Noise Monitoring Assessment

Austen Quarry, Hartley, NSW
March 2020

Prepared for: RW Corkery & Co Pty Limited
April 2020
MAC170523RP7

Muller Acoustic Consulting

Document Information

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Prepared for: RW Corkery & Co Pty Limited (on behalf of Hy-Tec Pty Ltd)

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Document ID	Status	Date	Prepared By	Signed	Reviewed By	Signed
MAC170523RP7	Final	7 April 2020	Robin Heaton		Oliver Muller	

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1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by RW Corkery & Co Pty Limited (RWC) on behalf of Hy-Tec Industries Pty Ltd (HT) to complete a Noise Monitoring Assessment (NMA) for Austen Quarry Operations, Hartley, NSW.

The monitoring has been conducted in accordance with the approved Austen Quarry Noise Management Plan and in general accordance with Conditions L4.1 to L4.3 of EPL#12323 (EPL); at three representative monitoring locations.

The assessment was conducted in accordance with the following documents:

- NSW Environment Protection Authority (EPA), Noise Policy for Industry (NPI), 2017;
- Environment Protection Licence EPL#12323;
- RW Corkery & Co Pty Limited, Austen Quarry Noise Management Plan (NMP); and
- Australian Standard AS 1055:2018 - Acoustics - Description and measurement of environmental noise.

This assessment was undertaken during March 2020 and forms part of the noise monitoring program to address conditions of EPL#12323, Austen Quarry Development Consent SSD 6084 (SSD-6084) and the Noise Management Plan.

A glossary of terms, definitions and abbreviations used in this report is provided in **Appendix A**.

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2 Noise Criteria

2.1 Attended Noise Compliance

Schedule 3, Condition 3 of the Austen Quarry Development Consent (SSD-6084), approved on 15 July 2015 and modified on 15 August 2018, outlines the applicable noise criteria for all privately owned residential receivers surrounding the quarry site. The operating criteria specified in SSD-6084 also aligns with criteria in EPL#12323 for the quarry at all receivers ie 35dB $LA_{eq(15min)}$.

Furthermore, SSD-6084 specifies an LA_{max} criteria for site operations of 52dBA during the morning shoulder period. **Table 1** presents the criteria for privately owned residential receivers surrounding the quarry, as outlined in SSD-6084 and EPL#12323.

Table 1 Noise Criteria

Receiver	Day dB $LA_{eq(15min)}$	Evening dB $LA_{eq(15min)}$	Morning Shoulder dB $LA_{eq(15min)}$	Morning Shoulder dB LA_{max}
All privately owned residences	35	35	35	52

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3 Methodology

3.1 Locality

The quarry is located on Jenolan Caves Road, Hartley, NSW, approximately 10km south of Lithgow, NSW. Receivers in the locality surrounding the quarry are primarily rural/residential. The Great Western Highway is situated to the north east of the site and Jenolan Caves Road to the west of the site.

3.2 Noise Monitoring Locations

Three monitoring locations have been selected as part of the NMA in accordance with the Noise Management Plan (NMP) and are summarised below:

- Location A (residence identifier R24A as per NMP), is located at 200 Jenolan Caves Road, Hartley, NSW, approximately 2.5km north of the project;
- Location B (residence identifier R31 as per NMP), is located at 781 Jenolan Caves Road, Good Forest, NSW, approximately 1km south west of the project site; and
- Location C (residential identifier R48 as per NMP) is located at 64 Carroll Drive, Hartley, NSW, approximately 2.5km north east of the quarry.

The monitoring locations with respect to quarry are presented in the locality plan shown in **Figure 1**.

3.3 Attended Monitoring Methodology

The attended noise surveys were conducted in general accordance with the procedures described in Australian Standard AS 1055:2018, "Acoustics - Description and Measurement of Environmental Noise" and EPL#12323. The measurements were carried out using a Svantek Type 1, 971 noise analyser on Thursday 12 March 2020 and Friday 13 March 2020 The acoustic instrumentation used carries current NATA calibration and complies with AS IEC 61672.1-2019-Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed ±0.5dBA.

Noise measurements were of 15 minutes in duration and where possible, throughout each survey, the operator quantified the contribution of each significant noise source. One measurement was conducted at each of the monitoring locations during the day, evening and morning shoulder monitoring periods to quantify the noise sources in the ambient noise environment.

3.4 Unattended Monitoring Methodology

The unattended noise survey, undertaken at Location B - 781 Jenolan Caves Road, was conducted in general accordance with the procedures described in Australian Standard AS 1055:2018, "Acoustics - Description and Measurement of Environmental Noise". The measurements were carried out using a Svantek Type 1, 977 noise analyser. Monitoring was conducted from Thursday 12 March 2020 to Wednesday 19 March 2020. The acoustic instrumentation used carries current NATA calibration and complies with AS/NZS IEC 61672:2019-Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed ±0.5dBA.

A 60-second audio sample was recorded at the commencement of each 15-minute monitoring period to identify the dominant noise sources contributing to the ambient noise environment at that time. Data affected by adverse meteorological conditions (ie winds greater than 10m/s at 10m elevation and rain periods) have been excluded from the results.

3.5 Operational Logs

Operational logs for the primary and secondary crushers have been provided by Austen Quarry management. It is noted that transportation activities commence at 5am and processing equipment commences at 6am. Daily pre-shift meetings and safety checks often delay commencement of onsite operations until closer to 7am. Morning shoulder measurements were conducted from 6am to 7am on Friday 13 March 2020 to capture the commencement of onsite operations at the nominated monitoring locations. It is noted that for noise monitoring during the morning shoulder period, the secondary crusher and associated processing equipment (screens, conveyors and the air separator) had not yet commenced operation. It is also noted during the evening period, crushing ceased at 4.25pm, with maintenance operations undertaken on the plant. The maintenance included changing the lining on several sections of plant, which will assist in reducing emissions from the plant. Notwithstanding, noise measurements were undertaken to ensure noise emissions associated with maintenance operations comply with the applicable noise criteria. **Table 2** presents a summary of the hours of operation of the primary and secondary crushers with the quarry operational logs which are reproduced **Appendix B**.

Table 2 Primary and Secondary Crushers Hours of Operation

Date	Primary Crusher		Secondary Crusher	
	Commenced Crushing	Ceased Crushing	Commenced Crushing	Ceased Crushing
12/03/2020	06:40	16:25	06:48	15:50
13/03/2020	07:05	16:00	13:49	21:00

FIGURE 1

LOCALITY PLAN

REF: MAC170523

0 500m

KEY

A MONITORING LOCATION

SITE LOCATION

MAC
Muller Acoustic Consulting

*Imagery Source : nearmaps

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4 Results

4.1 Assessment Results - Location A, 200 Jenolan Caves Road

Operational attended noise monitoring was completed in each assessment period at Location A on Thursday 12 March 2020 and Friday 13 March 2020. **Table 3** presents the monitored noise level contributions and observed meteorological conditions for each measurement.

