Noise Monitoring Assessment

Austen Quarry, Hartley, NSW
March 2022

Prepared for: RW Corkery & Co Pty Limited
April 2022
MAC170523RP11

Muller Acoustic Consulting

Document Information

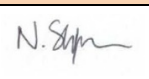
Noise Monitoring Assessment

Austen Quarry, Hartley, NSW

March 2022

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

Prepared by: Muller Acoustic Consulting Pty Ltd
PO Box 678, Kotara NSW 2289
ABN: 36 602 225 132
P: +61 2 4920 1833
www.mulleracoustic.com

Document ID	Date	Prepared By	Signed	Reviewed By	Signed
MAC170523RP11	8 April 2022	Nicholas Shipman		Oliver Muller	

CONTENTS

This page has been intentionally left blank

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 on Tuesday 22 March 2022 and Wednesday 23 March 2022 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**.

This page has been intentionally left blank

2 Noise Criteria

2.1 Attended Noise Compliance

Schedule 3, Condition 3 of the Austen Quarry Development Consent (SSD-6084), approved and modified on 15 July 2019, 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

This page has been intentionally left blank

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 Tuesday 22 March 2022 and Wednesday 23 March 2022. 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 A - 200 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 between Tuesday 22 March 2022 and Thursday 31 March 2022. 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. 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. It is also noted that between 07.30am and 12.00pm on 23 March 2022 the primary crusher paused operations on several occasions due to blockages on the conveyer belt. The survey was undertaken to ensure maintenance operations also complied with the applicable noise criteria for the quarry. Morning shoulder measurements were conducted from 6am to 7am on Wednesday 23 March 2022 to capture the onsite operations at the nominated monitoring locations.

It is also noted that the secondary crushing ceased at approximately 4.30pm daily for the past several months, with no evening time crushing undertaken during this period. This is due to the reduced product demand during the COVID19 shutdown. **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 (hrs)	Ceased Crushing (hrs)	Commenced Crushing (hrs)	Ceased Crushing (hrs)
22/03/2022	07:42	16:47	06:40	16:37
23/03/2022	07:15	17:00	06:39	16:40

FIGURE 1

LOCALITY PLAN

REF: MAC170523

0 500m

KEY

A MONITORING LOCATION

SITE LOCATION

MAC
Muller Acoustic Consulting

*Imagery Source : nearmaps

This page has been intentionally left blank

4 Results

4.1 Assessment Results - Location A

Operational attended noise monitoring was completed in each assessment period at Location A, 200 Jenolan Caves Road on Tuesday 22 March 2022 and Wednesday 23 March 2022. **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)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L_{Amax}	L_{Aeq}	L_{A90}		
22/03/2022	17:08 (Day)	82	59	44	WD: E WS: 0.1m/s Rain: Nil	Traffic 55-82 Insects 30-32 Creek 42-45 Birds 42-45 Quarry inaudible
Austen Quarry Contribution[1]						<34dB $L_{Aeq(15min)}$
22/03/2022	18:24 (Evening)	82	60	44	WD: E WS: 0.1m/s Rain: Nil	Local residential noise 35-40 Creek 44-45 Birds 40-46 Insects <35 Traffic 55-82 Quarry inaudible
Austen Quarry Contribution[1]						<34dB $L_{Aeq(15min)}$
23/03/2022	06:20 (Morning shoulder)	79	59	46	WD: ESE WS: 0.2m/s Rain: Nil	Traffic 52-79 Creek 45-48 Insects <35 Birds 45-58 Quarry inaudible
Austen Quarry Contribution[1]						<35dB $L_{Aeq(15min)}$ <35dB L_{Amax}

Note 1: Estimated quarry noise contribution.

