



**YARRANLEA SOLAR FARM – NOISE & VIBRATION IMPACT  
ASSESSMENT – JANUARY 2017**

**I3 CONSULTING PTY LTD**

Project ID. 10734

**R\_1**

**DATE OF RELEASE: 15/02/2017**

Table 1: Document approval

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Author	Craig Beyers	Consulting Services Manager		15.02.2017
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Table 2: Revision register

Revision	Date	Name	Issued to	Comment
R_0	13.02.2017	C. Beyers	N. Canto	Formal report release
R_1	15.02.2017	C. Beyers	N. Canto	Final report

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# 1 INTRODUCTION

## 1.1 Scope of Assessment

Assured Monitoring Group (AMG) was appointed by I3 Consulting Pty Ltd to undertake baseline noise, dust and PM<sub>10</sub> monitoring prior to commencement of construction of the Yarranlea Solar Farm project. Specifically, the monitoring was undertaken at a total of four locations over the period 22 December 2016 to 23 January 2017.

## 1.2 This Report

This report summarises the methodology and results of the baseline monitoring. A glossary of terms is presented in Appendix A to assist the reader.

## 2 MONITORING LOCATIONS

For the purposes of the baseline monitoring a total of four locations were selected to provide data representative of the environment at the range of sensitive receptors in proximity to the proposed solar farm. Figure 1 below presents the selected monitoring locations.



Figure 1: Monitoring positions

Table 3 summarises the type of baseline monitoring undertaken at each location.

Table 3: Monitoring Undertaken at Each Location

Monitoring Location	Coordinates			Noise	Deposited Dust	PM <sub>10</sub>
	Zone	Easting	Northing			
MP1	56	354928	6933268	Yes	Yes	Yes
MP2	56	353805	6933104	Yes	Yes	No
MP3	56	357328	6934644	Yes	Yes	No
MP3	56	356686	6936735	Yes	Yes	No

### 3 MONITORING METHODOLOGY

#### 3.1 Noise Monitoring

Unattended noise monitoring was undertaken at the locations identified in Section 2 to determine existing baseline levels in the area. Noise measurements were undertaken in accordance with the requirements of Australian Standard *AS 1055-1997 'Acoustics – Description and measurement of environmental noise'* and the Department of Environment and Heritage Protection (EHP) *Noise Measurement Manual 2013*.

All instruments were situated in free-field positions with an averaging time of 15 minutes adopted for the monitoring period. The microphone of each instrument was positioned at a height of 1.2 metres above ground level and fitted with a windshield throughout the measurement period. Each of the instruments were field calibrated before and after the monitoring with no significant calibration drift observed.

The serial numbers and calibration information for the instruments used for the monitoring are presented in Table 4.

**Table 4: Noise Monitoring Instrument and Calibration Information**

Position	Instrument/ Serial No.	Monitoring Dates	NATA Calibration Current to:	Pre-/Post Calibration (dB)
MPI	Rion NL-22 / 01273553	22/12/16 – 06/01/17	Na	94.0 / 94.4
MP2	Rion NL-21 / 00487697	22/12/16 – 10/01/17	Na	94.0 / 94.5
MP3	Rion NL-21 / 00877035	22/12/16 – 25/12/16	Na	94.0 / 94.0
MP4	Rion NL-22 / 01273552	22/12/16 – 07/01/17	Na	94.0 / 94.4
-	Bruel & Kjaer 4231 / 2671553	-	22/09/17	-
-	Pulsar 106 / 78332	-	21/12/18	-

Subjective observations made during the site inspections indicated that noise at the monitoring site was defined activity typical of the area with no significant noise sources observed in the areas.

Noise monitoring has a potential to be affected by rainfall and wind speeds above 5 m/s (as described in the Queensland Noise Measurement Manual 2013). A review of meteorological data collected at monitoring location MPI and the Bureau of Meteorology Oakey Aerodrome station indicates that a total of 14 hours was potentially affected by rainfall and high wind speeds. To avoid weather-related bias noise data during these periods have not been considered in the analysis.

### 3.2 Deposited Dust Monitoring

In order to provide information regarding the dust emissions from existing activities in the area (including agricultural activities and emissions from unsealed roadways), deposited dust monitoring was undertaken at four locations for a period of one month (22 December 2016 to 23 January 2017).

