	14 Y	15	280 Y	15	0	0	
hd	66137	2022 12 8 5 30 2022	12	8	5 30	2022	12	8	4 30	0 Y	15	0	15	0	15	2.2 Y	15	7.6 Y	15	1 Y	15	303 Y	15	0	0	
hd	66137	2022 12 8 5 45 2022	12	8	5 45	2022	12	8	4 45	0 Y	15	0	15	0	15	4.7 Y	15	7.6 Y	15	7 Y	15	300 Y	15	0	0	
hd	66137	2022 12 8 6 0 2022	12	8	6 0	2022	12	8	5 0	0 Y	15	0	15	0	15	6.3 Y	15	11.2 Y	15	16 Y	15	267 Y	15	0	0	
hd	66137	2022 12 8 6 15 2022	12	8	6 15	2022	12	8	5 15	0 Y	15	0	15	0	15	10.4 Y	15	20.5 Y	15	13 Y	15	243 Y	15	0	0	
hd	66137	2022 12 8 6 30 2022	12	8	6 30	2022	12	8	5 30	0 Y	15	0	15	0	15	16.1 Y	15	25.9 Y	15	20 Y	15	244 Y	15	0	0	
hd	66137	2022 12 8 6 45 2022	12	8	6 45	2022	12	8	5 45	0 Y	15	0	15	0	15	20.3 Y	15	33.5 Y	15	19 Y	15	234 Y	15	0	0	
hd	66137	2022 12 8 7 0 2022	12	8	7 0	2022	12	8	6 0	0 Y	15	0	15	0	15	19.1 Y	15	33.5 Y	15	17 Y	15	230 Y	15	0	0	
hd	66137	2022 12 8 7 15 2022	12	8	7 15	2022	12	8	6 15	0 Y	15	0	15	0	15	17.9 Y	15	29.5 Y	15	18 Y	15	223 Y	15	0	0	
hd	66137	2022 12 8 7 30 2022	12	8	7 30	2022	12	8	6 30	0 Y	15	0	15	0	15	21.4 Y	15	40.7 Y	15	19 Y	15	224 Y	15	0	0	
hd	66137	2022 12 8 7 45 2022	12	8	7 45	2022	12	8	6 45	0 Y	15	0	15	0	15	19.6 Y	15	37.1 Y	15	19 Y	15	229 Y	15	0	0	
hd	66137	2022 12 8 8 0 2022	12	8	8 0	2022	12	8	7 0	0 Y	15	0	15	0	15	16.8 Y	15	35.3 Y	15	26 Y	15	246 Y	15	0	0	
hd	66137	2022 12 8 8 15 2022	12	8	8 15	2022	12	8	7 15	0 Y	15	0	15	0	15	17.5 Y	15	29.5 Y	15	22 Y	15	262 Y	15	0	0	
hd	66137	2022 12 8 8 30 2022	12	8	8 30	2022	12	8	7 30	0 Y	15	0	15	0	15	17.6 Y	15	37.1 Y	15	24 Y	15	248 Y	15	0	0	
hd	66137	2022 12 8 8 45 2022	12	8	8 45	2022	12	8	7 45	0 Y	15	0	15	0	15	17.8 Y	15	29.5 Y	15	28 Y	15	267 Y	15	0	0	
hd	66137	2022 12 8 9 0 2022	12	8	9 0	2022	12	8	8 0	0 Y	15	0	15	0	15	15.9 Y	15	35.3 Y	15	35 Y	15	241 Y	15	0	0	
hd	66137	2022 12 8 9 15 2022	12	8	9 15	2022	12	8	8 15	0 Y	15	0	15	0	15	18.8 Y	14	29.5 Y	14	23 Y	14	224 Y	14	0	0	
hd	66137	2022 12 8 9 30 2022	12	8	9 30	2022	12	8	8 30	0 Y	15	0	15	0	15	16.4 Y	15	27.7 Y	15	32 Y	15	239 Y	15	0	0	
hd	66137	2022 12 8 9 45 2022	12	8	9 45	2022	12	8	8 45	0 Y	15	0	15	0	15	16.1 Y	15	25.9 Y	15	29 Y	15	250 Y	15	0	0	
hd	66137	2022 12 8 10 0 2022	12	8	10 0	2022	12	8	9 0	0 Y	15	0	15	0	15	18.3 Y	15	29.5 Y	15	25 Y	15	220 Y	15	0	0	
hd	66137	2022 12 8 10 15 2022	12	8	10 15	2022	12	8	9 15	0 Y	15	0	15	0	15	16.8 Y	15	29.5 Y	15	24 Y	15	235 Y	15	0	0	
hd	66137	2022 12 8 10 30 2022	12	8	10 30	2022	12	8	9 30	0 Y	15	0	15	0	15	18 Y	15	29.5 Y	15	23 Y	15	235 Y	15	0	0	
hd	66137	2022 12 8 10 45 2022	12	8	10 45	2022	12	8	9 45	0 Y	15	0	15	0	15	13.8 Y	15	27.7 Y	15	33 Y	15	223 Y	15	0	0	
hd	66137	2022 12 8 11 0 2022	12	8	11 0	2022	12	8	10 0	0 Y	15	0	15	0	15	14.1 Y	15	29.5 Y	15	29 Y	15	219 Y	15	0	0	
hd	66137	2022 12 8 11 15 2022	12	8	11 15	2022	12	8	10 15	0 Y	15	0	15	0	15	15 Y	15	29.5 Y	15	23 Y	15	234 Y	15	0	0	
hd	66137	2022 12 8 11 30 2022	12	8	11 30	2022	12	8	10 30	0 Y	15	0	15	0	15	9.9 Y	15	18.4 Y	15	50 Y	15	230 Y	15	0	0	
hd	66137	2022 12 8 11 45 2022	12	8	11 45	2022	12	8	10 45	0 Y	15	0	15	0	15	15 Y	15	31.3 Y	15	85 Y	15	354 Y	15	0	0	
hd	66137	2022 12 8 12 0 2022	12	8	12 0	2022	12	8	11 0	0 Y	15	0	15	0	15	22.6 Y	15	38.9 Y	15	36 Y	15	98 Y	15	0	0	
hd	66137	2022 12 8 12 15 2022	12	8	12 15	2022	12	8	11 15	0 Y	15	0	15	0	15	24.6 Y	15	33.5 Y	15	13 Y	15	111 Y	15	0	0	
hd	66137	2022 12 8 12 30 2022	12	8	12 30	2022	12	8	11 30	0 Y	15	0	15	0	15	24.5 Y	15	33.5 Y	15	12 Y	15	105 Y	15	0	0	
hd	66137	2022 12 8 12 45 2022	12	8	12 45	2022	12	8	11 45	0 Y	15	0	15	0	15	25.7 Y	15	37.1 Y	15							

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hd	66137	2022	12	8	14	0	2022	12	8	13	0	0Y	15	25.3Y	15	33.5Y	15	21Y	15	126Y	15
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hd	66137	2022	12	8	14	30	2022	12	8	13	30	0Y	15	28.2Y	15	38.9Y	15	13Y	15	125Y	15
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hd	66137	2022	12	8	15	0	2022	12	8	14	0	0Y	15	30.3Y	15	42.5Y	15	15Y	15	124Y	15
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hd	66137	2022	12	8	21	45	2022	12	8	20	45	0Y	15	14.4Y	15	20.5Y	15	13Y	15	157Y	15
hd	66137	2022	12	8	22	0	2022	12	8	21	0	0Y	15	12.5Y	15	16.6Y	15	11Y	15	172Y	15
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hd	66137	2022	12	8	22	45	2022	12	8	21	45	0Y	15	6.8Y	15	7.6Y	15	10Y	15	227Y	15
hd	66137	2022	12	8	23	0	2022	12	8	22	0	0Y	15	5.8Y	15	7.6Y	15	1Y	15	225Y	15
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hd	66137	2022	12	8	23	30	2022	12	8	22	30	0Y	15	2Y	15	7.6Y	15	2Y	15	257Y	15
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hd	66137	2022	12	9	0	15	2022	12	8	23	15	0Y	15	5.5Y	15	7.6Y	15	7Y	15	252Y	15
hd	66137	2022	12	9	0	30	2022	12	8	23	30	0Y	15	7.7Y	15	9.4Y	15	7Y	15	250Y	15
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hd	66137	2022	12	9	1	30	2022	12	9	0	30	0Y	15	10.6Y	15	13Y	15	13Y	15	196Y	15
hd	66137	2022	12	9	1	45	2022	12	9	0	45	0Y	15	8.4Y	15	11.2Y	15	13Y	15	203Y	15
hd	66137	2022	12	9	2	0	2022	12	9	1	0	0Y	15	7Y	15	9.4Y	15	10Y	15	211Y	15
hd	66137	2022	12	9	2	15	2022	12	9	1	15	0Y	15	3.8Y	14	7.6Y	14	6Y	14	250Y	14
hd	66137	2022	12	9	2	30	2022	12	9	1	30	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	9	2	45	2022	12	9	1	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	9	3	0	2022	12	9	2	0	0Y	15	7Y	15	9.4Y	15	5Y	15	254Y	15
hd	66137	2022	12	9	3	15	2022	12	9	2	15	0Y	15	3.8Y	15	7.6Y	15	2Y	15	248Y	15
hd	66137	2022	12	9	3	30	2022	12	9	2	30	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	9	3	45	2022	12	9	2	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	9	4	0	2022	12	9	3	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
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hd	66137	2022	12	9	5	45	2022	12	9	4	45	0Y	15	3.6Y	15	7.6Y	15	13Y	15	302Y	15
hd	66137	2022	12	9	6	0	2022	12	9	5	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
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hd	66137	2022	12	9	6	45	2022	12	9	5	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	9	7	0	2022	12	9	6	0	0Y	15	1.8Y	15	7.6Y	15	31Y	15	289Y	15
hd	66137	2022	12	9	7	15	2022	12	9	6	15	0Y	15	3.4Y	15	7.6Y	15	7Y	15	233Y	15
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hd	66137	2022	12	9	7	45	2022	12	9	6	45	0Y	15	8.3Y	15	11.2Y	15	10Y	15	229Y	15
hd	66137	2022	12	9	8	0	2022	12	9	7	0	0Y	15	8.7Y	15	13Y	15	26Y	15	231Y	15
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hd	66137	2022	12	9	8	45	2022	12	9	7	45	0Y	15	8.3Y	15	13Y	15	64Y	15	263Y	15
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hd	66137	2022	12	9	10	45	2022	12	9	9	45	0Y	15	8.8Y	15	18.4Y	15	23Y	15	91Y	15
hd	66137	2022	12	9	11	0	2022	12	9	10	0	0Y	15	11.9Y	15	18.4Y	15	29Y	15	107Y	15
hd	66137	2022	12	9	11	15	2022	12	9	10	15	0Y	15	14.4Y	14	27.7Y	14	28Y	14	124Y	14
hd	66137	2022	12	9	11	30	2022	12	9	10	30	0Y	15	14.3Y	15	24.1Y	15	13Y	15	137Y	15
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hd	66137	2022	12	9	12	0	2022	12	9	11	0	0Y	15	12.2Y	15	24.1Y	15	31Y	15	134Y	15
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hd	66137	2022	12	9	13	0	2022	12	9	12	0	0Y	15	18.5Y	15	27.7Y	15	27Y	15	110Y	15
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hd	66137	2022	12	9	17	0	2022	12	9	16	0	0Y	15	21.8Y	15	35.3Y	15	21Y	15	136Y	15
hd	66137	2022	12	9	17	15	2022	12	9	16	15	0Y	15	25.8Y	15	40.7Y	15	16Y	15	129Y	15
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hd	66137	2022	12	9	18	15	2022	12	9	17	15	0Y	15	22.2Y	15	31.3Y	15	22Y	15	134Y	15
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hd	66137	2022	12	9	18	45	2022	12	9	17	45	0Y	15	22.2Y	15	31.3Y	15	14Y	15	137Y	15
hd	66137	2022	12	9	19	0	2022	12	9	18	0	0Y	15	21Y	15	29.5Y	15	13Y	15	141Y	15