4.2 Assessment Results - Location B

Operational attended noise monitoring was completed in each assessment period at Location B, 781 Jenolan Caves Road on Tuesday 22 March 2022 and Wednesday 23 March 2022. **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)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L_{Amax}	L_{Aeq}	L_{A90}		
22/03/2022	16:38 (Day)	59	40	38	WD: E WS: 0.1m/s Rain: Nil	Birds 38-59 Livestock 34-37 Wind in vegetation 41-45 Traffic 35-40 Quarry inaudible
Austen Quarry Contribution[1]						<28dB $L_{Aeq(15min)}$
22/03/2022	18:52 (Evening)	73	44	36	WD: E WS: 0.1m/s Rain: Nil	Birds 34-73 Traffic 34-38 Local residential noise 44-54 Quarry inaudible
Austen Quarry Contribution[1]						<26dB $L_{Aeq(15min)}$
23/03/2022	06:45 (Morning shoulder)	65	42	34	WD: E WS: 0.8m/s Rain: Nil	Insects 35-37 Traffic 40-45 Wind in vegetation 42-65 Quarry reverse alarms 28-33 (95 seconds)
Austen Quarry Contribution[1]						<25dB $L_{Aeq(15min)}$ <33dB L_{Amax}

Note 1: Estimated quarry noise contribution.

4.3 Assessment Results - Location C

Operational attended noise monitoring was completed in each assessment period at Location C, 64 Carroll Drive on Tuesday 22 March 2022 and Wednesday 23 March 2022. **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)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
		L_{Amax}	L_{Aeq}	L_{A90}		
22/03/2022	17:32 (Day)	59	38	34	WD: E WS: 0.1m/s Rain: Nil	Insects 30-35 Birds 33-45 Traffic 30-36 Dog barking 42-59 Quarry inaudible
Austen Quarry Contribution[1]						<25dB $L_{Aeq(15min)}$
22/03/2022	18:00 (Evening)	66	44	31	WD: E WS: 0.2m/s Rain: Nil	Traffic 30-66 Insects 28-30 Birds 33-45 Local residential noise 33-61 Dog bark 45-52 Quarry inaudible
Austen Quarry Contribution[1]						<21dB $L_{Aeq(15min)}$
23/03/2022	06:10 (Morning shoulder)	78	45	38	WD: ESE WS: 2.1m/s Rain: Nil	Traffic 35-43 Wind in vegetation 37-48 Insects <35 Birds 42-78 Quarry inaudible
Austen Quarry Contribution[1]						<28dB $L_{Aeq(15min)}$ <28dB L_{Amax}

Note 1: Estimated quarry noise contribution.

4.4 Unattended Noise Monitoring Results

Unattended noise monitoring was conducted at Location B from Tuesday 22 March 2022 and Wednesday 30 March 2022 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 B

Date	Time (hrs)	Attended descriptors (dBA re 20 µPa)			Unattended descriptors (dBA re 20 µPa)		
		dB L_{Amax}	dB L_{Aeq}	dB L_{A90}	dB L_{Amax}	dB L_{Aeq}	dB L_{A90}
22/03/2022	16:38	59	40	38	70	45	34
22/03/2022	18:52	73	44	36	51	37	35
23/03/2022	06:45	65	42	34	68	44	34

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 the variance in the monitored 15-minute period.

Attended noise monitoring identified that quarry noise was generally inaudible at Location B. 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 Tuesday 22 March 2022 and Wednesday 30 March 2022 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 B

Date	Unattended descriptors (dBA re 20 µPa)		
	dB L_{Aeq}		
	Day	Evening	Night
Tuesday, 22 March 2022	N/A	40	40
Wednesday, 23 March 2022	43	39	32
Thursday, 24 March 2022	42	37	34
Friday, 25 March 2022	42	40	38
Saturday, 26 March 2022	42	38	35
Sunday, 27 March 2022	42	42	32
Monday, 28 March 2022	44	46	42
Tuesday, 29 March 2022	45	38	39
Wednesday, 30 March 2022	43	42	37

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	<34	35	✓
B	<28	35	✓
C	<25	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	<34	35	✓
B	<26	35	✓
C	<21	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	<35	35	✓
B	<25	35	✓
C	<28	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	<35	52	✓
B	<33	52	✓
C	<28	52	✓

This page has been intentionally left blank

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 for the March 2022 survey. Other extraneous noise sources audible during the three attended surveys included insects, creek flowing, birds and local residential noise.

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 Pty Ltd, 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 during the morning shoulder period. Reverse alarms were audible for approximately 95 seconds and the estimated quarry noise contribution was measured at <25dB $L_{Aeq(15min)}$ and <33 L_{Amax}, respectively. The quarry remained inaudible during the day and evening periods at this monitoring location. Extraneous noise sources dominated the noise environment which included birds, livestock, wind in vegetation, traffic and local residential 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 2022. Insects, birds, traffic, dogs barking, wind in vegetation and local residential noise 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.