The monitoring for deposited dust was undertaken in accordance with Australian Standard *AS 3580.10.1:2016 Methods for sampling and analysis of ambient air – Determination of particulate matter – Deposited matter – Gravimetric method*. Where possible, sampling devices were located in accordance with Australian Standard *AS 3580.1.1:2016 Methods for sampling and analysis of ambient air – Guide to siting air monitoring equipment*.

Samples collected were analysed for total insoluble matter in accordance with AS 3580.10.1.

### 3.3 PM<sub>10</sub> Monitoring

Continuous PM<sub>10</sub> monitoring was undertaken at a single location (MPI) for the period 22 December 2016 to 23 January 2017 using a Metone E-BAM (beta attenuation monitor) in accordance with Australian Standard *AS 3580.9.11:2016 Methods for sampling and analysis of ambient air - Determination of suspended particulate matter - PM10 beta attenuation monitors*. It is noted that the E-BAM is a light-weight portable beta attenuation monitoring which complies with the majority of the requirements of AS 3580.9.11.

Prior to commencement and at completion of the monitoring, the instrument was calibrated in accordance with the standard and the manufacturer's instructions to ensure its correct operation.

At the completion of the monitoring, the collected data was validated in accordance with AMG methodologies. This included invalidation of data with significant negative values with minor negative data amended to 0 µg/m<sup>3</sup>.

## 4 BASELINE MONITORING RESULTS

### 4.1 Noise

#### 4.1.1 Introduction

During the monitoring, no construction or significant other activities were being undertaken on the subject site. As such, the presented baseline noise levels are considered representative of typical levels in the area during warmer months.

The following sections present a summary of average noise levels of each period for a variety of noise parameters. The periods are defined as follows:

- Day – 7 am to 6 pm;
- Evening – 6 pm to 10 pm;
- Night – 10 pm to 7 am.

#### 4.1.2 Monitoring Results

Table 5 presents a summary of average noise levels measured at each of the monitoring positions. Daily average summary tables for each monitoring location are presented in Appendix B.

**Table 5: Average Measured Noise Levels**

Monitoring Location	Period	L <sub>max</sub>	L <sub>1</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	ABL
MP1	Day	64.3	53.6	47.9	39.1	46.7	37.7
	Evening	65.2	55.3	52.0	44.9	50.4	44.1
	Night	56.5	48.6	45.6	41.8	46.1	40.4
MP2	Day	57.4	50.6	45.5	36.2	49.7	32.5
	Evening	58.7	50.0	47.6	42.2	48.7	39.3
	Night	53.1	46.7	43.6	36.9	44.9	31.0
MP3	Day	49.9	44.6	38.6	28.6	40.3	26.2
	Evening	46.6	44.1	41.7	37.7	41.2	34.4
	Night	41.7	39.5	35.7	28.0	38.4	24.0
MP4	Day	65.5	52.9	45.3	30.9	47.2	28.6
	Evening	58.7	50.5	47.2	40.5	46.3	37.5
	Night	58.2	50.1	45.8	37.9	46.1	31.5

a) ABL = Assessment Background Level as described in the Queensland Planning for Noise Control Guideline 2016



## 4.2 Deposited Dust

Table 6 below present a summary of measured monthly average deposited dust levels at each of the four monitoring locations. Dust deposition levels were not observed to exceed the generally accepted criteria for acceptable levels of deposited dust. It is noted that rural environments typically experience highly variable dust levels dependent on regional and local activities.