hd	66137	2022	12	9	19	15	2022	12	9	18	15	0Y	15	21.1Y	14	27.7Y	14	10Y	14	145Y	14
hd	66137	2022	12	9	19	30	2022	12	9	18	30	0Y	15	18.9Y	15	25.9Y	15	12Y	15	133Y	15
hd	66137	2022	12	9	19	45	2022	12	9	18	45	0Y	15	20.1Y	15	33.5Y	15	15Y	15	156Y	15
hd	66137	2022	12	9	20	0	2022	12	9	19	0	0Y	15	21.1Y	15	29.5Y	15	12Y	15	139Y	15
hd	66137	2022	12	9	20	15	2022	12	9	19	15	0Y	15	19Y	15	27.7Y	15	18Y	15	150Y	15
hd	66137	2022	12	9	20	30	2022	12	9	19	30	0Y	15	15.5Y	15	25.9Y	15	10Y	15	149Y	15
hd	66137	2022	12	9	20	45	2022	12	9	19	45	0Y	15	14.4Y	15	20.5Y	15	12Y	15	142Y	15
hd	66137	2022	12	9	21	0	2022	12	9	20	0	0Y	15	16.3Y	15	25.9Y	15	12Y	15	149Y	15
hd	66137	2022	12	9	21	15	2022	12	9	20	15	0Y	15	16.5Y	15	25.9Y	15	13Y	15	147Y	15
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hd	66137	2022	12	9	21	45	2022	12	9	20	45	0Y	15	12.7Y	15	20.5Y	15	13Y	15	162Y	15
hd	66137	2022	12	9	22	0	2022	12	9	21	0	0Y	15	13.4Y	15	20.5Y	15	17Y	15	162Y	15
hd	66137	2022	12	9	22	15	2022	12	9	21	15	0Y	15	13.9Y	15	22.3Y	15	12Y	15	154Y	15
hd	66137	2022	12	9	22	30	2022	12	9	21	30	0Y	15	13.4Y	15	18.4Y	15	15Y	15	157Y	15
hd	66137	2022	12	9	22	45	2022	12	9	21	45	0Y	15	13.4Y	15	18.4Y	15	13Y	15	161Y	15
hd	66137	2022	12	9	23	0	2022	12	9	22	0	0Y	15	12.1Y	15	16.6Y	15	19Y	15	164Y	15
hd	66137	2022	12	9	23	15	2022	12	9	22	15	0Y	15	14.5Y	15	27.7Y	15	14Y	15	175Y	15
hd	66137	2022	12	9	23	30	2022	12	9	22	30	0Y	15	16.4Y	15	27.7Y	15	11Y	15	155Y	15
hd	66137	2022	12	9	23	45	2022	12	9	22	45	0Y	15	12.8Y	15	18.4Y	15	12Y	15	151Y	15
hd	66137	2022	12	10	0	0	2022	12	9	23	0	0Y	15	11.8Y	15	16.6Y	15	13Y	15	150Y	15
hd	66137	2022	12	10	0	15	2022	12	9	23	15	0Y	15	11.7Y	14	14.8Y	14	12Y	14	149Y	14
hd	66137	2022	12	10	0	30	2022	12	9	23	30	0Y	15	11.5Y	15	16.6Y	15	14Y	15	150Y	15
hd	66137	2022	12	10	0	45	2022	12	9	23	45	0Y	15	10.8Y	15	13Y	15	13Y	15	146Y	15
hd	66137	2022	12	10	1	0	2022	12	10	0	0	0Y	15	10.1Y	15	16.6Y	15	26Y	15	190Y	15
hd	66137	2022	12	10	1	15	2022	12	10	0	15	0Y	15	10.8Y	15	14.8Y	15	21Y	15	206Y	15
hd	66137	2022	12	10	1	30	2022	12	10	0	30	0Y	15	10.4Y	15	13Y	15	16Y	15	190Y	15
hd	66137	2022	12	10	1	45	2022	12	10	0	45	0Y	15	9.2Y	15	13Y	15	13Y	15	193Y	15
hd	66137	2022	12	10	2	0	2022	12	10	1	0	0Y	15	11.4Y	15	16.6Y	15	14Y	15	195Y	15
hd	66137	2022	12	10	2	15	2022	12	10	1	15	0Y	15	13.8Y	15	18.4Y	15	11Y	15	180Y	15
hd	66137	2022	12	10	2	30	2022	12	10	1	30	0Y	15	11.5Y	15	16.6Y	15	20Y	15	192Y	15
hd	66137	2022	12	10	2	45	2022	12	10	1	45	0Y	15	9.2Y	15	13Y	15	11Y	15	213Y	15
hd	66137	2022	12	10	3	0	2022	12	10	2	0	0Y	15	9.2Y	15	13Y	15	9Y	15	210Y	15
hd	66137	2022	12	10	3	15	2022	12	10	2	15	0Y	15	9.5Y	15	13Y	15	12Y	15	215Y	15
hd	66137	2022	12	10	3	30	2022	12	10	2	30	0Y	15	8.2Y	15	11.2Y	15	10Y	15	226Y	15
hd	66137	2022	12	10	3	45	2022	12	10	2	45	0Y	15	7.9Y	15	11.2Y	15	10Y	15	224Y	15
hd	66137	2022	12	10	4	0	2022	12	10	3	0	0Y	15	4.5Y	15	9.4Y	15	9Y	15	224Y	15
hd	66137	2022	12	10	4	15	2022	12	10	3	15	0Y	15	5.4Y	14	9.4Y	14	9Y	14	222Y	14
hd	66137	2022	12	10	4	30	2022	12	10	3	30	0Y	15	0.7Y	15	7.6Y	15	7Y	15	234Y	15
hd	66137	2022	12	10	4	45	2022	12	10	3	45	0Y	15	7Y	15	9.4Y	15	5Y	15	238Y	15
hd	66137	2022	12	10	5	0	2022	12	10	4	0	0Y	15	6.8Y	15	9.4Y	15	9Y	15	241Y	15
hd	66137	2022	12	10	5	15	2022	12	10	4	15	0Y	15	7Y	15	9.4Y	15	10Y	15	250Y	15
hd	66137	2022	12	10	5	30	2022	12	10	4	30	0Y	15	7.8Y	15	9.4Y	15	9Y	15	257Y	15
hd	66137	2022	12	10	5	45	2022	12	10	4	45	0Y	15	7.9Y	15	11.2Y	15	11Y	15	266Y	15
hd	66137	2022	12	10	6	0	2022	12	10	5	0	0Y	15	9.1Y	15	11.2Y	15	10Y	15	256Y	15
hd	66137	2022	12	10	6	15	2022	12	10	5	15	0Y	15	9Y	15	13Y	15	14Y	15	245Y	15
hd	66137	2022	12	10	6	30	2022	12	10	5	30	0Y	15	9.6Y	15	13Y	15	17Y	15	236Y	15
hd	66137	2022	12	10	6	45	2022	12	10	5	45	0Y	15	8Y	15	11.2Y	15	16Y	15	239Y	15
hd	66137	2022	12	10	7	0	2022	12	10	6	0	0Y	15	8.2Y	15	13Y	15	14Y	15	234Y	15
hd	66137	2022	12	10	7	15	2022	12	10	6	15	0Y	15	7.2Y	15	9.4Y	15	17Y	15	242Y	15
hd	66137	2022	12	10	7	30	2022	12	10	6	30	0Y	15	7.2Y	15	9.4Y	15	16Y	15	233Y	15
hd	66137	2022	12	10	7	45	2022	12	10	6	45	0Y	15	8.6Y	15	11.2Y	15	14Y	15	227Y	15
hd	66137	2022	12	10	8	0	2022	12	10	7	0	0Y	15	9Y	15	13Y	15	15Y	15	214Y	15
hd	66137	2022	12	10	8	15	2022	12	10	7	15	0Y	15	6.3Y	14	11.2Y	14	27Y	14	236Y	14
hd	66137	2022	12	10	8	30	2022	12	10	7	30	0Y	15	9.2Y	15	13Y	15	17Y	15	229Y	15
hd	66137	2022	12	10	8	45	2022	12	10	7	45	0Y	15	9.4Y	15	14.8Y	15	23Y	15	230Y	15
hd	66137	2022	12	10	9	0	2022	12	10	8	0	0Y	15	11.9Y	15	18.4Y	15	21Y	15	222Y	15
hd	66137	2022	12	10	9	15	2022	12	10	8	15	0Y	15	9.8Y	15	18.4Y	15	56Y	15	152Y	15
hd	66137	2022	12	10	9	30	2022	12	10	8	30	0Y	15	11.1Y	15	16.6Y	15	36Y	15	127Y	15
hd	66137	2022	12	10	9	45	2022	12	10	8	45	0Y	15	10.4Y	15	14.8Y	15	38Y	15	194Y	15