This page has been intentionally left blank

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 Tuesday 22 March 2022 and Wednesday 23 March 2022 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.

This page has been intentionally left blank

Appendix A – Glossary of Terms

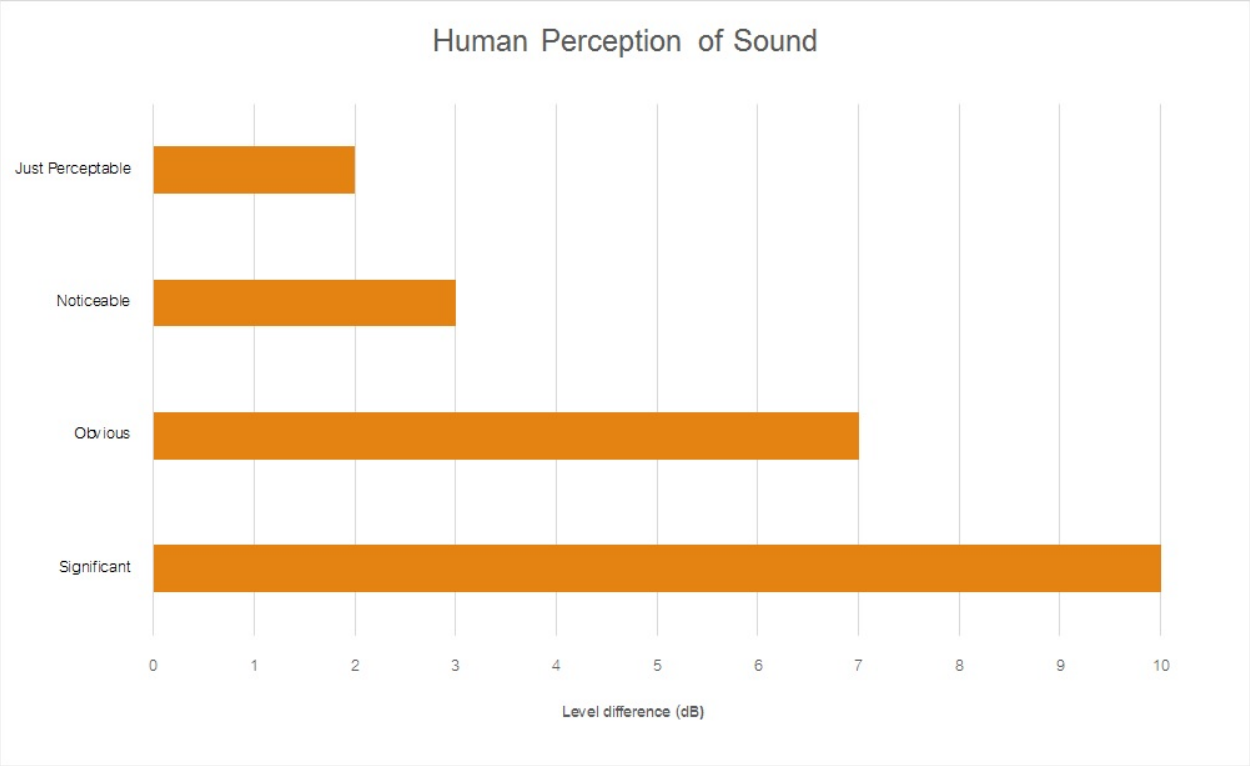
Table A1 provides a number of technical terms have been used in this report.