**Table 6: Deposited Dust Monitoring Results**

PARAMETER		MP1	MP2	MP3	MP4
AMG ID		10734-1-1	10734-1-2	10734-1-3	10734-1-4
Date Start		22/02/16	22/02/16	22/02/16	22/02/16
Date Finish		23/01/17	23/01/17	23/01/17	23/01/17
Analysis Method		AS/NZS 3580.10.1	AS/NZS 3580.10.1	AS/NZS 3580.10.1	AS/NZS 3580.10.1
Deposited Matter (Total)	mg/m <sup>2</sup> /day	54	19	64	64
Deposited Matter (Insoluble)	mg/m <sup>2</sup> /day	21	12	29	29
Deposited Matter (Soluble)	mg/m <sup>2</sup> /day	34	7	34	35
Deposited Matter (Ash)	mg/m <sup>2</sup> /day	11	2	17	15
Deposited Matter (Combustible)	mg/m <sup>2</sup> /day	10	10	12	14

## 4.3 PM<sub>10</sub>

Table 7 and Figure 2 below present a summary of 24-hour average PM<sub>10</sub> concentrations measured at location MP1. Table 7 also presents a comparison of measured concentrations at position MP1 with long-term historical concentrations measured at the nearby monitoring station operated by EHP at Flinders View (Ipswich). Review of the measured concentrations confirms that the levels were generally consistent with the long-term data from the Flinders View station.

**Table 7: 24-hour Average PM<sub>10</sub> Concentrations (µg/m<sup>3</sup>)**

Parameter	MP1	Flinders View				
		2011	2012	2013	2014	2015
Average	11.7	- a)	- a)	- a)	- a)	- a)
50 <sup>th</sup> Percentile	12.1	- a)	- a)	- a)	- a)	- a)
70 <sup>th</sup> Percentile	14.3	- a)	- a)	- a)	- a)	- a)
90 <sup>th</sup> Percentile	16.9	20.2	23.2	22.3	24.3	21.8
Maximum	21.5	67.0	73.8	42.2	38.8	44.5