Table 3 Operator-Attended Noise Survey Results – Location A

Date	Time (hrs)	Period	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
			L_{Amax}	L_{Aeq}	L_{A90}		
12/03/2020	13:59	Day	69	54	39	WD: WNW WS: 1.4m/s Rain: Nil	Insects 30-35 Traffic 55-69 Birds 35-42 Quarry Inaudible
Austen Quarry Contribution[1]						<30dB $L_{Aeq(15min)}$	
12/03/2020	18:29	Evening	84	60	38	WD: NW WS: 0.3m/s Rain: Nil	Creek Flowing 34-39 Traffic 60-84 Birds and Insects 30-35 Quarry Inaudible
Austen Quarry Contribution[1]						<30dB $L_{Aeq(15min)}$	
13/03/2020	06:19	Shoulder	71	50	37	WD: NW WS: 0.1m/s Rain: Nil	Creek Flowing 30-37 Birds 39-52 Traffic 58-71 Quarry Inaudible
Austen Quarry Contribution[1]						<30dB $L_{Aeq(15min)}$ <40dB L_{Amax}	

Note 1: Estimated quarry noise contribution.

4.2 Assessment Results - Location B, 781 Jenolan Caves Road

Operational attended noise monitoring was completed in each assessment period at Location B on Thursday 12 March 2020 and Friday 13 March 2020. **Table 4** presents the monitored noise level contributions and observed meteorological conditions for each measurement.

Table 4 Operator-Attended Noise Survey Results – Location B

Date	Time (hrs)	Period	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
			L_{Amax}	L_{Aeq}	L_{A90}		
12/03/2020	13:24	Day	65	39	33	WD: WNW WS: 1.5m/s Rain: Nil	Insects 33-35 Agricultural Noise 38-40 Birds 35-44 Operator Noise 65 Quarry Trucks (60secs) 30-36
Austen Quarry Contribution[1]						30dB $L_{Aeq(15min)}$	
12/03/2020	18:04	Evening	53	40	30	WD: NW WS: 0.8m/s Rain: Nil	Aircraft 38-45 Wind 40-44 Operator Noise 50-53 Residential Noise 30-33 Quarry Inaudible
Austen Quarry Contribution[1]						<30dB $L_{Aeq(15min)}$	
13/03/2020	06:44	Shoulder	45	41	32	WD: NW WS: 0.1m/s Rain: Nil	Wind Birds 33-45 Distant Traffic Quarry Trucks (90secs) 35-42
Austen Quarry Contribution[1]						30dB $L_{Aeq(15min)}$ 42dB L_{Amax}	

Note 1: Estimated quarry noise contribution.

4.3 Assessment Results - Location C, 64 Carroll Drive

Operational attended noise monitoring was completed in each assessment period at Location C on Thursday 12 March 2020 and Friday 13 March 2020. **Table 5** presents the monitored noise level contributions and observed meteorological conditions for each measurement.

Table 5 Operator-Attended Noise Survey Results – Location C

Date	Time (hrs)	Period	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
			L_{Amax}	L_{Aeq}	L_{A90}		
12/03/2020	14:30	Day	60	40	36	WD: WS: m/s Rain: Nil	Wind 33-36 Traffic 38-44 Birds 44 -60 Quarry Inaudible
Austen Quarry Contribution[1]						<30dB $L_{Aeq(15min)}$	
12/03/2020	18:51	Evening	57	43	37	WD: NNW WS: 0.5m/s Rain: Nil	Dogs 35-36 Traffic 37-57 Birds 40-53 Aircraft 40-42 Quarry Inaudible
Austen Quarry Contribution[1]						<30dB $L_{Aeq(15min)}$	
13/03/2020	05:58	Shoulder	74	42	32	WD: NNW WS: 0.1m/s Rain: Nil	Operator Noise 74 Traffic 38-47 Quarry Inaudible
Austen Quarry Contribution[1]						<30dB $L_{Aeq(15min)}$ <40dB L_{Amax}	

Note 1: Estimated quarry noise contribution.

4.4 Unattended Noise Monitoring Results

Unattended noise monitoring was conducted at Location A from Thursday 12 March 2020 to Wednesday 18 March 2020 while the quarry was operational. A comparison of attended and unattended noise monitoring data has been completed. **Table 6** presents the result of this comparison, focusing on the 15-minute statistics for the corresponding measurement times.

Table 6 Unattended Logging versus Operator-Attended Noise Survey – Location A

Date	Time (hrs)	Attended descriptors (dBA re 20 µPa)			Un-attended descriptors (dBA re 20 µPa)		
		dB L_{Amax}	dB L_{Aeq}	dB L_{A90}[1]	dB L_{Amax}	dB L_{Aeq}	dB L_{A90}
12/03/2020	13:30	65	39	33	70	43	34
12/03/2020	18:00	53	40	30	59	37	30
13/03/2020	06:45	45	41	32	65	42	31

Note 1: L_{Amin} value adopted to exclude continuous extraneous local sources.

Results of the comparison identify that measured levels are generally consistent. Some variation in the metrics are expected due to the proximity of noise sources to the microphones, the moderate separation between the unattended and attended monitoring positions and slight variance in the monitored 15-minute period.

Attended noise monitoring identified that quarry noise was generally inaudible at Location A. Accordingly, it is deemed that the monitored unattended noise levels are not representative of the quarry emissions but rather representative of the ambient local environment. A summary of daily metrics for the assessment period from Thursday 12 March 2020 to Wednesday 18 March 2020 is presented in **Table 7**. **Appendix C** presents the logger charts of the results of the unattended monitoring survey.

Table 7 Unattended Noise Logging Summary – Location A

Date	Unattended descriptors (dBA re 20 µPa)		
	dB L_{Aeq}		
	Day	Evening	Night
Thursday, 12 March 2020	N/A	37	33
Friday, 13 March 2020	39	38	32
Saturday, 14 March 2020	43[1]	35	34
Sunday, 15 March 2020	40	39	33
Monday, 16 March 2020	44	33	31
Tuesday, 17 March 2020	38	38	36
Wednesday, 18 March 2020	42	N/A	N/A

Note 1: Influenced by elevated wind speed, see Appendix B. N/A

5 Noise Compliance Assessment

The compliance assessment for the nominated monitoring locations are presented in **Table 8** to **Table 11** for day, evening and morning shoulder assessment periods.