hd	66137	2022	12	10	10	0	2022	12	10	9	0	0Y	15	10Y	15	20.5Y	15	38Y	15	166Y	15
hd	66137	2022	12	10	10	15	2022	12	10	9	15	0Y	15	9.2Y	15	13Y	15	36Y	15	212Y	15
hd	66137	2022	12	10	10	30	2022	12	10	9	30	0Y	15	9.8Y	15	14.8Y	15	71Y	15	149Y	15
hd	66137	2022	12	10	10	45	2022	12	10	9	45	0Y	15	5.9Y	15	14.8Y	15	41Y	15	139Y	15
hd	66137	2022	12	10	11	0	2022	12	10	10	0	0Y	15	7.3Y	15	14.8Y	15	54Y	15	69Y	15
hd	66137	2022	12	10	11	15	2022	12	10	10	15	0Y	15	10.9Y	15	16.6Y	15	36Y	15	139Y	15
hd	66137	2022	12	10	11	30	2022	12	10	10	30	0Y	15	7.2Y	15	16.6Y	15	52Y	15	117Y	15
hd	66137	2022	12	10	11	45	2022	12	10	10	45	0Y	15	12Y	15	16.6Y	15	26Y	15	120Y	15
hd	66137	2022	12	10	12	0	2022	12	10	11	0	0Y	15	11.1Y	15	20.5Y	15	33Y	15	129Y	15
hd	66137	2022	12	10	12	15	2022	12	10	11	15	0Y	15	13.8Y	15	18.4Y	15	31Y	15	115Y	15
hd	66137	2022	12	10	12	45	2022	12	10	11	45	0Y	15	16.7Y	15	27.7Y	15	31Y	15	112Y	15
hd	66137	2022	12	10	13	0	2022	12	10	12	0	0Y	15	11.7Y	15	18.4Y	15	19Y	15	118Y	15
hd	66137	2022	12	10	13	15	2022	12	10	12	15	0Y	15	14.1Y	14	22.3Y	14	23Y	14	133Y	14
hd	66137	2022	12	10	13	30	2022	12	10	12	30	0Y	15	15.2Y	15	22.3Y	15	10Y	15	100Y	15
hd	66137	2022	12	10	13	45	2022	12	10	12	45	0Y	15	13Y	15	25.9Y	15	35Y	15	133Y	15
hd	66137	2022	12	10	14	0	2022	12	10	13	0	0Y	15	10.7Y	15	18.4Y	15	37Y	15	123Y	15
hd	66137	2022	12	10	14	15	2022	12	10	13	15	0Y	15	14Y	15	22.3Y	15	28Y	15	88Y	15
hd	66137	2022	12	10	14	30	2022	12	10	13	30	0Y	15	14.8Y	15	25.9Y	15	20Y	15	88Y	15
hd	66137	2022	12	10	14	45	2022	12	10	13	45	0Y	15	15.6Y	15	25.9Y	15	20Y	15	98Y	15
hd	66137	2022	12	10	15	0	2022	12	10	14	0	0Y	15	13.7Y	15	27.7Y	15	18Y	15	118Y	15
hd	66137	2022	12	10	15	15	2022	12	10	14	15	0Y	15	15.3Y	15	27.7Y	15	19Y	15	84Y	15
hd	66137	2022	12	10	15	30	2022	12	10	14	30	0Y	15	19.5Y	15	29.5Y	15	18Y	15	95Y	15
hd	66137	2022	12	10	15	45	2022	12	10	14	45	0Y	15	20.9Y	15	31.3Y	15	14Y	15	99Y	15
hd	66137	2022	12	10	16	0	2022	12	10	15	0	0Y	15	21.6Y	15	31.3Y	15	19Y	15	92Y	15
hd	66137	2022	12	10	16	15	2022	12	10	15	15	0Y	15	21.6Y	15	33.5Y	15	12Y	15	102Y	15
hd	66137	2022	12	10	16	30	2022	12	10	15	30	0Y	15	22Y	15	31.3Y	15	26Y	15	86Y	15
hd	66137	2022	12	10	16	45	2022	12	10	15	45	0Y	15	21.3Y	15	31.3Y	15	16Y	15	87Y	15
hd	66137	2022	12	10	17	0	2022	12	10	16	0	0Y	15	22.1Y	15	33.5Y	15	14Y	15	90Y	15
hd	66137	2022	12	10	17	15	2022	12	10	16	15	0Y	15	19Y	14	31.3Y	14	23Y	14	57Y	14
hd	66137	2022	12	10	17	30	2022	12	10	16	30	0Y	15	20.1Y	15	31.3Y	15	16Y	15	57Y	15
hd	66137	2022	12	10	17	45	2022	12	10	16	45	0Y	15	19.1Y	15	29.5Y	15	17Y	15	64Y	15
hd	66137	2022	12	10	18	0	2022	12	10	17	0	0Y	15	19.2Y	15	29.5Y	15	15Y	15	68Y	15
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hd	66137	2022	12	10	18	30	2022	12	10	17	30	0Y	15	19.7Y	15	29.5Y	15	16Y	15	78Y	15
hd	66137	2022	12	10	18	45	2022	12	10	17	45	0Y	15	19.9Y	15	29.5Y	15	15Y	15	79Y	15
hd	66137	2022	12	10	19	0	2022	12	10	18	0	0Y	15	18Y	15	27.7Y	15	18Y	15	82Y	15
hd	66137	2022	12	10	19	15	2022	12	10	18	15	0Y	15	17.1Y	15	25.9Y	15	16Y	15	78Y	15
hd	66137	2022	12	10	19	30	2022	12	10	18	30	0Y	15	19.1Y	15	29.5Y	15	13Y	15	73Y	15
hd	66137	2022	12	10	19	45	2022	12	10	18	45	0Y	15	17.1Y	15	25.9Y	15	12Y	15	69Y	15
hd	66137	2022	12	10	20	0	2022	12	10	19	0	0Y	15	18Y	15	25.9Y	15	14Y	15	66Y	15
hd	66137	2022	12	10	20	15	2022	12	10	19	15	0Y	15	16.8Y	15	25.9Y	15	13Y	15	56Y	15
hd	66137	2022	12	10	20	30	2022	12	10	19	30	0Y	15	14.7Y	15	24.1Y	15	13Y	15	55Y	15
hd	66137	2022	12	10	20	45	2022	12	10	19	45	0Y	15	13.9Y	15	22.3Y	15	12Y	15	58Y	15
hd	66137	2022	12	10	21	0	2022	12	10	20	0	0Y	15	14.9Y	15	24.1Y	15	13Y	15	58Y	15
hd	66137	2022	12	10	21	15	2022	12	10	20	15	0Y	15	12.6Y	14	18.4Y	14	13Y	14	56Y	14
hd	66137	2022	12	10	21	30	2022	12	10	20	30	0Y	15	10.7Y	15	14.8Y	15	12Y	15	51Y	15
hd	66137	2022	12	10	21	45	2022	12	10	20	45	0Y	15	10.4Y	15	14.8Y	15	12Y	15	54Y	15
hd	66137	2022	12	10	22	0	2022	12	10	21	0	0Y	15	7.7Y	15	11.2Y	15	9Y	15	52Y	15
hd	66137	2022	12	10	22	15	2022	12	10	21	15	0Y	15	5.1Y	15	9.4Y	15	7Y	15	50Y	15
hd	66137	2022	12	10	22	30	2022	12	10	21	30	0Y	15	0Y	15	0Y	15	2Y	15	0Y	15
hd	66137	2022	12	10	22	45	2022	12	10	21	45	0Y	15	0Y	15	0Y	15	2Y	15	0Y	15
hd	66137	2022	12	10	23	0	2022	12	10	22	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	10	23	15	2022	12	10	22	15	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	10	23	30	2022	12	10	22	30	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	10	23	45	2022	12	10	22	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
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hd	66137	2022	12	10	23	15	2022	12	10	23	15	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	10	23	30	2022	12	10	23	30	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	10	23	45	2022	12	10	23	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	10	23	0	2022	12	10	23	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	10	23	15	2022	12	10	23	15	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	10	23	30	2022	12	10	23	30	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	10	23	45	2022	12	10	23	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	10	23	0	2022	12	10	23	0	0Y	15	0Y	1						