a) Data not reported

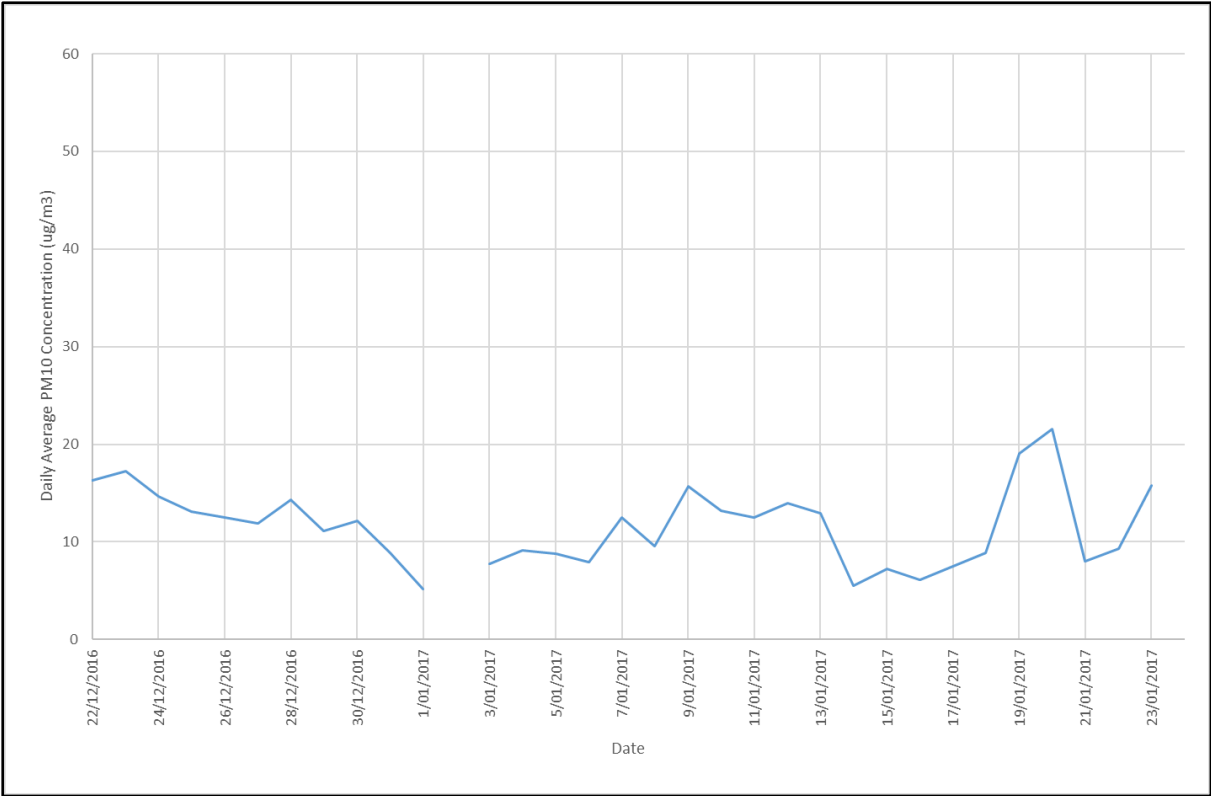


Figure 2: Daily 24-hour average PM<sub>10</sub> concentrations

## APPENDIX A: GLOSSARY OF TERMS

A-Weighting	A response provided by an electronic circuit which modifies sound in such a way that the resulting level is similar to that perceived by the human ear.
dB (decibel)	This is the scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and the reference pressure (0.00002 N/m <sup>2</sup> ).
dB(A) or dBA	This is a measure of the overall noise level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
Free-field	Refers to a sound pressure level determined at a point away from reflective surfaces other than the ground with no significant contribution due to sound from other reflective surfaces; generally, as measured outside and away from buildings.
L <sub>Aeq</sub>	This is the equivalent steady sound level in dB(A) containing the same acoustic energy as the actual fluctuating sound level over the given period. Noise levels often fluctuate over a wide range with time. Therefore, when a noise varies over time, the L <sub>Aeq</sub> is the equivalent continuous sound which would contain the same sound energy as the time varying sound. Many studies show that human reaction to level-varying sounds tends to relate closer to the L <sub>Aeq</sub> noise level than any other descriptor.
g/s	Grams per second
mg/m <sup>3</sup>	Milligrams (10 <sup>-3</sup> ) per cubic metre. Conversions from mg/m <sup>3</sup> to parts per volume concentrations (i.e., ppm) are calculated at 0 degrees Celsius.
µg/m <sup>3</sup>	Micrograms (10 <sup>-6</sup> ) per cubic metre. Conversions from µg/m <sup>3</sup> to parts per volume concentrations (i.e., ppb) are calculated at 0°C.
ppb	Parts per billion.
ppm	Parts per million.
PM <sub>10</sub> , PM <sub>2.5</sub> , PM <sub>1</sub>	Fine particulate matter with an equivalent aerodynamic diameter of less than 10, 2.5 or 1 micrometres respectively. Fine particulates are predominantly sourced from combustion processes. Vehicle emissions are a key source in urban environments.
50th percentile	The value exceeded for 50 % of the time.

## APPENDIX B: DAILY AVERAGE NOISE DATA

**Table 8: Monitoring Location MPI - Baseline Noise Monitoring Data (dB(A))**

Date	Period	L <sub>max</sub>	L <sub>1</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	minL <sub>A90,1-hour</sub>	Median L <sub>eq,1-hour</sub>
22/12/16	Day	-	-	-	-	-	-	-
	Evening	62.5	57.0	52.8	44.9	50.3	43.9	50.8
	Night	52.0	48.1	45.9	41.9	45.3	40.8	44.6
23/12/16	Day	63.5	55.7	50.1	40.1	48.9	37.9	49.0
	Evening	60.7	54.8	51.2	44.4	49.0	43.7	49.4
	Night	52.5	47.2	44.1	41.5	43.8	40.4	43.0
24/12/16	Day	60.0	52.5	46.1	38.5	46.5	37.7	43.5
	Evening	-	-	-	-	-	-	-
	Night	53.4	47.1	44.1	41.2	43.4	40.5	43.2
25/12/16	Day	62.0	56.3	50.0	39.2	49.2	37.9	48.2
	Evening	60.2	56.1	53.1	44.5	50.6	44.0	49.7
	Night	55.5	49.8	46.4	41.8	45.2	41.2	44.7
26/12/16	Day	64.3	58.0	52.5	40.7	49.6	38.3	49.4
	Evening	64.7	59.1	54.1	45.3	51.4	44.8	50.2
	Night	53.7	47.8	44.5	41.1	44.1	40.3	42.5
27/12/16	Day	63.1	57.4	51.8	39.5	51.2	38.1	49.1
	Evening	63.7	58.2	53.8	45.4	51.0	44.4	51.3
	Night	56.5	50.0	46.5	42.2	46.6	40.7	45.8
28/12/16	Day	62.3	55.2	49.2	38.9	47.6	37.5	45.5
	Evening	65.2	59.9	55.4	46.3	52.9	45.1	52.6
	Night	54.7	48.9	46.0	41.2	45.6	40.1	43.1
29/12/16	Day	54.6	47.8	42.8	37.5	41.7	37.1	40.7
	Evening	54.8	51.2	48.6	43.4	49.7	39.4	48.1
	Night	54.5	48.8	46.2	43.1	49.4	39.2	44.6
30/12/16	Day	55.8	48.3	42.7	37.4	41.1	37.1	41.0
	Evening	56.2	51.0	47.6	42.4	47.4	39.3	47.2
	Night	55.5	50.9	48.2	43.3	49.7	39.6	43.2
31/12/16	Day	55.8	49.4	43.8	37.8	42.3	37.0	40.6
	Evening	54.8	51.7	49.5	42.0	49.9	38.8	49.8
	Night	55.4	50.4	46.9	41.4	47.2	38.8	46.0
01/01/17	Day	-	-	-	-	-	-	-
	Evening	-	-	-	-	-	-	-
	Night	-	-	-	-	-	-	-
02/01/17	Day	-	-	-	-	-	-	-
	Evening	-	-	-	-	-	-	-