Table 8 Daytime $LA_{eq(15min)}$ Noise Compliance Assessment

Receiver No.	Quarry Noise Contribution	Quarrying Noise Criteria	Compliant
	dB $LA_{eq(15min)}$	dB $LA_{eq(15min)}$	
A	<30	35	✓
B	30	35	✓
C	<30	35	✓

Table 9 Evening $LA_{eq(15min)}$ Noise Compliance Assessment

Receiver No.	Quarry Noise Contribution	Quarrying Noise Criteria	Compliant
	dB $LA_{eq(15min)}$	dB $LA_{eq(15min)}$	
A	<30	35	✓
B	<30	35	✓
C	<30	35	✓

Table 10 Morning Shoulder $LA_{eq(15min)}$ Noise Compliance Assessment

Receiver No.	Quarry Noise Contribution	Quarrying Noise Criteria	Compliant
	dB $LA_{eq(15min)}$	dB $LA_{eq(15min)}$	
A	<30	35	✓
B	30	35	✓
C	<30	35	✓

Table 11 Morning Shoulder LA_{max} Noise Compliance Assessment

Receiver No.	Quarry Noise Contribution	Quarrying Noise Criteria	Compliant
	dB LA_{max}	dB LA_{max}	
A	<40	52	✓
B	42	52	✓
C	<40	52	✓

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6 Discussion

6.1 Discussion of Results - Location A

Monitoring conducted at Location A, 200 Jenolan Caves Road, Hartley, NSW, was dominated by passing traffic. Traffic included trucks from Austen Quarry, adjacent (non-project) quarries and several transport firms. Local light vehicle traffic also contributed to the overall ambient environment. Quarry noise emissions were inaudible during all three monitoring periods during the March 2020 survey. Other extraneous noise sources audible during the three attended surveys included birds, the creek flowing and insects.

The measured quarry day, evening and morning shoulder noise contribution for Location A are consistent with the noise levels predicted in the Noise and Blasting Impact Assessment (NBIA) (Ref: MAC170511RP1, Muller Acoustic Consulting, 2018) prepared for the Stage 2 extension of the quarry.

6.2 Discussion of Results - Location B

Monitoring results at Location B, 781 Jenolan Caves Road, Good Forest, NSW, identified that the quarry was audible at this monitoring location during the day and morning shoulder periods. Quarry sources included trucks accessing the pit at the start/end of the shift. Notwithstanding, emissions from the quarry remained below applicable noise criteria for all measurements. The site was not audible during the evening monitoring period. Extraneous noise sources dominated the noise environment which included birds, distant traffic hum and insect noise.

The measured quarry day, evening and morning shoulder noise contribution for Location B are consistent with the noise levels predicted in the NBIA.

6.3 Discussion of Results - Location C

Quarry noise was inaudible during all three survey periods at Location C, 64 Carroll Drive, Hartley, NSW, during the attended noise survey for the period of March 2020. Highway traffic, local birds and dogs barking dominated the ambient noise environment.

The measured quarry day, evening and morning shoulder noise contribution for Location C are consistent with the noise levels predicted in the NBIA.

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7 Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has completed a Noise Monitoring Assessment for RW Corkery & Co Pty Limited on behalf of Hy-Tec Industries Pty Ltd for Austen Quarry, Hartley, NSW. The assessment was completed to assess the quarry's compliance with the relevant criteria outlined in EPL#12323 and SSD-6084 for three nominated residential receivers surrounding the quarry.

Operator attended noise monitoring was undertaken on Thursday 12 March 2020 and Friday 13 March 2020 at the nominated monitoring locations with quarry noise contributions compared against the relevant criteria.

The assessment has identified that noise emissions generated by Austen Quarry comply with relevant noise criteria specified in EPL#12323 and SSD-6084 at all assessed locations for the three relevant assessment periods.

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Appendix A – Glossary of Terms

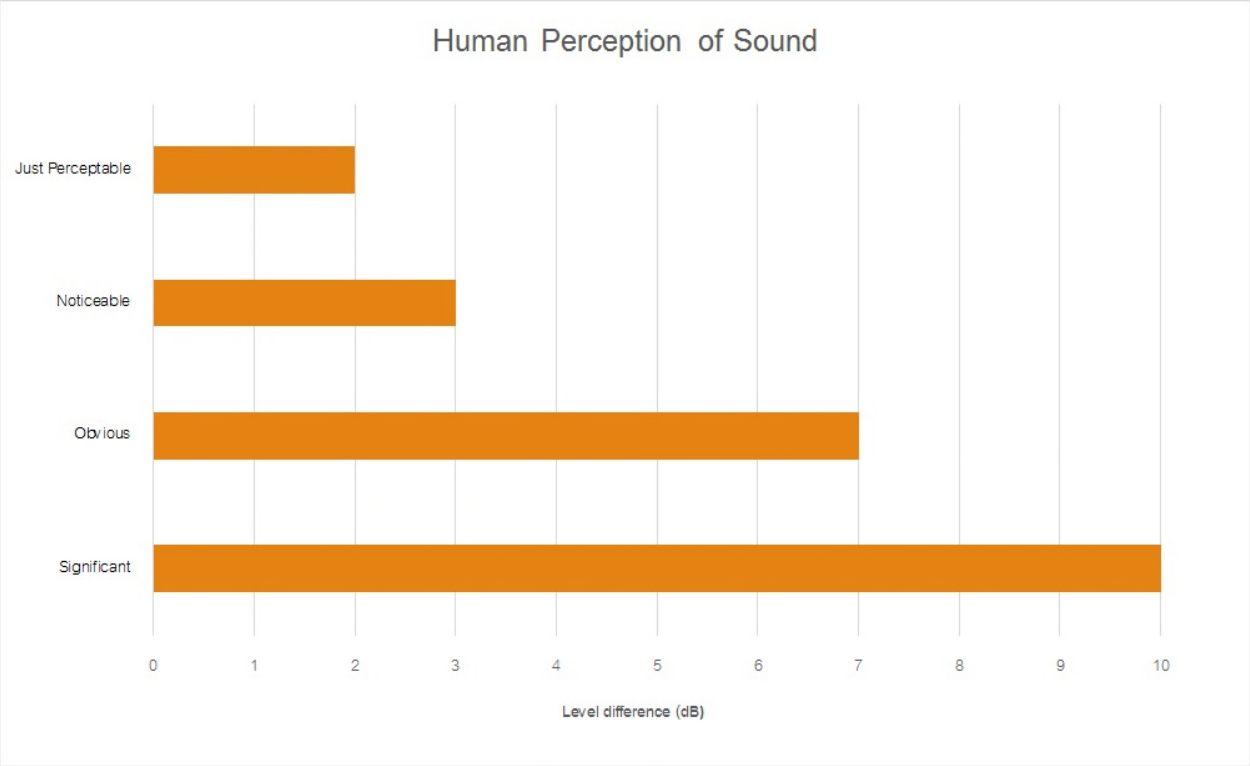
Table A1 provides a number of technical terms have been used in this report.