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



This page has been intentionally left blank

Appendix B – Operational Logs

DAILY PRODUCTION LOG & CHECKLIST - PRIMARY

an ADBRI company

Date: 23/3/22 Operator: Pauly Horner

Weather Conditions; ..... Quarry Bench ID. 785

Shift Start Time	1	Shift Finish Time	17:15
Crusher Start Time		End of day Crusher stopped	

Belt Weightometer Reading - Daily

Conveyor 1 Start	Conveyor 1 Finish	Total Tonnes Crushed

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

6300

DT4 Loads to Boot	45 +4	DT1 Loads to Boot	7
DT6 Loads to Boot	46 +10	Loader tonnes to Boot	431 + 180 +

Stoppages due to Trucks	Stoppages due to Jaw

Plant Stopped	Plant Started	Downtime (Hrs/Min)	Reason
6:00	6:42		Pre start / tool box
7:30	8:00		Blocked chute CV2
9:30	9:45		Smoko
10:30	11:00		Blocked chute CV5
11:45	12:00		Blocked chute CV5
1:00	1:30		lunch

Pre start checks;

Generator hours. 32238 Generator oil level.. ✓

Plant Visual ..... Pilot hours .....

COMMENTS

first truck tipped 6:55

DAILY PRODUCTION LOG & CHECKLIST - PRIMARY

an ADBRI company

Date: 22/3/22 Operator: Dylan

Weather Conditions; ..... Quarry Bench ID. 785

Shift Start Time	0600	Shift Finish Time	1700
Crusher Start Time	0742	End of day Crusher stopped	1647

Belt Weightometer Reading - Daily

Conveyor 1 Start	Conveyor 1 Finish	Total Tonnes Crushed

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

5160

DT4 Loads to Boot	38	DT1 Loads to Boot	13
DT6 Loads to Boot	40	Loader tonnes to Boot	

Stoppages due to Trucks	Stoppages due to Jaw

Plant Stopped	Plant Started	Downtime (Hrs/Min)	Reason
6:00	6:36		Pre start / tool box
9:30	9:40		Smoko
1:00	1:20		lunch

Pre start checks;

Generator hours. 32228 Generator oil level.. —

Plant Visual ..... Pilot hours .....

COMMENTS

first truck tipped

DAILY PRODUCTION LOG & CHECKLIST - SECONDARY

HY-TEC an ADBRI company

Date: 23.3.22 Operator: Shan

Weather Conditions; .....

Shift Start Time	6.00	Shift Finish Time	
Crusher Start Time	6.39	End of day Crusher stopped	

Weightometer Reading; Start: 5077454 **Finish:**.....

Plant Stopped	Plant Started	Downtime (Hrs/Min)	Reason
6.00	6.39	39	Pre start / tool Box
7.26	7.32	8	Adj 450/550/ Reset 450
7.49	1018	2hrs 24m	stopped no rock HAD To open 450 crusher
1031	1032	1	Adj 450 +550
1140	1141	1	Adj 450 +550
1230	1235	5	changed gate to make 10/7
2.36	2.53	17	Metal detector
4.21	4.23	2	Adj 450+550
4.26	4.40	14	Clean 10/7 chute.
7.19	7.20	1	Adj 450
8.50		50	Out of Rock

* 6.30pm switched to feeder 2+3

PRODUCTION SUMMARY

Belts	Size	Description	Total Tonnes	Comments
CV 8	20 mm	Concrete Aggregate	2074	
CV 20	Course Sand 4-0mm	Manufactured Sand	857	
CV 20	Old Man Sand	Man sand By-Pass Air-Sep		
CV 24	Super Fine –50micron	Super Fine Sand	161	
CV19*	10-7mm Blend*	Concrete Blend	1464	
CV19	7mm	Concrete Aggregate	178	
CV17	10mm	Concrete Aggregate		
CV15	14mm	Concrete Aggregate	273	
CV5	Ballast/40mm	Non Spec Aggregate		

5007

DAILY PRODUCTION LOG & CHECKLIST - SECONDARY

an ADBRI company

Date: 22.3.22 Operator: Shan

Weather Conditions; Fine

Shift Start Time	6.00	Shift Finish Time	10pm
Crusher Start Time	6.40	End of day Crusher stopped	437

Weightometer Reading; Start: 5073559 **Finish:** 5077454

Plant Stopped	Plant Started	Downtime (Hrs/Min)	Reason
6.00	6.40	40.	Tool Box / pre start / Top up oils
7.40	8.00	20	Hose CV10 Snub / Clean Screens
9.40	9.50	10	Metal Detector
11.05	11.25	20	Check S3
12.09	12.11	2	Adj 450 + 550