Date	Period	L <sub>max</sub>	L <sub>1</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	minL <sub>A90,1-hour</sub>	Median L <sub>Aeq,1-hour</sub>
03/01/17	Night	-	-	-	-	-	-	-
	Day	-	-	-	-	-	-	-
	Evening	57.4	54.6	52.8	47.2	51.0	45.6	51.3
04/01/17	Night	53.6	48.3	45.3	42.1	46.1	41.2	44.3
	Day	62.9	55.6	50.5	41.1	48.4	39.7	47.8
	Evening	56.0	54.0	52.5	46.8	51.1	44.1	50.8
05/01/17	Night	52.0	46.4	43.3	41.0	46.3	40.2	42.7
	Day	62.4	53.3	47.6	39.7	47.3	37.4	45.9
	Evening	60.7	55.9	53.1	46.2	50.6	44.8	50.7

Table 9: Monitoring Location MP2 - Baseline Noise Monitoring Data (dB(A))

Date	Period	L <sub>max</sub>	L <sub>1</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	minL <sub>A90,1-hour</sub>	Median L <sub>Aeq,1-hour</sub>
22/12/16	Day	-	-	-	-	-	-	-
	Evening	55.5	54.6	52.7	47.1	53.5	44.3	51.8
	Night	47.5	45.2	42.2	35.3	45.1	33.5	39.5
23/12/16	Day	50.9	50.6	45.1	36.7	49.7	31.2	49.5
	Evening	51.7	50.2	48.4	43.7	48.0	41.4	47.8
	Night	47.1	47.0	43.4	34.5	47.2	27.2	43.8
24/12/16	Day	51.9	49.6	42.9	32.5	48.3	30.4	47.7
	Evening	54.1	52.8	50.0	43.9	53.1	41.7	48.7
	Night	49.6	46.6	43.2	34.7	43.4	28.1	42.6
25/12/16	Day	50.3	49.4	44.9	36.2	47.7	32.5	45.7
	Evening	55.5	52.2	50.6	46.5	50.2	44.8	48.9
	Night	49.8	47.4	44.6	38.1	44.9	29.7	44.1
26/12/16	Day	55.4	53.3	49.4	41.4	50.4	38.4	50.5
	Evening	54.8	54.0	51.6	45.7	50.2	44.3	50.4
	Night	48.1	47.1	43.6	35.9	44.8	28.6	44.6
27/12/16	Day	53.8	51.2	47.0	38.1	49.3	36.2	47.4
	Evening	58.7	56.1	53.4	47.2	51.6	46.7	51.9
	Night	51.3	48.1	45.2	39.0	46.2	30.1	45.7
28/12/16	Day	53.9	50.4	45.9	37.3	48.7	34.5	45.4
	Evening	55.6	54.2	51.8	45.9	51.6	42.3	49.9
	Night	53.1	50.3	47.4	41.2	48.1	32.9	45.0
29/12/16	Day	51.6	48.9	42.8	32.0	49.2	28.9	49.6
	Evening	51.3	48.8	46.6	42.4	51.1	36.0	49.2
	Night	49.5	47.5	43.8	36.4	45.7	26.1	45.2