Table A1 Glossary of Terms	
Term	Description
1/3 Octave	Single octave bands divided into three parts
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
ABL	Assessment Background Level (ABL) is defined in the NPI as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured LA90 statistical noise levels.
Adverse Weather	Weather effects that enhance noise (that is, wind and temperature inversions) that occur at a site for a significant period of time (that is, wind occurring more than 30% of the time in any assessment period in any season and/or temperature inversions occurring more than 30% of the nights in winter).
Ambient Noise	The noise associated with a given environment. Typically a composite of sounds from many sources located both near and far where no particular sound is dominant.
A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to noise.
dBA	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
dB(Z), dB(L)	Decibels Linear or decibels Z-weighted.
Hertz (Hz)	The measure of frequency of sound wave oscillations per second - 1 oscillation per second equals 1 hertz.
LA10	A noise level which is exceeded 10 % of the time. It is approximately equivalent to the average of maximum noise levels.
LA90	Commonly referred to as the background noise, this is the level exceeded 90 % of the time.
LAeq	The summation of noise over a selected period of time. It is the energy average noise from a source, and is the equivalent continuous sound pressure level over a given period.
LAmax	The maximum root mean squared (rms) sound pressure level received at the microphone during a measuring interval.
RBL	The Rating Background Level (RBL) is an overall single figure background level representing each assessment period over the whole monitoring period. The RBL is used to determine the intrusiveness criteria for noise assessment purposes and is the median of the ABL's.
Sound power level (LW)	This is a measure of the total power radiated by a source. The sound power of a source is a fundamental location of the source and is independent of the surrounding environment. Or a measure of the energy emitted from a source as sound and is given by : = 10.log10 (W/Wo) Where : W is the sound power in watts and Wo is the sound reference power at 10-12 watts.

Table A2 provides a list of common noise sources and their typical sound level.

Table A2 Common Noise Sources and Their Typical Sound Pressure Levels (SPL), dBA	
Source	Typical Sound Level
Threshold of pain	140
Jet engine	130
Hydraulic hammer	120
Chainsaw	110
Industrial workshop	100
Lawn-mower (operator position)	90
Heavy traffic (footpath)	80
Elevated speech	70
Typical conversation	60
Ambient suburban environment	40
Ambient rural environment	30
Bedroom (night with windows closed)	20
Threshold of hearing	0

Figure A1 – Human Perception of Sound



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Appendix B – Operational Logs

DAILY PRODUCTION LOG & CHECKLIST - PRIMARY

Date: 13 · 3 · 20 Operator: Kingsley

Weather Conditions; raining ÷ Quarry Bench ID. 750

Shift Start Time	6·00	Shift Finish Time	5·00
Crusher Start Time	7·05	End of day Crusher stopped	4·00

Belt Weightometer Reading - Daily

Conveyor 1 Start	Conveyor 1 Finish	Total Tonnes Crushed
87345	93090	5745
Conveyor 6 Scalps Start	**Conveyor 6 Scalps Finish**	**Total Tonnes Stockpiled**

Cartage of Raw Feed from Face to Boot – Number of loads

KK1 Loads to Boot	38	KK3 Loads to Boot	
KK2 Loads to Boot	37	Contractor Loads to Boot	

Stoppages due to Trucks	Stoppages due to Jaw

Plant Stopped	Plant Started	Downtime (Hrs/Min)	Reason
6.00	7.05	1hr 5m	tool box ÷ L/T CV8
7.15	8.00	45m	lost power ?
9.25	9.55	30m	smoko
12.55	1.35	40m	smoko
4.20			end crushing ÷ training

Pre start checks;

Generator hours. 27638 ÷ Generator oil level.. ✓

Plant Visual ✓

COMMENTS

* 6.45 ÷ plant running
* 7.05 ÷ plant started

DAILY PRODUCTION LOG & CHECKLIST - PRIMARY

Date: 12.3.20 Operator: Kingy

Weather Conditions; Fine Quarry Bench ID. 700

Shift Start Time	6.00	**Shift Finish Time**	5.00
Crusher Start Time	6.40	**End of day Crusher stopped**	4.25

Belt Weightometer Reading - Daily

Conveyor 1 Start	**Conveyor 1 Finish**	**Total Tonnes Crushed**
80631	87345	6714
Conveyor 6 Scalps Start	**Conveyor 6 Scalps Finish**	**Total Tonnes Stockpiled**

Cartage of Raw Feed from Face to Boot – Number of loads

KK1 Loads to Boot	47	**KK3 Loads to Boot**	
KK2 Loads to Boot	45	**Contractor Loads to Boot**	

Stoppages due to Trucks	Stoppages due to Jaw

Plant Stopped	**Plant Started**	**Downtime (Hrs/Min)**	**Reason**
6.00	6.40	40m	toolbox
9.25	9.55	30m	smoko.
12.55	1.35	40m	smoko.
4.25			end crushing & scape out bin

Pre start checks;

Generator hours 27627 ÷ 27637 Generator oil level.. ✓

Plant Visual ✓

COMMENTS

* 6.20 ÷ plant running
* 6.40 ÷ Plant started

Owner: Quarry Manager		HY-TEC CONCRETE & QUARRIES	Form: HTQY-P-SFT-035
Forms & Templates	Revision: 3	Status: Approved	Issue Date: 14.02.12

DAILY PRODUCTION LOG & CHECKLIST - SECONDARY

Date: 13.3.20 Operator: Steve + Sean

Weather Conditions; Fine

Shift Start Time	6 00	Shift Finish Time	10pm
Crusher Start Time	1.49	End of day Crusher stopped	9 pm

Weightometer Reading; Start: 2837807 **Finish:** 3840358

Plant Stopped	Plant Started	Downtime (Hrs/Min)	Reason
	~~1.42~~		
	1.49		Genny issues
502	504	2min	ADJ 450 + 550
545	546	1min	ADJ 450 + 550
737	739	2min	ADJ 450 + 550
804	805	1min	ADJ 450
9pm			Shed full

PRODUCTION SUMMARY

Belts	Size	Description	Total	Gate open	Comments
CV 8	20 mm	Concrete Aggregate	907		
CV 20	Course Sand 4-0mm	Manufactured Sand	557		
CV19*	10-7mm Blend*	Concrete Blend	838		
CV19	7mm	Concrete Aggregate			
CV17	10mm	Concrete Aggregate			
CV15	14mm	Concrete Aggregate	262		
CV5	Ballast/40mm	Non Spec Aggregate			

FINES 164 Total 2728

COMMENTS

NEW 129.168.35.100
255.255.255.0

Comp 129.168.35.201

DAILY PRODUCTION LOG & CHECKLIST - SECONDARY

Date: 12-3-20 Operator: Brenton

Weather Conditions; Fine

Shift Start Time	6.00am	Shift Finish Time	5.00pm
Crusher Start Time	6.48	End of day Crusher stopped	3.50pm

Weightometer Reading; Start: 3836327 **Finish:** 3837807

Plant Stopped	Plant Started	Downtime (Hrs/Min)	Reason
	924	236	450 Drive Belts
941	922	1	ADJ 450 + 550
1021	1034	13mins	Airsep Faulted shut Rest of Plant down
11.27	1129	2mins	Adj 550 + 450
114	116	2min	Adj 450 + 550

PRODUCTION SUMMARY

Belts	Size	Description	Total	Gate open	Comments
CV 8	20 mm	Concrete Aggregate	781		
CV 20	Course Sand 4-0mm	Manufactured Sand	457		
CV19*	10-7mm Blend*	Concrete Blend	~~333~~		
CV19	7mm	Concrete Aggregate	78		
CV17	10mm	Concrete Aggregate			
CV15	14mm	Concrete Aggregate	230		
CV5	Ballast/40mm	Non Spec Aggregate			