hd	66137	2022	12	11	0	45	2022	12	10	23	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	1	0	2022	12	11	0	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	1	15	2022	12	11	0	15	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	1	30	2022	12	11	0	30	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	1	45	2022	12	11	0	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	2	0	2022	12	11	1	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	2	15	2022	12	11	1	15	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	2	30	2022	12	11	1	30	0Y	15	0Y	15	0Y	14	0Y	14	0Y	14
hd	66137	2022	12	11	2	45	2022	12	11	1	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	3	0	2022	12	11	2	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	3	15	2022	12	11	2	15	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	3	30	2022	12	11	2	30	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	3	45	2022	12	11	2	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	4	0	2022	12	11	3	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	4	15	2022	12	11	3	15	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	4	30	2022	12	11	3	30	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	4	45	2022	12	11	3	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	5	0	2022	12	11	4	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	5	15	2022	12	11	4	15	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	5	30	2022	12	11	4	30	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	5	45	2022	12	11	4	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	6	0	2022	12	11	5	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	6	15	2022	12	11	5	15	0Y	15	0.1Y	15	5.4Y	15	1Y	15	50Y	15
hd	66137	2022	12	11	6	30	2022	12	11	5	30	0Y	15	0Y	14	0Y	14	1Y	14	0Y	14
hd	66137	2022	12	11	6	45	2022	12	11	5	45	0Y	15	0Y	15	5.4Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	7	0	2022	12	11	6	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	7	15	2022	12	11	6	15	0Y	15	0Y	15	2.7Y	15	13Y	15	45Y	15
hd	66137	2022	12	11	7	30	2022	12	11	6	30	0Y	15	2.7Y	15	13Y	15	45Y	15	133Y	15
hd	66137	2022	12	11	7	45	2022	12	11	6	45	0Y	15	0.6Y	15	7.6Y	15	7Y	15	149Y	15
hd	66137	2022	12	11	8	0	2022	12	11	7	0	0Y	15	2.4Y	15	11.2Y	15	84Y	15	164Y	15
hd	66137	2022	12	11	8	15	2022	12	11	7	15	0Y	15	8.6Y	15	11.2Y	15	19Y	15	292Y	15
hd	66137	2022	12	11	8	30	2022	12	11	7	30	0Y	15	9Y	15	13Y	15	22Y	15	287Y	15
hd	66137	2022	12	11	8	45	2022	12	11	7	45	0Y	15	7.2Y	15	11.2Y	15	43Y	15	296Y	15
hd	66137	2022	12	11	9	0	2022	12	11	8	0	0Y	15	8.4Y	15	18.4Y	15	47Y	15	344Y	15
hd	66137	2022	12	11	9	15	2022	12	11	8	15	0Y	15	10.3Y	15	14.8Y	15	20Y	15	21Y	15
hd	66137	2022	12	11	9	30	2022	12	11	8	30	0Y	15	9.1Y	15	14.8Y	15	36Y	15	352Y	15
hd	66137	2022	12	11	9	45	2022	12	11	8	45	0Y	15	7Y	15	16.6Y	15	70Y	15	349Y	15
hd	66137	2022	12	11	10	0	2022	12	11	9	0	0Y	15	9.2Y	15	14.8Y	15	59Y	15	309Y	15
hd	66137	2022	12	11	10	15	2022	12	11	9	15	0Y	15	7.6Y	15	13Y	15	58Y	15	297Y	15
hd	66137	2022	12	11	10	30	2022	12	11	9	30	0Y	15	6.9Y	14	13Y	14	84Y	14	9Y	14
hd	66137	2022	12	11	10	45	2022	12	11	9	45	0Y	15	7.1Y	15	11.2Y	15	54Y	15	332Y	15
hd	66137	2022	12	11	11	0	2022	12	11	10	0	0Y	15	11.6Y	15	18.4Y	15	54Y	15	7Y	15
hd	66137	2022	12	11	11	15	2022	12	11	10	15	0Y	15	12.2Y	15	24.1Y	15	28Y	15	355Y	15
hd	66137	2022	12	11	11	30	2022	12	11	10	30	0Y	15	10.6Y	15	24.1Y	15	28Y	15	360Y	15
hd	66137	2022	12	11	11	45	2022	12	11	10	45	0Y	15	11.6Y	15	25.9Y	15	35Y	15	8Y	15
hd	66137	2022	12	11	12	0	2022	12	11	11	0	0Y	15	15.3Y	15	27.7Y	15	20Y	15	18Y	15
hd	66137	2022	12	11	12	15	2022	12	11	11	15	0Y	15	15.3Y	15	27.7Y	15	22Y	15	15Y	15
hd	66137	2022	12	11	12	30	2022	12	11	11	30	0Y	15	15.3Y	15	29.5Y	15	28Y	15	29Y	15
hd	66137	2022	12	11	12	45	2022	12	11	11	45	0Y	15	14.3Y	15	31.3Y	15	28Y	15	18Y	15
hd	66137	2022	12	11	13	0	2022	12	11	12	0	0Y	15	9Y	15	18.4Y	15	31Y	15	358Y	15
hd	66137	2022	12	11	13	15	2022	12	11	12	15	0Y	15	11.3Y	15	20.5Y	15	37Y	15	328Y	15
hd	66137	2022	12	11	13	30	2022	12	11	12	30	0Y	15	14.6Y	15	25.9Y	15	38Y	15	34Y	15
hd	66137	2022	12	11	13	45	2022	12	11	12	45	0Y	15	12.2Y	15	22.3Y	15	47Y	15	342Y	15
hd	66137	2022	12	11	14	0	2022	12	11	13	0	0Y	15	12.5Y	15	33.5Y	15	45Y	15	347Y	15
hd	66137	2022	12	11	14	15	2022	12	11	13	15	0Y	15	12Y	15	27.7Y	15	34Y	15	41Y	15
hd	66137	2022	12	11	14	30	2022	12	11	13	30	0Y	15	10.6Y	15	22.3Y	15	72Y	15	117Y	15
hd	66137	2022	12	11	14	45	2022	12	11	13	45	0Y	15	15.7Y	15	29.5Y	15	40Y	15	35Y	15
hd	66137	2022	12	11	15	0	2022	12	11	14	0	0Y	15	21.5Y	15	31.3Y	15	19Y	15	72Y	15
hd	66137	2022	12	11	15	15	2022	12	11	14	15	0Y	15	22.2Y	15	29.5Y	15	18Y	15	67Y	15

hd	66137	2022	12	11	15	30	2022	12	11	14	30	0Y	15	24.1Y	14	33.5Y	14	13Y	14	67Y	14
hd	66137	2022	12	11	15	45	2022	12	11	14	45	0Y	15	24.6Y	15	35.3Y	15	14Y	15	66Y	15
hd	66137	2022	12	11	16	0	2022	12	11	15	0	0Y	15	24.2Y	15	33.5Y	15	21Y	15	69Y	15
hd	66137	2022	12	11	16	15	2022	12	11	15	15	0Y	15	23.6Y	15	35.3Y	15	14Y	15	71Y	15
hd	66137	2022	12	11	16	30	2022	12	11	15	30	0Y	15	23.3Y	15	33.5Y	15	16Y	15	82Y	15
hd	66137	2022	12	11	16	45	2022	12	11	15	45	0Y	15	22.7Y	15	33.5Y	15	15Y	15	72Y	15
hd	66137	2022	12	11	17	0	2022	12	11	16	0	0Y	15	24.8Y	15	35.3Y	15	19Y	15	73Y	15
hd	66137	2022	12	11	17	15	2022	12	11	16	15	0Y	15	27.8Y	15	38.9Y	15	14Y	15	65Y	15
hd	66137	2022	12	11	17	30	2022	12	11	16	30	0Y	15	26.5Y	15	38.9Y	15	14Y	15	63Y	15
hd	66137	2022	12	11	17	45	2022	12	11	16	45	0Y	15	26Y	15	37.1Y	15	16Y	15	68Y	15
hd	66137	2022	12	11	18	0	2022	12	11	17	0	0Y	15	24.8Y	15	35.3Y	15	14Y	15	71Y	15
hd	66137	2022	12	11	18	15	2022	12	11	17	15	0Y	15	26.4Y	15	37.1Y	15	15Y	15	73Y	15
hd	66137	2022	12	11	18	30	2022	12	11	17	30	0Y	15	24.7Y	15	37.1Y	15	18Y	15	53Y	15
hd	66137	2022	12	11	18	45	2022	12	11	17	45	0Y	15	22.5Y	15	37.1Y	15	15Y	15	46Y	15
hd	66137	2022	12	11	19	0	2022	12	11	18	0	0Y	15	18.8Y	15	33.5Y	15	19Y	15	53Y	15
hd	66137	2022	12	11	19	15	2022	12	11	18	15	0Y	15	14.2Y	15	25.9Y	15	16Y	15	58Y	15
hd	66137	2022	12	11	19	30	2022	12	11	18	30	0Y	15	14.6Y	14	24.1Y	14	16Y	14	59Y	14
hd	66137	2022	12	11	19	45	2022	12	11	18	45	0Y	15	17.8Y	15	29.5Y	15	17Y	15	56Y	15
hd	66137	2022	12	11	20	0	2022	12	11	19	0	0Y	15	12.2Y	15	18.4Y	15	15Y	15	59Y	15
hd	66137	2022	12	11	20	15	2022	12	11	19	15	0Y	15	11.5Y	15	16.6Y	15	13Y	15	73Y	15
hd	66137	2022	12	11	20	30	2022	12	11	19	30	0Y	15	12.4Y	15	18.4Y	15	15Y	15	60Y	15
hd	66137	2022	12	11	20	45	2022	12	11	19	45	0Y	15	10.7Y	15	18.4Y	15	14Y	15	65Y	15
hd	66137	2022	12	11	21	0	2022	12	11	20	0	0Y	15	11.5Y	15	18.4Y	15	15Y	15	68Y	15
hd	66137	2022	12	11	21	15	2022	12	11	20	15	0Y	15	7.5Y	15	11.2Y	15	14Y	15	63Y	15
hd	66137	2022	12	11	21	30	2022	12	11	20	30	0Y	15	8.5Y	15	11.2Y	15	16Y	15	77Y	15
hd	66137	2022	12	11	21	45	2022	12	11	20	45	0Y	15	7.9Y	15	9.4Y	15	9Y	15	66Y	15
hd	66137	2022	12	11	22	0	2022	12	11	21	0	0Y	15	7.1Y	15	11.2Y	15	7Y	15	60Y	15
hd	66137	2022	12	11	22	15	2022	12	11	21	15	0Y	15	4.6Y	15	11.2Y	15	17Y	15	69Y	15
hd	66137	2022	12	11	22	30	2022	12	11	21	30	0Y	15	4.3Y	15	9.4Y	15	15Y	15	88Y	15
hd	66137	2022	12	11	22	45	2022	12	11	21	45	0Y	15	0Y	15	3.6Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	23	0	2022	12	11	22	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	23	15	2022	12	11	22	15	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	11	23	30	2022	12	11	22	30	0Y	15	0Y	14	0Y	14	1Y	14	0Y	14
hd	66137	2022	12	11	23	45	2022	12	11	22	45	0Y	15	0Y	15	1.8Y	15	1Y	15	0Y	15
hd	66137	2022	12	12	0	0	2022	12	11	23	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	12	0	15	2022	12	11	23	15	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	12	0	30	2022	12	11	23	30	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	12	0	45	2022	12	11	23	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	12	1	0	2022	12	12	0	0	0Y	15	0Y	15	0Y	15	42Y	15	0Y	15
hd	66137	2022	12	12	1	15	2022	12	12	0	15	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	12	1	30	2022	12	12	1	30	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	12	1	45	2022	12	12	1	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	12	1	60	2022	12	12	1	60	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	12	2	0	2022	12	12	1	0	0Y	15	1.2Y	15	9.4Y	15	53Y	15	342Y	15
hd	66137	2022	12	12	2	15	2022	12	12	1	15	0Y	15	1.6Y	15	7.6Y	15	1Y	15	229Y	15
hd	66137	2022	12	12	2	30	2022	12	12	1	30	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	12	2	45	2022	12	12	1	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	12	3	0	2022	12	12	2	0	0Y	15	0Y	15	0Y	15	0Y	15	5Y	15
hd	66137	2022	12	12	3	15	2022	12	12	2	15	0Y	15	0Y	15	0Y	15	0Y	15	36Y	15
hd	66137	2022	12	12	3	30	2022	12	12	2	30	0Y	15	0Y	14	0Y	14	4Y	14	0Y	14
hd	66137	2022	12	12	3	45	2022	12	12	2	45	0Y	15	0Y	13	0Y	13	8Y	13	0Y	13
hd	66137	2022	12	12	4	0	2022	12	12	3	0	0Y	15	0Y	15	0Y	15	3Y	15	0Y	15
hd	66137	2022	12	12	4	15	2022	12	12	3	15	0Y	15	0Y	13	0Y	13	15Y	13	0Y	13
hd	66137	2022	12	12	4	30	2022	12	12	3	30	0Y	15	0Y	14	0Y	14	1Y	14	0Y	14
hd	66137	2022	12	12	4	45	2022	12	12	3	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	12	5	0	2022	12	12	4	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	12	5	15	2022	12	12	4	15	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	12	5	30	2022	12	12	4	30	0Y	15	2.9Y	15	9.4Y	15	83Y	15	268Y	15
hd	66137	2022	12	12	5	45	2022	12	12	4	45	0Y	15	4.7Y	15	11.2Y	15	10Y	15	250Y	15
hd	66137	2022	12	12	6	0	2022	12	12	5	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15