Date	Period	L <sub>max</sub>	L <sub>1</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	minL <sub>A90,1-hour</sub>	Median L <sub>Aeq,1-hour</sub>
30/12/16	Day	50.0	47.6	41.4	29.9	47.4	27.3	44.5
	Evening	52.7	48.4	45.2	40.1	48.8	30.7	47.3
	Night	50.6	47.8	45.1	40.0	46.6	29.3	45.3
31/12/16	Day	49.7	47.5	41.1	30.3	44.3	25.3	40.9
	Evening	48.1	44.4	40.8	35.7	45.0	27.5	43.8
	Night	49.4	47.6	44.9	38.5	44.5	31.0	43.8
01/01/17	Day	-	-	-	-	-	-	-
	Evening	-	-	-	-	-	-	-
	Night	-	-	-	-	-	-	-
02/01/17	Day	-	-	-	-	-	-	-
	Evening	-	-	-	-	-	-	-
	Night	-	-	-	-	-	-	-
03/01/17	Day	-	-	-	-	-	-	-
	Evening	51.6	48.0	45.8	41.2	46.4	39.3	43.8
	Night	46.3	44.9	41.8	36.0	43.1	34.6	40.0
04/01/17	Day	54.1	51.2	46.7	39.2	52.4	35.7	50.9
	Evening	49.7	47.8	45.1	38.3	45.7	35.6	43.9
	Night	51.1	49.8	46.9	36.9	45.9	33.3	45.3
05/01/17	Day	54.8	49.1	43.6	34.3	52.6	30.5	50.4
	Evening	48.9	46.6	44.5	39.5	44.2	38.0	43.0
	Night	44.6	44.3	41.7	36.8	42.0	35.4	41.0
06/01/17	Day	54.6	53.1	48.7	40.6	51.5	38.0	51.5
	Evening	45.7	44.2	42.1	37.1	43.8	35.4	42.7
	Night	45.5	43.8	41.9	37.1	41.9	34.4	40.6
07/01/17	Day	57.4	54.7	50.5	42.1	52.3	41.0	50.4
	Evening	46.3	44.8	42.8	38.3	45.6	37.8	43.0
	Night	47.0	45.8	43.0	37.1	44.4	35.2	44.7
08/01/17	Day	55.6	52.5	47.9	39.2	50.2	37.1	49.6
	Evening	53.9	52.4	49.8	43.9	50.2	42.5	50.2
	Night	45.7	44.2	39.5	31.7	43.4	26.5	40.2
09/01/17	Day	54.4	50.4	44.1	33.4	51.3	30.0	50.1
	Evening	50.8	49.8	47.2	41.8	48.7	38.0	48.6
	Night	47.7	46.0	43.2	38.0	46.2	33.9	41.2

**Table 10: Monitoring Location MP2 - Baseline Noise Monitoring Data (dB(A))**

Date	Period	L <sub>max</sub>	L <sub>1</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	minL <sub>A90,1-hour</sub>	Median L <sub>Aeq,1-hour</sub>
22/12/16	Day	-	-	-	-	-	-	-
	Evening	46.6	45.5	43.4	40.0	42.7	38.8	41.7
	Night	41.7	40.3	37.0	31.2	38.8	26.2	37.1
23/12/16	Day	49.9	46.3	40.5	30.9	41.3	27.6	39.0
	Evening	45.3	42.8	40.3	36.2	39.5	34.4	38.7
	Night	41.1	38.8	34.5	24.9	38.0	21.7	35.9
24/12/16	Day	46.6	42.8	36.7	26.4	39.3	24.7	36.4
	Evening	44.6	44.1	41.5	37.0	41.4	33.0	40.4
	Night	44.6	44.1	41.5	37.0	41.4	33.0	40.4