Fines 161

total 2372

COMMENTS

CV2 Dropped off on motion ? at 9.30am

Airsep Motion Fault 10.21am

Limit switch for Height on Sand Stacker needs Fixing

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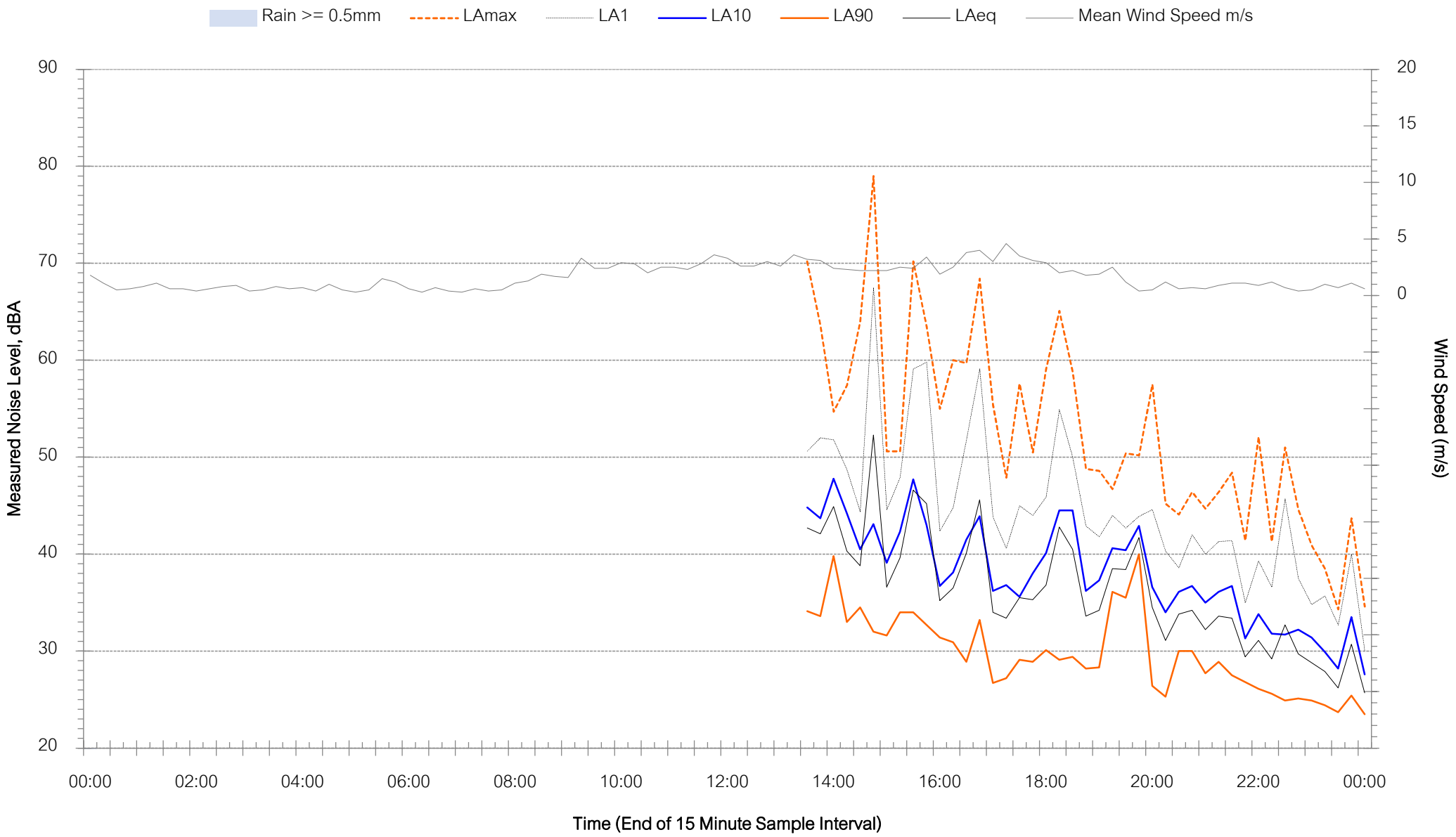
Appendix C – Noise Monitoring Charts