hd	66137	2022	12	12	6	15	2022	12	12	5	15	0Y	15	0Y	15	0Y	15	85Y	15	0Y	15
hd	66137	2022	12	12	6	30	2022	12	12	5	30	0Y	15	1.9Y	15	14.8Y	15	27Y	15	40Y	15
hd	66137	2022	12	12	6	45	2022	12	12	5	45	0Y	15	10.9Y	15	22.3Y	15	16Y	15	2Y	15
hd	66137	2022	12	12	7	0	2022	12	12	6	0	0Y	15	16Y	15	29.5Y	15	18Y	15	1Y	15
hd	66137	2022	12	12	7	15	2022	12	12	6	15	0Y	15	15.1Y	15	27.7Y	15	22Y	15	358Y	15
hd	66137	2022	12	12	7	30	2022	12	12	6	30	0Y	15	15.9Y	15	31.3Y	15	17Y	15	357Y	15
hd	66137	2022	12	12	7	45	2022	12	12	6	45	0Y	15	16.8Y	15	33.5Y	15	17Y	15	356Y	15
hd	66137	2022	12	12	8	0	2022	12	12	7	0	0Y	15	15.5Y	15	31.3Y	15	19Y	15	354Y	15
hd	66137	2022	12	12	8	15	2022	12	12	7	15	0Y	15	13.6Y	15	25.9Y	15	16Y	15	350Y	15
hd	66137	2022	12	12	8	30	2022	12	12	7	30	0Y	15	14.5Y	14	27.7Y	14	17Y	14	360Y	14
hd	66137	2022	12	12	8	45	2022	12	12	7	45	0Y	15	19.6Y	15	35.3Y	15	19Y	15	359Y	15
hd	66137	2022	12	12	9	0	2022	12	12	8	0	0Y	15	24.6Y	15	40.7Y	15	24Y	15	351Y	15
hd	66137	2022	12	12	9	15	2022	12	12	8	15	0Y	15	24.8Y	15	46.4Y	15	24Y	15	352Y	15
hd	66137	2022	12	12	9	30	2022	12	12	8	30	0Y	15	26.1Y	15	48.2Y	15	21Y	15	350Y	15
hd	66137	2022	12	12	9	45	2022	12	12	8	45	0Y	15	25.7Y	15	44.3Y	15	18Y	15	356Y	15
hd	66137	2022	12	12	10	0	2022	12	12	9	0	0Y	15	26.8Y	15	48.2Y	15	19Y	15	355Y	15
hd	66137	2022	12	12	10	15	2022	12	12	9	15	0Y	15	23.6Y	15	42.5Y	15	42Y	15	331Y	15
hd	66137	2022	12	12	10	30	2022	12	12	9	30	0Y	15	25.2Y	15	40.7Y	15	22Y	15	242Y	15
hd	66137	2022	12	12	10	45	2022	12	12	9	45	3.4Y	15	13.8Y	15	29.5Y	15	71Y	15	289Y	15
hd	66137	2022	12	12	11	0	2022	12	12	10	0	0.2Y	15	11.2Y	15	16.6Y	15	17Y	15	18Y	15
hd	66137	2022	12	12	11	15	2022	12	12	10	15	0Y	15	10.3Y	15	16.6Y	15	14Y	15	353Y	15
hd	66137	2022	12	12	11	30	2022	12	12	10	30	0Y	15	9.4Y	15	14.8Y	15	20Y	15	338Y	15
hd	66137	2022	12	12	11	45	2022	12	12	10	45	0Y	15	8.3Y	15	13Y	15	33Y	15	337Y	15
hd	66137	2022	12	12	12	0	2022	12	12	11	0	0.2Y	15	9.9Y	15	14.8Y	15	30Y	15	356Y	15
hd	66137	2022	12	12	12	15	2022	12	12	11	15	0.6Y	15	9.3Y	15	20.5Y	15	23Y	15	3Y	15
hd	66137	2022	12	12	12	30	2022	12	12	11	30	0Y	15	9.9Y	14	14.8Y	14	20Y	14	332Y	14
hd	66137	2022	12	12	12	45	2022	12	12	11	45	0Y	15	11Y	15	14.8Y	15	20Y	15	19Y	15
hd	66137	2022	12	12	13	0	2022	12	12	12	0	0Y	15	10Y	15	14.8Y	15	20Y	15	351Y	15
hd	66137	2022	12	12	13	15	2022	12	12	12	15	0Y	15	10.6Y	15	16.6Y	15	33Y	15	350Y	15
hd	66137	2022	12	12	13	30	2022	12	12	12	30	0Y	15	16.1Y	15	33.5Y	15	31Y	15	340Y	15
hd	66137	2022	12	12	13	45	2022	12	12	12	45	0Y	15	19.5Y	15	37.1Y	15	30Y	15	319Y	15
hd	66137	2022	12	12	14	0	2022	12	12	13	0	0Y	15	18.8Y	15	35.3Y	15	25Y	15	297Y	15
hd	66137	2022	12	12	14	15	2022	12	12	13	15	0Y	15	23.3Y	15	40.7Y	15	26Y	15	308Y	15
hd	66137	2022	12	12	14	30	2022	12	12	13	30	0Y	15	23.8Y	15	44.3Y	15	25Y	15	309Y	15
hd	66137	2022	12	12	14	45	2022	12	12	13	45	0Y	15	21.1Y	15	35.3Y	15	25Y	15	296Y	15
hd	66137	2022	12	12	15	0	2022	12	12	14	0	0Y	15	24.7Y	15	48.2Y	15	20Y	15	302Y	15
hd	66137	2022	12	12	15	15	2022	12	12	14	15	0Y	15	25.6Y	15	46.4Y	15	25Y	15	306Y	15
hd	66137	2022	12	12	15	30	2022	12	12	14	30	0Y	15	29Y	15	50Y	15	24Y	15	311Y	15
hd	66137	2022	12	12	15	45	2022	12	12	14	45	0Y	15	26.9Y	15	44.3Y	15	23Y	15	299Y	15
hd	66137	2022	12	12	16	0	2022	12	12	15	0	0Y	15	23.6Y	15	40.7Y	15	32Y	15	285Y	15
hd	66137	2022	12	12	16	15	2022	12	12	15	15	0Y	15	26.2Y	15	40.7Y	15	28Y	15	258Y	15
hd	66137	2022	12	12	16	30	2022	12	12	15	30	0Y	15	28.4Y	14	50Y	14	22Y	14	276Y	14
hd	66137	2022	12	12	16	45	2022	12	12	15	45	0Y	15	27Y	15	53.6Y	15	25Y	15	283Y	15
hd	66137	2022	12	12	17	0	2022	12	12	16	0	0Y	15	23.4Y	15	38.9Y	15	26Y	15	257Y	15
hd	66137	2022	12	12	17	15	2022	12	12	16	15	0Y	15	24.6Y	15	53.6Y	15	27Y	15	271Y	15
hd	66137	2022	12	12	17	30	2022	12	12	16	30	0Y	15	29.8Y	15	46.4Y	15	28Y	15	270Y	15
hd	66137	2022	12	12	17	45	2022	12	12	16	45	0Y	15	23.1Y	15	46.4Y	15	23Y	15	278Y	15
hd	66137	2022	12	12	18	0	2022	12	12	17	0	0Y	15	29.7Y	15	48.2Y	15	25Y	15	265Y	15
hd	66137	2022	12	12	18	15	2022	12	12	17	15	0Y	15	26.4Y	15	42.5Y	15	23Y	15	278Y	15
hd	66137	2022	12	12	18	30	2022	12	12	17	30	0Y	15	28Y	15	50Y	15	25Y	15	268Y	15
hd	66137	2022	12	12	18	45	2022	12	12	17	45	0Y	15	30.8Y	15	50Y	15	23Y	15	270Y	15
hd	66137	2022	12	12	19	0	2022	12	12	18	0	0Y	15	24.8Y	15	38.9Y	15	24Y	15	270Y	15
hd	66137	2022	12	12	19	15	2022	12	12	18	15	0Y	15	28.1Y	15	48.2Y	15	24Y	15	261Y	15
hd	66137	2022	12	12	19	30	2022	12	12	18	30	0Y	15	21.9Y	15	40.7Y	15	27Y	15	263Y	15
hd	66137	2022	12	12	19	45	2022	12	12	18	45	0Y	15	24.8Y	15	42.5Y	15	24Y	15	260Y	15
hd	66137	2022	12	12	20	0	2022	12	12	19	0	0Y	15	21.6Y	15	35.3Y	15	24Y	15	262Y	15
hd	66137	2022	12	12	20	15	2022	12	12	19	15	0Y	15	17Y	15	29.5Y	15	23Y	15	273Y	15
hd	66137	2022	12	12	20	30	2022	12	12	19	30	0Y	15	17.3Y	15	31.3Y	15	20Y	15	286Y	15
hd	66137	2022	12	12	20	45	2022	12	12	19	45	0Y	15	13.6Y	15	22.3Y	15	19Y	15	279Y	15