**Table 11: Monitoring Location MPI - Baseline Noise Monitoring Data (dB(A))**

Date	Period	L <sub>max</sub>	L <sub>1</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	minL <sub>A90,1-hour</sub>	Median L <sub>Aeq,1-hour</sub>
22/12/16	Day	-	-	-	-	-	-	-
	Evening	58.7	51.1	46.0	40.8	44.2	39.6	44.6
	Night	57.3	51.6	46.0	37.9	49.0	34.6	43.5
23/12/16	Day	64.4	55.1	46.5	32.4	49.7	28.9	47.7
	Evening	55.6	51.4	47.7	40.8	46.9	35.5	46.6
	Night	54.1	48.5	42.9	32.7	42.3	27.7	39.9
24/12/16	Day	63.3	54.7	45.8	29.4	51.5	27.9	43.0
	Evening	-	-	-	-	-	-	-
	Night	55.6	49.0	43.1	34.8	45.4	29.9	41.7
25/12/16	Day	62.7	53.6	45.8	30.3	46.0	28.3	45.0
	Evening	52.5	48.1	46.0	42.4	44.6	41.1	44.6
	Night	56.4	50.9	46.1	37.9	49.3	31.5	44.8
26/12/16	Day	62.5	54.4	47.9	33.6	47.7	30.2	44.9
	Evening	57.9	51.0	47.3	42.7	47.1	37.5	46.1
	Night	53.9	49.1	45.3	37.0	45.3	32.0	44.2
27/12/16	Day	62.9	55.0	47.1	32.2	53.5	29.2	42.9
	Evening	54.2	49.3	46.2	39.8	44.7	34.9	44.5
	Night	56.0	50.5	45.3	36.8	49.0	32.3	43.2
28/12/16	Day	59.2	51.4	44.2	30.6	44.8	27.7	41.2
	Evening	57.1	50.4	46.6	39.9	45.8	34.2	45.7
	Night	55.2	49.0	45.3	36.7	44.7	28.7	43.8
29/12/16	Day	61.0	49.8	41.7	27.2	40.7	25.7	40.7
	Evening	55.8	49.0	45.4	35.9	44.9	30.4	44.5

Date	Period	L <sub>max</sub>	L <sub>1</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	minL <sub>A90,1-hour</sub>	Median L <sub>aeq,1-hour</sub>
30/12/16	Night	57.2	48.9	44.1	35.4	42.7	28.0	41.6
	Day	59.7	49.1	41.2	26.5	47.6	25.8	39.1
	Evening	58.3	49.3	44.4	35.8	43.4	30.1	43.1
31/12/16	Night	55.8	49.8	46.3	38.3	45.2	28.5	44.6
	Day	59.8	49.7	41.6	27.4	41.9	23.9	41.2
	Evening	56.2	51.0	46.5	35.4	52.1	29.0	48.2
01/01/17	Night	56.6	49.8	45.8	38.1	45.0	28.9	44.8
	Day	-	-	-	-	-	-	-
	Evening	-	-	-	-	-	-	-
02/01/17	Night	-	-	-	-	-	-	-
	Day	-	-	-	-	-	-	-
	Evening	-	-	-	-	-	-	-
03/01/17	Night	-	-	-	-	-	-	-
	Day	-	-	-	-	-	-	-
	Evening	58.1	54.5	52.4	45.0	49.6	44.0	49.2
04/01/17	Night	57.0	52.6	49.6	43.1	48.0	36.2	48.1
	Day	62.4	54.2	48.5	35.4	46.7	32.4	46.0
	Evening	56.4	50.1	48.3	43.4	46.5	41.3	46.4
05/01/17	Night	58.2	51.9	48.1	42.0	46.6	36.7	45.7
	Day	60.7	52.0	44.9	31.9	45.6	30.4	42.3
	Evening	56.7	51.3	48.9	42.5	46.4	41.0	46.3
06/01/17	Night	56.4	50.2	47.3	41.7	46.2	38.0	46.2
	Day	65.5	55.8	48.2	34.5	50.2	30.7	45.9
	Evening	55.6	50.5	47.9	41.8	45.7	40.0	45.4
	Night	55.6	50.5	47.9	41.8	45.7	40.0	45.4