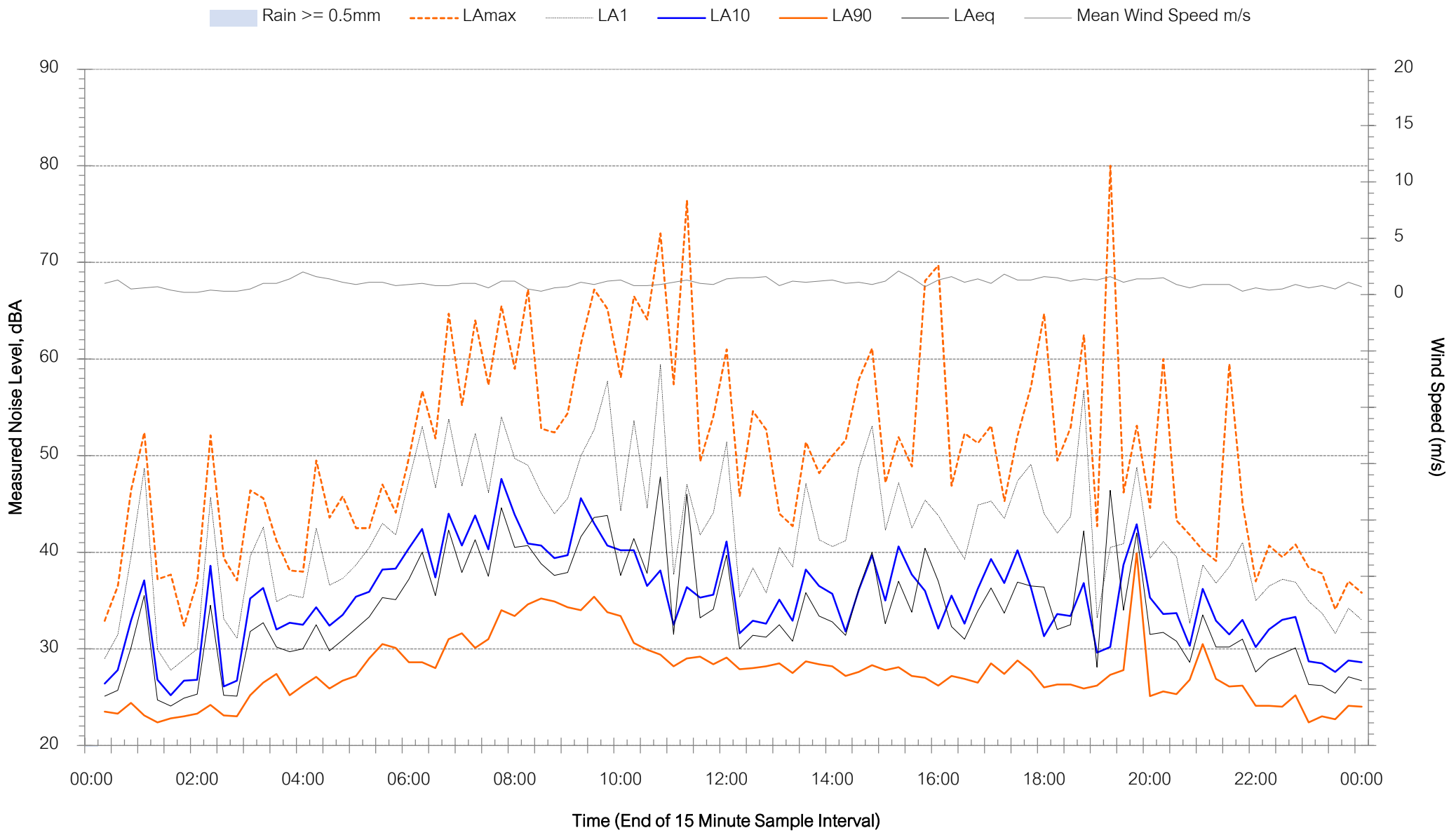
Background Noise Levels

Location B - 781 Jenolan Caves Road - Thursday 12 March 2020



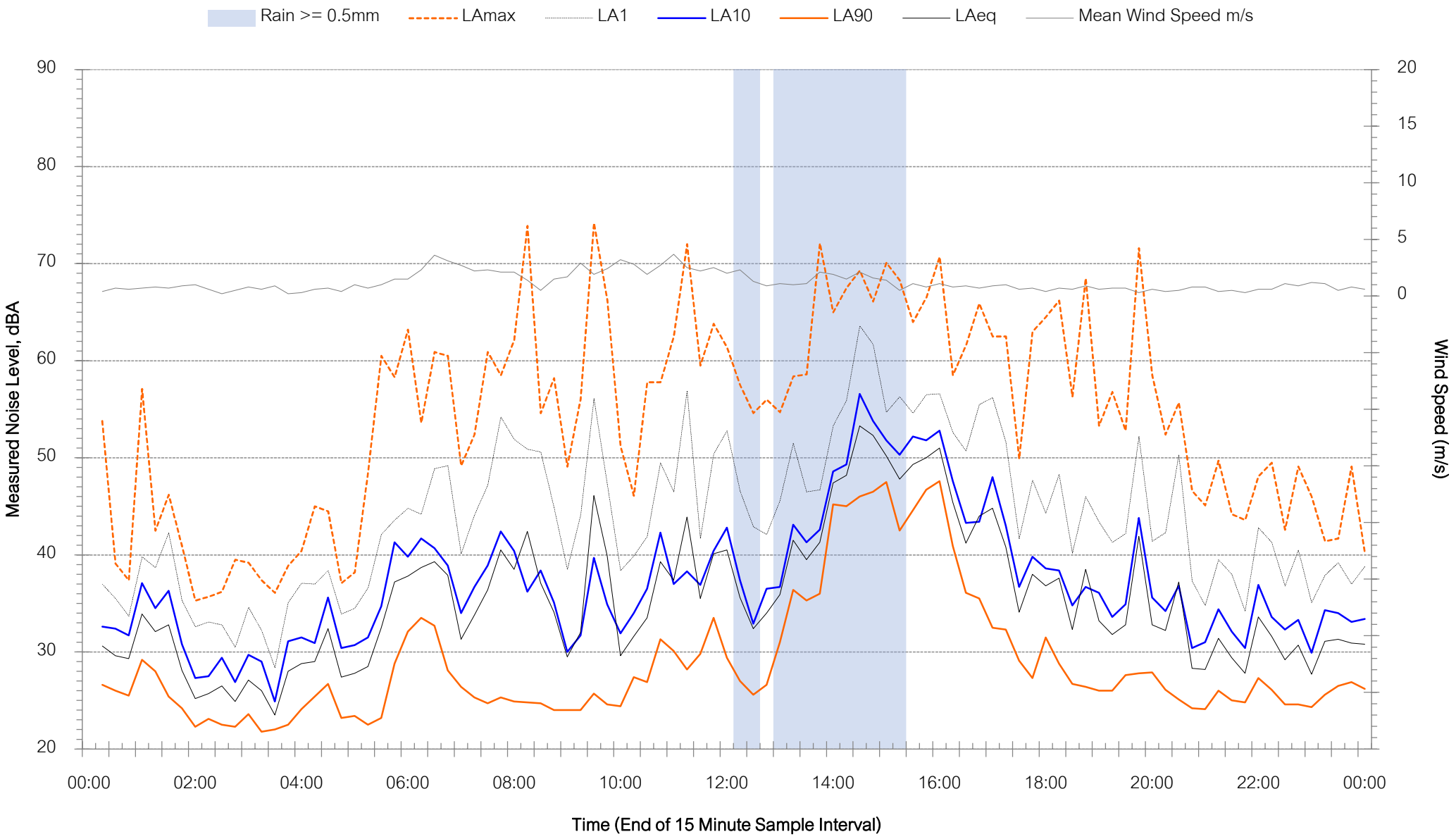
Background Noise Levels

Location B - 781 Jenolan Caves Road - Friday 13 March 2020



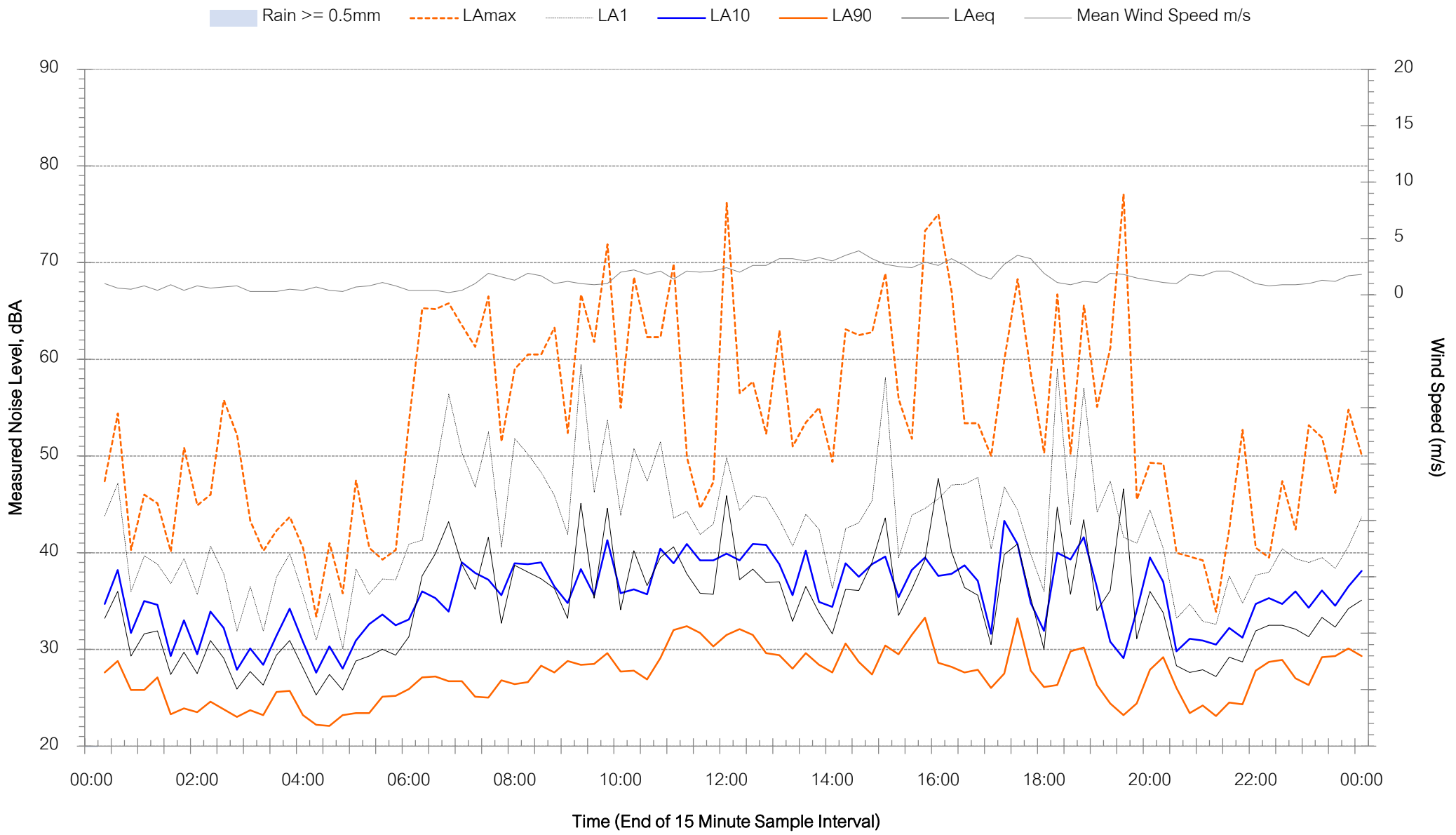