hd	66137	2022	12	12	21	0	2022	12	12	20	0	0Y	15	15.1Y	15	29.5Y	15	18Y	15	277Y	15
hd	66137	2022	12	12	21	15	2022	12	12	20	15	0Y	15	14.5Y	15	25.9Y	15	21Y	15	274Y	15
hd	66137	2022	12	12	21	30	2022	12	12	20	30	0Y	15	20.8Y	14	53.6Y	14	23Y	14	263Y	14
hd	66137	2022	12	12	21	45	2022	12	12	20	45	0Y	15	19.8Y	15	42.5Y	15	24Y	15	265Y	15
hd	66137	2022	12	12	22	0	2022	12	12	21	0	0Y	15	13.9Y	15	24.1Y	15	22Y	15	273Y	15
hd	66137	2022	12	12	22	15	2022	12	12	21	15	0Y	15	13.7Y	15	25.9Y	15	18Y	15	298Y	15
hd	66137	2022	12	12	22	30	2022	12	12	21	30	0Y	15	13.1Y	15	25.9Y	15	19Y	15	298Y	15
hd	66137	2022	12	12	22	45	2022	12	12	21	45	0Y	15	15.4Y	15	35.3Y	15	20Y	15	292Y	15
hd	66137	2022	12	12	23	0	2022	12	12	22	0	0Y	15	13.6Y	15	29.5Y	15	17Y	15	292Y	15
hd	66137	2022	12	12	23	15	2022	12	12	22	15	0Y	15	11Y	15	18.4Y	15	15Y	15	299Y	15
hd	66137	2022	12	12	23	30	2022	12	12	22	30	0Y	15	11.3Y	15	18.4Y	15	18Y	15	300Y	15
hd	66137	2022	12	12	23	45	2022	12	12	22	45	0Y	15	8.7Y	15	13Y	15	20Y	15	311Y	15
hd	66137	2022	12	13	0	0	2022	12	12	23	0	0Y	15	9.4Y	15	18.4Y	15	26Y	15	327Y	15
hd	66137	2022	12	13	0	15	2022	12	12	23	15	0Y	15	8Y	15	13Y	15	20Y	15	333Y	15
hd	66137	2022	12	13	0	30	2022	12	12	23	30	0Y	15	8.6Y	15	14.8Y	15	24Y	15	319Y	15
hd	66137	2022	12	13	0	45	2022	12	12	23	45	0Y	15	9.7Y	15	20.5Y	15	23Y	15	304Y	15
hd	66137	2022	12	13	1	0	2022	12	13	0	0	0Y	15	10.9Y	15	22.3Y	15	26Y	15	289Y	15
hd	66137	2022	12	13	1	15	2022	12	13	0	15	0Y	15	7.2Y	15	16.6Y	15	19Y	15	257Y	15
hd	66137	2022	12	13	1	30	2022	12	13	0	30	0Y	15	0Y	14	0Y	14	42Y	14	0Y	14
hd	66137	2022	12	13	1	45	2022	12	13	0	45	0Y	15	0Y	15	0Y	15	19Y	15	0Y	15
hd	66137	2022	12	13	2	0	2022	12	13	1	0	0Y	15	4.1Y	15	7.6Y	15	23Y	15	32Y	15
hd	66137	2022	12	13	2	15	2022	12	13	1	15	0Y	15	2.1Y	15	7.6Y	15	0Y	15	357Y	15
hd	66137	2022	12	13	2	30	2022	12	13	1	30	0Y	15	6.1Y	15	9.4Y	15	25Y	15	325Y	15
hd	66137	2022	12	13	2	45	2022	12	13	1	45	0Y	15	8.4Y	15	11.2Y	15	10Y	15	274Y	15
hd	66137	2022	12	13	3	0	2022	12	13	2	0	0Y	15	8.7Y	15	14.8Y	15	13Y	15	260Y	15
hd	66137	2022	12	13	3	15	2022	12	13	2	15	0Y	15	6.6Y	15	9.4Y	15	45Y	15	331Y	15
hd	66137	2022	12	13	3	30	2022	12	13	2	30	0Y	15	8.2Y	15	11.2Y	15	8Y	15	9Y	15
hd	66137	2022	12	13	3	45	2022	12	13	2	45	0Y	15	7Y	15	11.2Y	15	11Y	15	1Y	15
hd	66137	2022	12	13	4	0	2022	12	13	3	0	0Y	15	6.4Y	15	11.2Y	15	24Y	15	285Y	15
hd	66137	2022	12	13	4	15	2022	12	13	3	15	0Y	15	7.5Y	15	11.2Y	15	34Y	15	330Y	15
hd	66137	2022	12	13	4	30	2022	12	13	3	30	0Y	15	7.4Y	15	9.4Y	15	11Y	15	319Y	15
hd	66137	2022	12	13	4	45	2022	12	13	3	45	0Y	15	9.1Y	15	16.6Y	15	13Y	15	302Y	15
hd	66137	2022	12	13	5	0	2022	12	13	4	0	0Y	15	9.5Y	15	14.8Y	15	33Y	15	320Y	15
hd	66137	2022	12	13	5	15	2022	12	13	4	15	0Y	15	9.7Y	15	14.8Y	15	15Y	15	295Y	15
hd	66137	2022	12	13	5	30	2022	12	13	4	30	0Y	15	8.6Y	14	14.8Y	14	42Y	14	343Y	14
hd	66137	2022	12	13	5	45	2022	12	13	4	45	0Y	15	6Y	15	11.2Y	15	38Y	15	344Y	15
hd	66137	2022	12	13	6	0	2022	12	13	5	0	0Y	15	5.8Y	15	13Y	15	60Y	15	329Y	15
hd	66137	2022	12	13	6	15	2022	12	13	5	15	0Y	15	7.4Y	15	13Y	15	32Y	15	351Y	15
hd	66137	2022	12	13	6	30	2022	12	13	5	30	0Y	15	7.2Y	15	9.4Y	15	5Y	15	358Y	15
hd	66137	2022	12	13	6	45	2022	12	13	5	45	0Y	15	4Y	15	9.4Y	15	20Y	15	326Y	15
hd	66137	2022	12	13	7	0	2022	12	13	6	0	0Y	15	4.2Y	15	11.2Y	15	22Y	15	349Y	15
hd	66137	2022	12	13	7	15	2022	12	13	6	15	0Y	15	8.1Y	15	13Y	15	17Y	15	340Y	15
hd	66137	2022	12	13	7	30	2022	12	13	6	30	0Y	15	7.3Y	15	13Y	15	19Y	15	315Y	15
hd	66137	2022	12	13	7	45	2022	12	13	6	45	0Y	15	9.6Y	15	14.8Y	15	27Y	15	322Y	15
hd	66137	2022	12	13	8	0	2022	12	13	7	0	0Y	15	9Y	15	14.8Y	15	29Y	15	310Y	15
hd	66137	2022	12	13	8	15	2022	12	13	7	15	0Y	15	9.8Y	15	14.8Y	15	30Y	15	286Y	15
hd	66137	2022	12	13	8	30	2022	12	13	7	30	0Y	15	14.8Y	15	25.9Y	15	22Y	15	277Y	15
hd	66137	2022	12	13	8	45	2022	12	13	7	45	0Y	15	12.8Y	15	20.5Y	15	29Y	15	267Y	15
hd	66137	2022	12	13	9	0	2022	12	13	8	0	0Y	15	13.4Y	15	24.1Y	15	32Y	15	266Y	15
hd	66137	2022	12	13	9	15	2022	12	13	8	15	0Y	15	11.4Y	15	18.4Y	15	31Y	15	290Y	15
hd	66137	2022	12	13	9	30	2022	12	13	8	30	0Y	15	14.9Y	15	27.7Y	15	32Y	15	279Y	15
hd	66137	2022	12	13	9	45	2022	12	13	8	45	0Y	15	13Y	15	22.3Y	15	32Y	15	283Y	15
hd	66137	2022	12	13	10	0	2022	12	13	9	0	0Y	15	16Y	15	27.7Y	15	27Y	15	293Y	15
hd	66137	2022	12	13	10	15	2022	12	13	9	15	0Y	15	14.3Y	15	31.3Y	15	32Y	15	288Y	15
hd	66137	2022	12	13	10	30	2022	12	13	9	30	0Y	15	14.1Y	14	29.5Y	14	25Y	14	298Y	14
hd	66137	2022	12	13	10	45	2022	12	13	9	45	0Y	15	15.6Y	15	29.5Y	15	24Y	15	307Y	15
hd	66137	2022	12	13	11	0	2022	12	13	10	0	0Y	15	13.1Y	15	24.1Y	15	33Y	15	295Y	15
hd	66137	2022	12	13	11	15	2022	12	13	10	15	0Y	15	13.6Y	15	31.3Y	15	33Y	15	313Y	15
hd	66137	2022	12	13	11	30	2022	12	13	10	30	0Y	15	13.6Y	15	29.5Y	15	34Y	15	297Y	15