PRODUCTION SUMMARY

Belts	Size	Description	Total Tonnes	Comments
CV 8	20 mm	Concrete Aggregate	1538	
CV 20	Course Sand 4-0mm	Manufactured Sand	572	
CV 20	Old Man Sand	Man sand By-Pass Air-Sep		
CV 21	Super Fine –50micron	Super Fine Sand	137	
CV19*	10-7mm Blend*	Concrete Blend		
CV19	7mm	Concrete Aggregate	560	
CV17	10mm	Concrete Aggregate	1086	
CV15	14mm	Concrete Aggregate	323	
CV5	Ballast/40mm	Non Spec Aggregate		

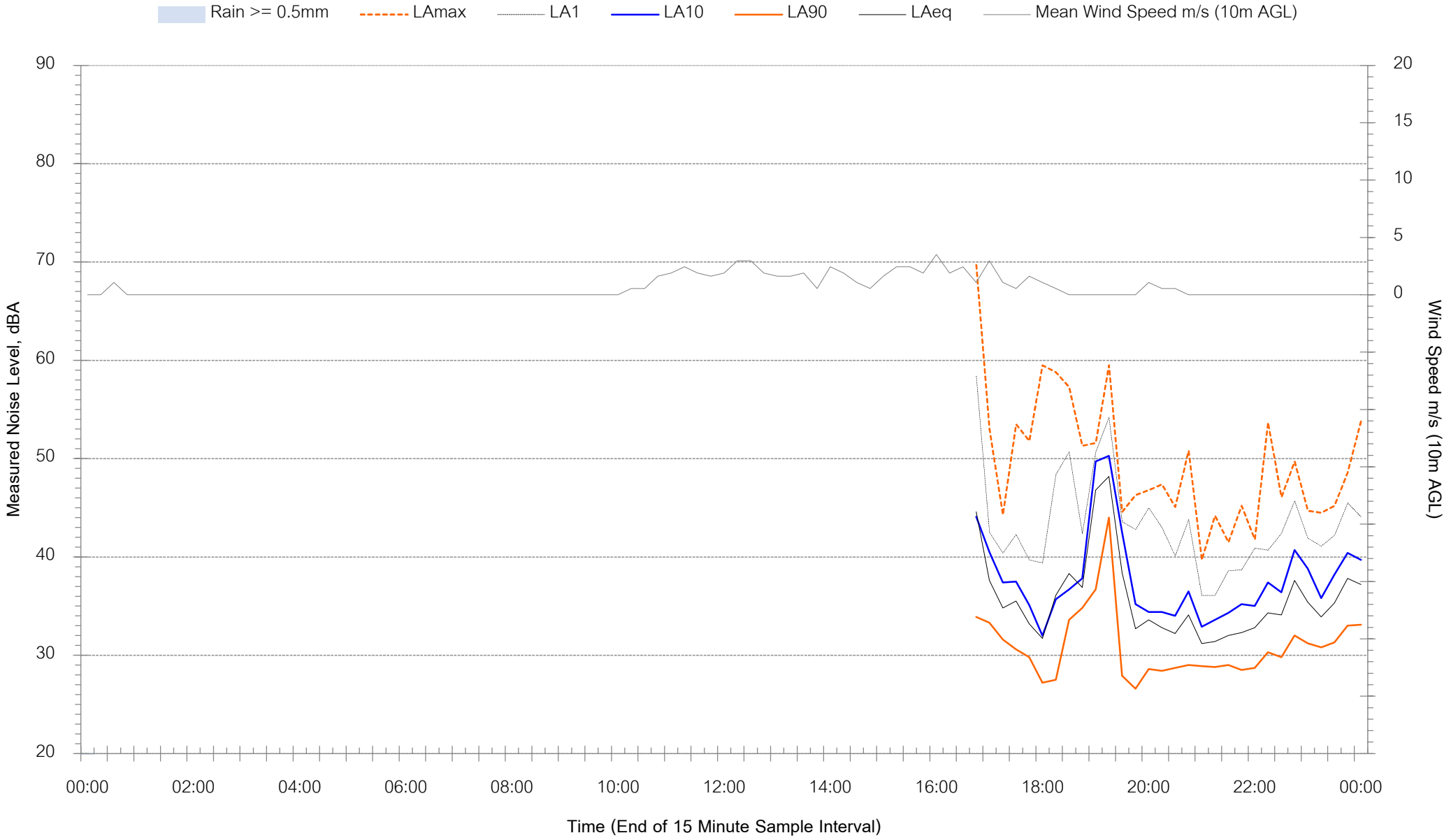
4216

This page has been intentionally left blank

Appendix C – Noise Monitoring Charts