Background Noise Levels

Location B - 781 Jenolan Caves Road - Saturday 14 March 2020



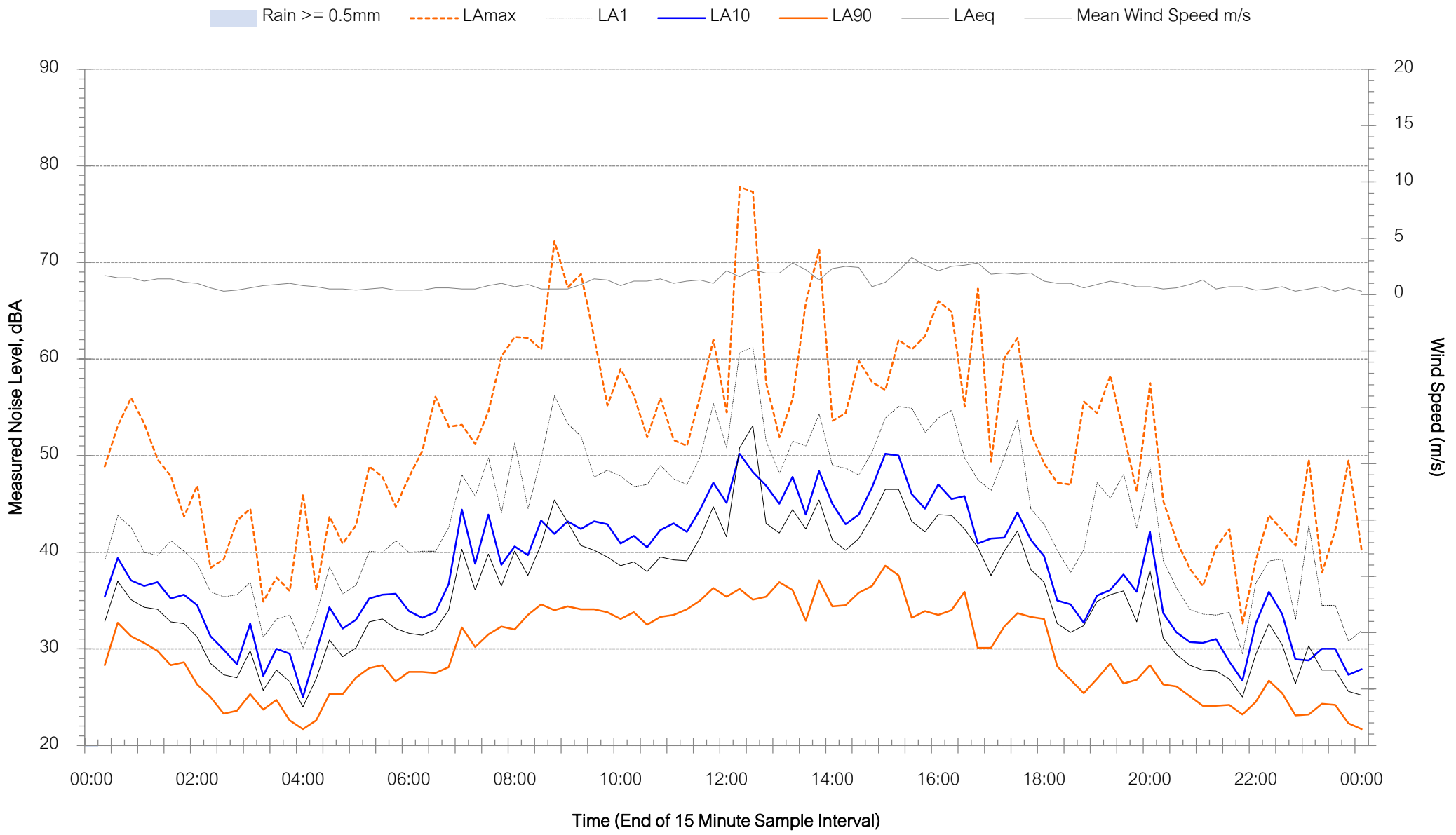
Background Noise Levels

Location B - 781 Jenolan Caves Road - Sunday 15 March 2020



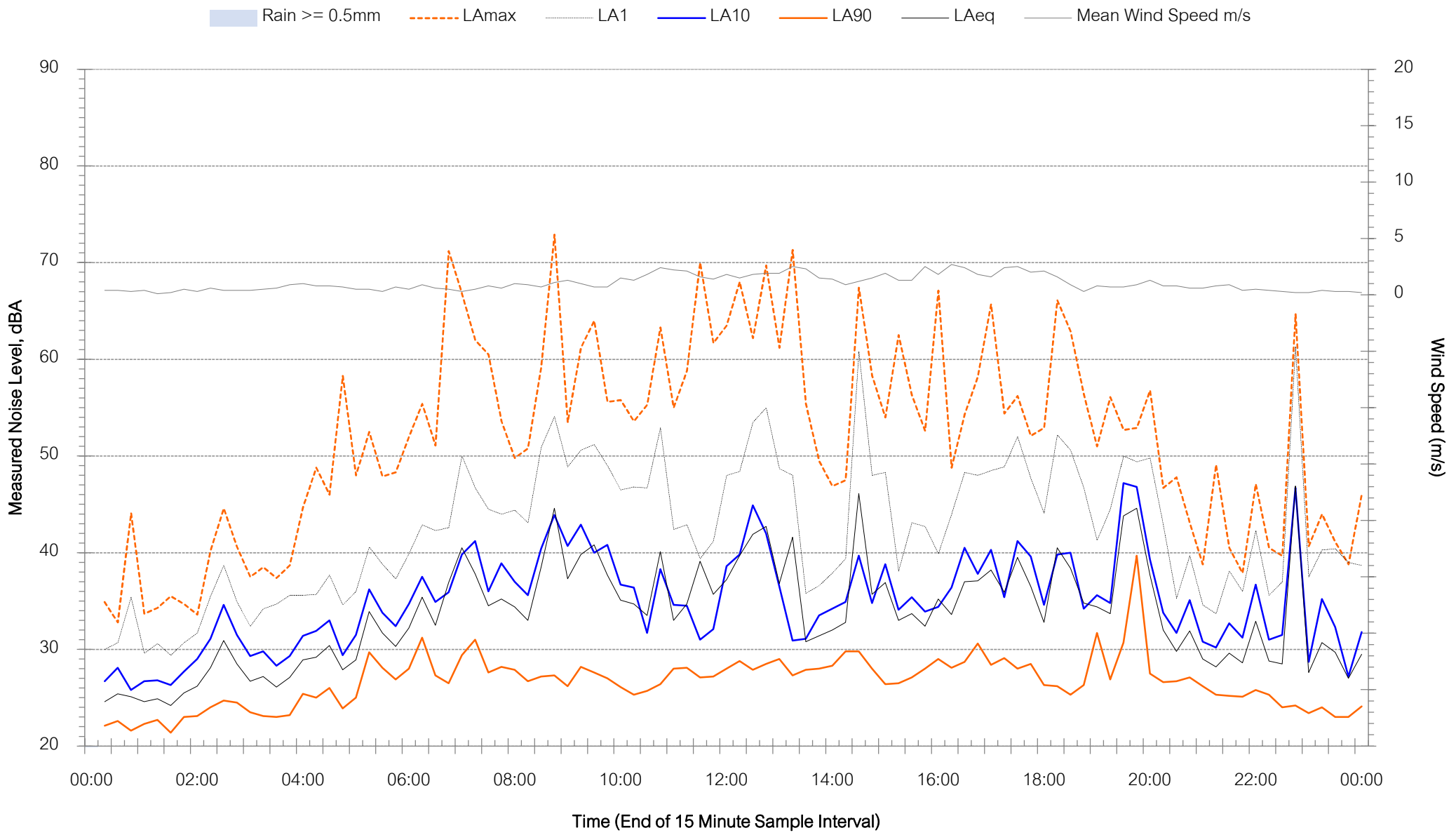
Background Noise Levels