hd	66137	2022	12	13	11	45	2022	12	13	10	45	0Y	15	13.5Y	15	27.7Y	15	36Y	15	279Y	15
hd	66137	2022	12	13	12	0	2022	12	13	11	0	0Y	15	14.3Y	15	27.7Y	15	26Y	15	285Y	15
hd	66137	2022	12	13	12	15	2022	12	13	11	15	0Y	15	9.5Y	15	22.3Y	15	48Y	15	305Y	15
hd	66137	2022	12	13	12	30	2022	12	13	11	30	0Y	15	12.1Y	15	20.5Y	15	36Y	15	351Y	15
hd	66137	2022	12	13	12	45	2022	12	13	11	45	0Y	15	10.2Y	15	24.1Y	15	53Y	15	342Y	15
hd	66137	2022	12	13	13	0	2022	12	13	12	0	0Y	15	14.9Y	15	25.9Y	15	38Y	15	293Y	15
hd	66137	2022	12	13	13	15	2022	12	13	12	15	0Y	15	14.9Y	15	29.5Y	15	25Y	15	272Y	15
hd	66137	2022	12	13	13	30	2022	12	13	12	30	0Y	15	12.6Y	15	20.5Y	15	38Y	15	307Y	15
hd	66137	2022	12	13	13	45	2022	12	13	12	45	0Y	15	11.8Y	15	25.9Y	15	39Y	15	323Y	15
hd	66137	2022	12	13	14	0	2022	12	13	13	0	0Y	15	13.1Y	15	25.9Y	15	56Y	15	263Y	15
hd	66137	2022	12	13	14	15	2022	12	13	13	15	0Y	15	13.8Y	15	25.9Y	15	27Y	15	277Y	15
hd	66137	2022	12	13	14	30	2022	12	13	13	30	0Y	15	12.2Y	14	25.9Y	14	49Y	14	270Y	14
hd	66137	2022	12	13	14	45	2022	12	13	13	45	0Y	15	13Y	15	22.3Y	15	45Y	15	307Y	15
hd	66137	2022	12	13	15	0	2022	12	13	14	0	0Y	15	13.3Y	15	25.9Y	15	42Y	15	262Y	15
hd	66137	2022	12	13	15	15	2022	12	13	14	15	0Y	15	14.8Y	15	27.7Y	15	28Y	15	298Y	15
hd	66137	2022	12	13	15	30	2022	12	13	14	30	0Y	15	9.9Y	15	24.1Y	15	62Y	15	296Y	15
hd	66137	2022	12	13	15	45	2022	12	13	14	45	0Y	15	13.2Y	15	31.3Y	15	37Y	15	284Y	15
hd	66137	2022	12	13	16	0	2022	12	13	15	0	0Y	15	11.5Y	15	29.5Y	15	38Y	15	278Y	15
hd	66137	2022	12	13	16	15	2022	12	13	15	15	0Y	15	15.8Y	15	27.7Y	15	23Y	15	262Y	15
hd	66137	2022	12	13	16	30	2022	12	13	15	30	0Y	15	13.9Y	15	24.1Y	15	26Y	15	251Y	15
hd	66137	2022	12	13	16	45	2022	12	13	15	45	0Y	15	11.7Y	15	22.3Y	15	36Y	15	272Y	15
hd	66137	2022	12	13	17	0	2022	12	13	16	0	0Y	15	13.5Y	15	24.1Y	15	28Y	15	303Y	15
hd	66137	2022	12	13	17	15	2022	12	13	16	15	0Y	15	16.2Y	15	31.3Y	15	38Y	15	77Y	15
hd	66137	2022	12	13	17	30	2022	12	13	16	30	0Y	15	25.2Y	15	35.3Y	15	12Y	15	115Y	15
hd	66137	2022	12	13	17	45	2022	12	13	16	45	0Y	15	21.5Y	15	31.3Y	15	11Y	15	112Y	15
hd	66137	2022	12	13	18	0	2022	12	13	17	0	0Y	15	19.2Y	15	29.5Y	15	14Y	15	92Y	15
hd	66137	2022	12	13	18	15	2022	12	13	17	15	0Y	15	22.2Y	15	29.5Y	15	12Y	15	110Y	15
hd	66137	2022	12	13	18	30	2022	12	13	17	30	0Y	15	20.1Y	15	29.5Y	15	15Y	15	93Y	15
hd	66137	2022	12	13	18	45	2022	12	13	17	45	0Y	15	21.4Y	14	27.7Y	14	14Y	14	77Y	14
hd	66137	2022	12	13	19	0	2022	12	13	18	0	0Y	15	20.5Y	15	29.5Y	15	14Y	15	85Y	15
hd	66137	2022	12	13	19	15	2022	12	13	18	15	0Y	15	18.5Y	15	27.7Y	15	14Y	15	85Y	15
hd	66137	2022	12	13	19	30	2022	12	13	18	30	0Y	15	17Y	15	27.7Y	15	16Y	15	68Y	15
hd	66137	2022	12	13	19	45	2022	12	13	18	45	0Y	15	15.2Y	15	22.3Y	15	20Y	15	65Y	15
hd	66137	2022	12	13	20	0	2022	12	13	19	0	0Y	15	14.4Y	15	20.5Y	15	16Y	15	69Y	15
hd	66137	2022	12	13	20	15	2022	12	13	19	15	0Y	15	12.4Y	15	20.5Y	15	15Y	15	68Y	15
hd	66137	2022	12	13	20	30	2022	12	13	19	30	0Y	15	13.3Y	15	22.3Y	15	14Y	15	63Y	15
hd	66137	2022	12	13	20	45	2022	12	13	19	45	0Y	15	13.4Y	15	18.4Y	15	13Y	15	64Y	15
hd	66137	2022	12	13	21	0	2022	12	13	20	0	0Y	15	11.9Y	15	18.4Y	15	13Y	15	67Y	15
hd	66137	2022	12	13	21	15	2022	12	13	20	15	0Y	15	7.1Y	15	14.8Y	15	10Y	15	58Y	15
hd	66137	2022	12	13	21	30	2022	12	13	20	30	0Y	15	4.1Y	15	9.4Y	15	33Y	15	95Y	15
hd	66137	2022	12	13	21	45	2022	12	13	20	45	0Y	15	1.7Y	15	9.4Y	15	23Y	15	82Y	15
hd	66137	2022	12	13	22	0	2022	12	13	21	0	0Y	15	6.1Y	15	11.2Y	15	28Y	15	110Y	15
hd	66137	2022	12	13	22	15	2022	12	13	21	15	0Y	15	1.8Y	15	7.6Y	15	65Y	15	152Y	15
hd	66137	2022	12	13	22	30	2022	12	13	21	30	0Y	15	0Y	15	0Y	15	41Y	15	0Y	15
hd	66137	2022	12	13	22	45	2022	12	13	21	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	13	23	0	2022	12	13	22	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	13	23	15	2022	12	13	22	15	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	13	23	30	2022	12	13	22	30	0Y	15	0Y	15	0Y	15	20Y	15	0Y	15
hd	66137	2022	12	13	23	45	2022	12	13	22	45	0Y	15	0Y	14	0Y	14	1Y	14	0Y	14
hd	66137	2022	12	14	0	0	2022	12	13	23	0	0Y	15	0Y	15	0Y	15	22Y	15	0Y	15
hd	66137	2022	12	14	0	15	2022	12	13	23	15	0Y	15	5.6Y	15	7.6Y	15	6Y	15	260Y	15
hd	66137	2022	12	14	0	30	2022	12	13	23	30	0Y	15	0Y	15	1.8Y	15	43Y	15	0Y	15
hd	66137	2022	12	14	0	45	2022	12	13	23	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	14	1	0	2022	12	14	0	0	0Y	15	0Y	15	0Y	15	21Y	15	0Y	15
hd	66137	2022	12	14	1	15	2022	12	14	0	15	0Y	15	5.4Y	15	9.4Y	15	11Y	15	226Y	15
hd	66137	2022	12	14	1	30	2022	12	14	0	30	0Y	15	3.1Y	15	7.6Y	15	1Y	15	222Y	15
hd	66137	2022	12	14	1	45	2022	12	14	0	45	0Y	15	5.6Y	15	7.6Y	15	19Y	15	255Y	15
hd	66137	2022	12	14	2	0	2022	12	14	1	0	0Y	15	5.9Y	15	9.4Y	15	19Y	15	248Y	15
hd	66137	2022	12	14	2	15	2022	12	14	1	15	0Y	15	6.2Y	15	9.4Y	15	11Y	15	225Y	15