Location B - 781 Jenolan Caves Road - Monday 16 March 2020



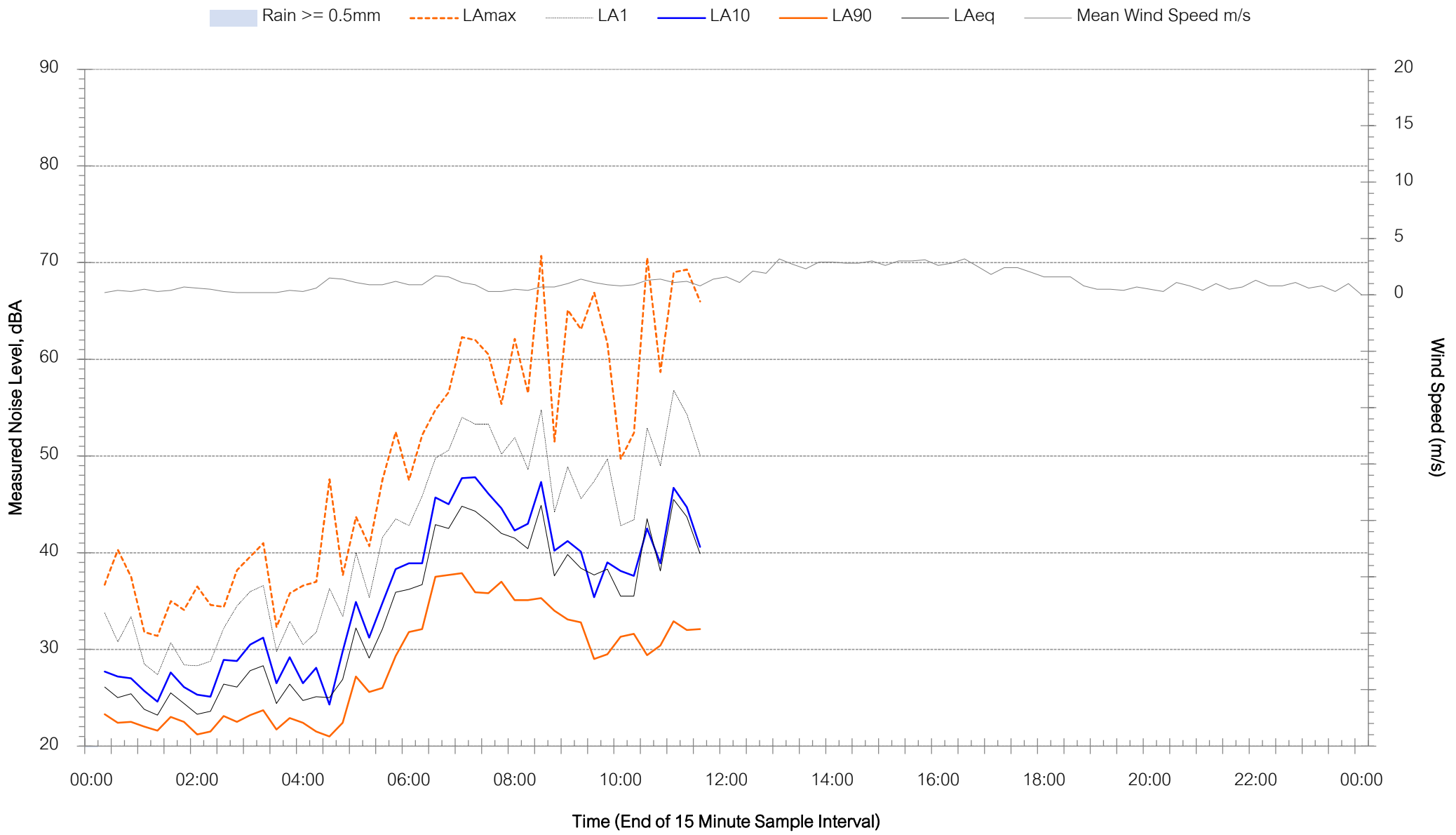
Background Noise Levels

Location B - 781 Jenolan Caves Road - Tuesday 17 March 2020



Background Noise Levels

Location B - 781 Jenolan Caves Road - Wednesday 18 March 2020



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