hd	66137	2022	12	14	2	30	2022	12	14	1	30	0Y	15	6.4Y	15	9.4Y	15	9Y	15	240Y	15
hd	66137	2022	12	14	2	45	2022	12	14	1	45	0Y	15	1Y	15	7.6Y	15	1Y	15	239Y	15
hd	66137	2022	12	14	3	0	2022	12	14	2	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	14	3	15	2022	12	14	2	15	0Y	15	0Y	15	0Y	15	0Y	15	0Y	15
hd	66137	2022	12	14	3	30	2022	12	14	2	30	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	14	3	45	2022	12	14	2	45	0Y	15	0Y	14	0Y	14	73Y	14	0Y	14
hd	66137	2022	12	14	4	0	2022	12	14	3	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	14	4	15	2022	12	14	3	15	0Y	15	0Y	15	0Y	15	43Y	15	0Y	15
hd	66137	2022	12	14	4	30	2022	12	14	3	30	0Y	15	0Y	15	0Y	15	5Y	15	0Y	15
hd	66137	2022	12	14	4	45	2022	12	14	3	45	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	14	5	0	2022	12	14	4	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	14	5	15	2022	12	14	4	15	0Y	15	0Y	15	0Y	15	25Y	15	0Y	15
hd	66137	2022	12	14	5	30	2022	12	14	4	30	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	14	5	45	2022	12	14	4	45	0Y	15	0Y	15	0Y	15	76Y	15	0Y	15
hd	66137	2022	12	14	6	0	2022	12	14	5	0	0Y	15	0.1Y	15	7.6Y	15	2Y	15	223Y	15
hd	66137	2022	12	14	6	15	2022	12	14	5	15	0Y	15	5.3Y	15	13Y	15	11Y	15	225Y	15
hd	66137	2022	12	14	6	30	2022	12	14	5	30	0Y	15	2.3Y	15	9.4Y	15	19Y	15	215Y	15
hd	66137	2022	12	14	6	45	2022	12	14	5	45	0Y	15	0.4Y	15	5.4Y	15	13Y	15	246Y	15
hd	66137	2022	12	14	7	0	2022	12	14	6	0	0Y	15	0Y	15	0Y	15	1Y	15	0Y	15
hd	66137	2022	12	14	7	15	2022	12	14	6	15	0Y	15	2.1Y	15	11.2Y	15	15Y	15	256Y	15
hd	66137	2022	12	14	7	30	2022	12	14	6	30	0Y	15	8.8Y	15	13Y	15	21Y	15	275Y	15
hd	66137	2022	12	14	7	45	2022	12	14	6	45	0Y	15	13.3Y	14	25.9Y	14	24Y	14	259Y	14
hd	66137	2022	12	14	8	0	2022	12	14	7	0	0Y	15	16.5Y	15	29.5Y	15	24Y	15	244Y	15
hd	66137	2022	12	14	8	15	2022	12	14	7	15	0Y	15	17.2Y	15	25.9Y	15	19Y	15	243Y	15
hd	66137	2022	12	14	8	30	2022	12	14	7	30	0Y	15	20.4Y	15	33.5Y	15	22Y	15	248Y	15
hd	66137	2022	12	14	8	45	2022	12	14	7	45	0Y	15	19.8Y	15	33.5Y	15	25Y	15	250Y	15
hd	66137	2022	12	14	9	0	2022	12	14	8	0	0Y	15	24.8Y	15	51.8Y	15	24Y	15	250Y	15
hd	66137	2022	12	14	9	15	2022	12	14	8	15	0Y	15	24.1Y	15	42.5Y	15	24Y	15	248Y	15
hd	66137	2022	12	14	9	30	2022	12	14	8	30	0Y	15	19.4Y	15	33.5Y	15	23Y	15	244Y	15
hd	66137	2022	12	14	9	45	2022	12	14	8	45	0Y	15	18.6Y	15	29.5Y	15	21Y	15	250Y	15
hd	66137	2022	12	14	10	0	2022	12	14	9	0	0Y	15	18Y	15	29.5Y	15	20Y	15	246Y	15
hd	66137	2022	12	14	10	15	2022	12	14	9	15	0Y	15	16.8Y	15	25.9Y	15	18Y	15	237Y	15
hd	66137	2022	12	14	10	30	2022	12	14	9	30	0Y	15	21.2Y	15	33.5Y	15	20Y	15	243Y	15
hd	66137	2022	12	14	10	45	2022	12	14	9	45	0Y	15	20.2Y	15	33.5Y	15	26Y	15	247Y	15
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hd	66137	2022	12	14	14	0	2022	12	14	13	0	0Y	15	22.5Y	15	38.9Y	15	28Y	15	274Y	15
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hd	66137	2022	12	14	14	30	2022	12	14	13	30	0Y	15	25.1Y	15	44.3Y	15	30Y	15	266Y	15
hd	66137	2022	12	14	14	45	2022	12	14	13	45	0Y	15	23.7Y	15	37.1Y	15	27Y	15	264Y	15
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hd	66137	2022	12	14	17	0	2022	12	14	16	0	0Y	15	22.8Y	15	38.9Y	15	30Y	15	246Y	15

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hd	66137	2022	12	15	6	30	2022	12	15	5	30	0Y	15	10.1Y		15	13Y		15	14Y		15	232Y		15
hd	66137	2022	12	15	6	45	2022	12	15	5	45	0Y	15	8.4Y		15	13Y		15	36Y		15	247Y		15
hd	66137	2022	12	15	7	0	2022	12	15	6	0	0Y	15	8.1Y		15	14.8Y		15	36Y		15	285Y		15
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hd	66137	2022	12	15	7	45	2022</td																		

hd	66137	2022	12	15	8	0	2022	12	15	7	0	0Y	15	16.1Y		15	25.9Y		15	25Y		15	258Y		15
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hd	66137	2022	12	15	16	45	2022	12	15	15	45	0Y	15	29Y		15	37.1Y		15	12Y		15	140Y		15
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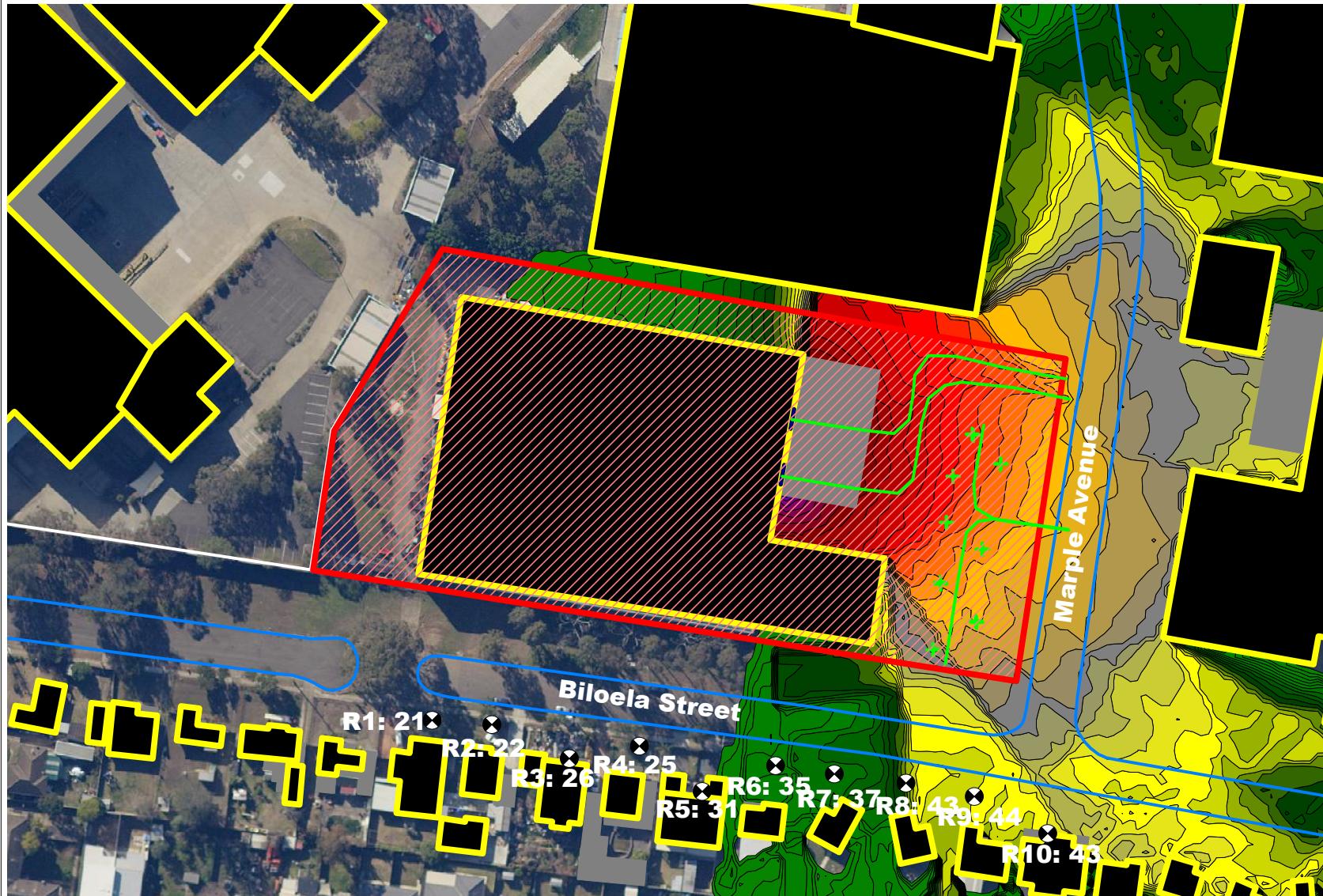
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hd	66137	2022	12	16	22	45	2022	12	16	21	45	0Y	15	14Y	15	25.9Y	15	14Y	15	190Y	15
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hd	66137	2022	12	17	0	45	2022	12	16	23	45	0Y	15	10.2Y	15	13Y	15	16Y	15	235Y	15

# **APPENDIX C**

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# **APPENDIX C**



**koikas acoustics** PTY LTD  
CONSULTANTS IN NOISE & VIBRATION

JOB NUMBER: 5728  
CLIENT: MRA Consulting Group  
SITE ADDRESS: 90 Marple Avenue, Villawood  
ASSESSED TO: EPA's Noise Policy for Industry  
LIMITING CRITERIA: See Report