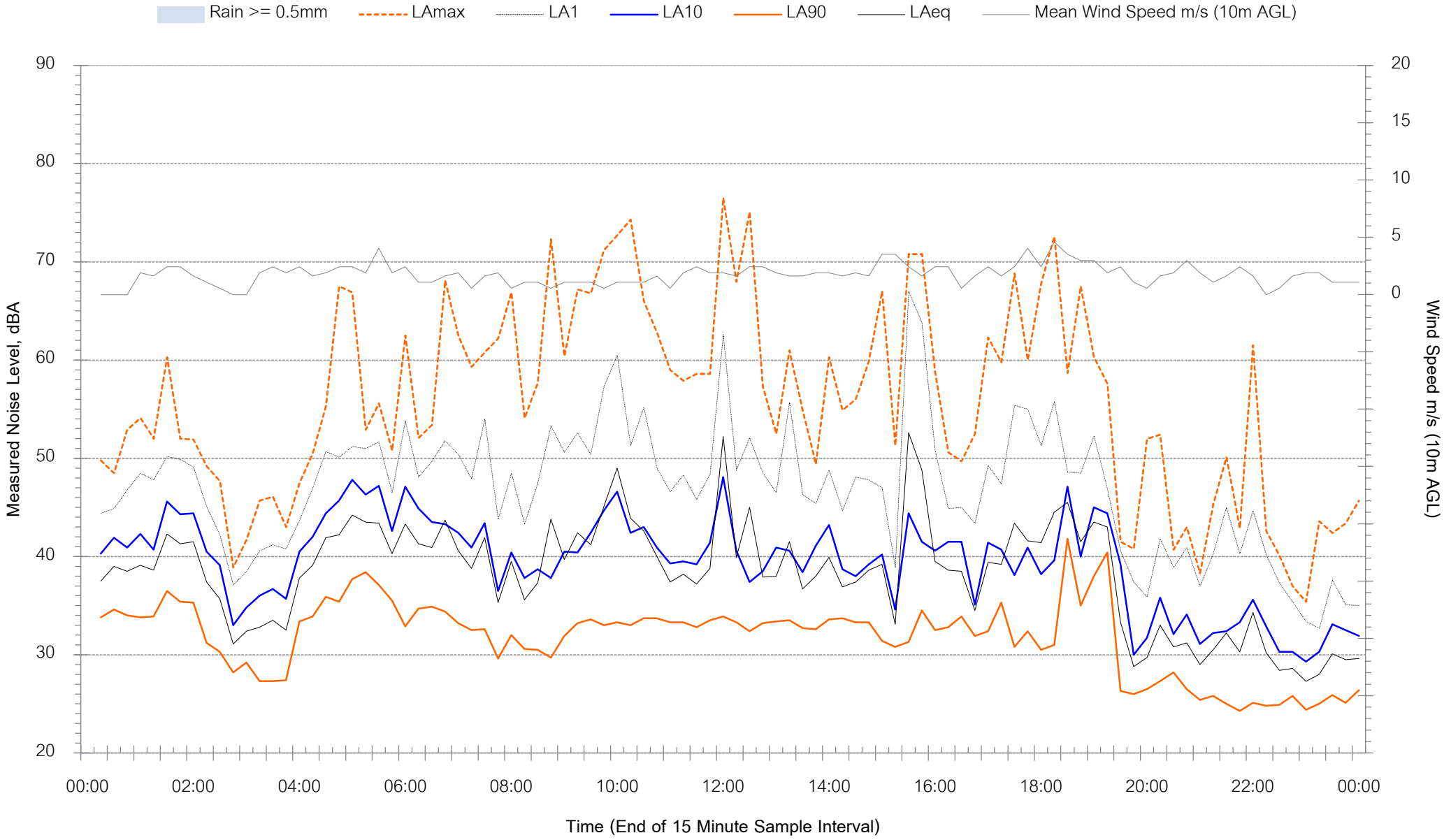
Background Noise Levels

200 Jenolan Caves Road, Hartley - Tuesday 22 March 2022



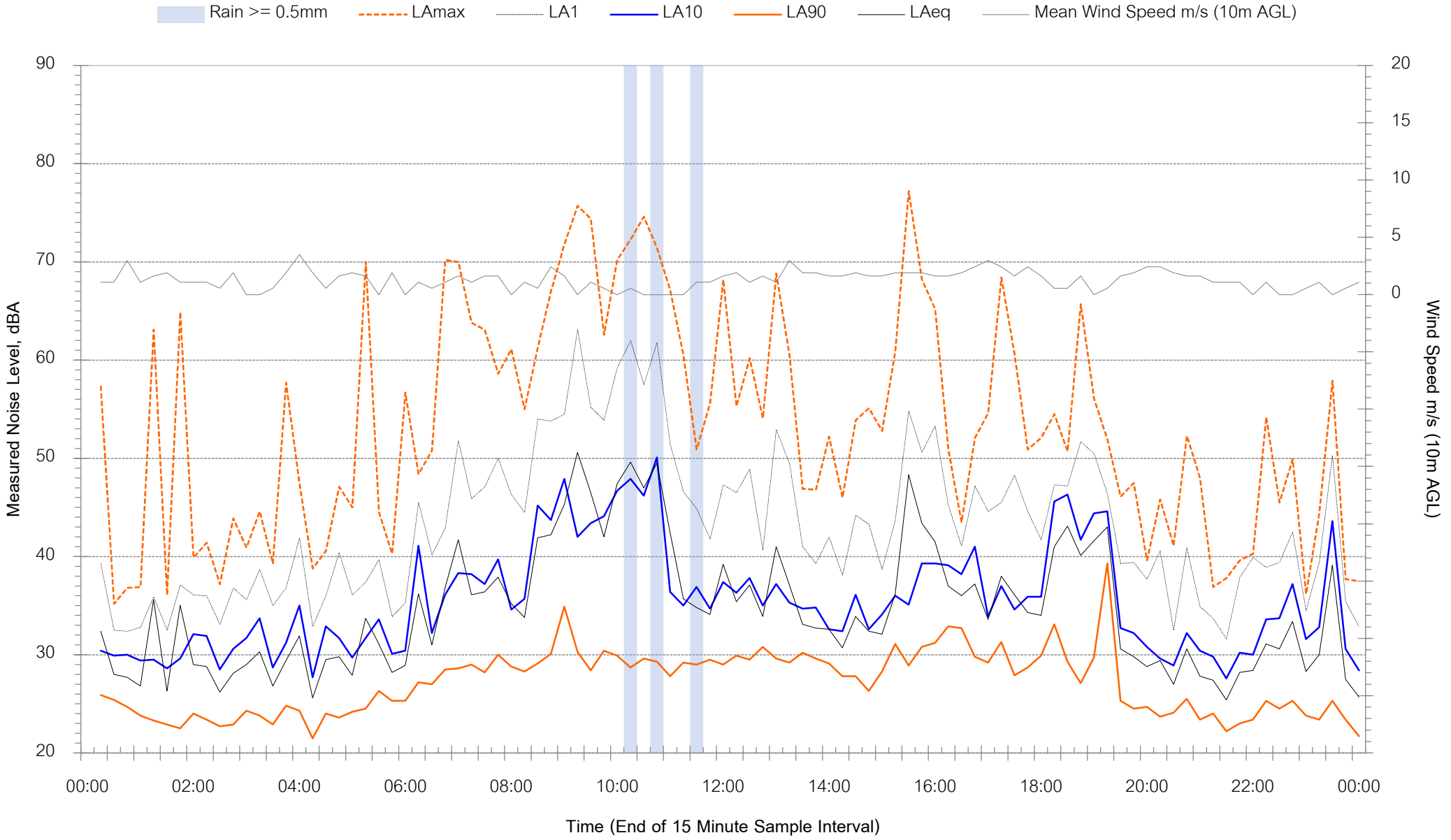
Background Noise Levels

200 Jenolan Caves Road, Hartley - Wednesday 23 March 2022



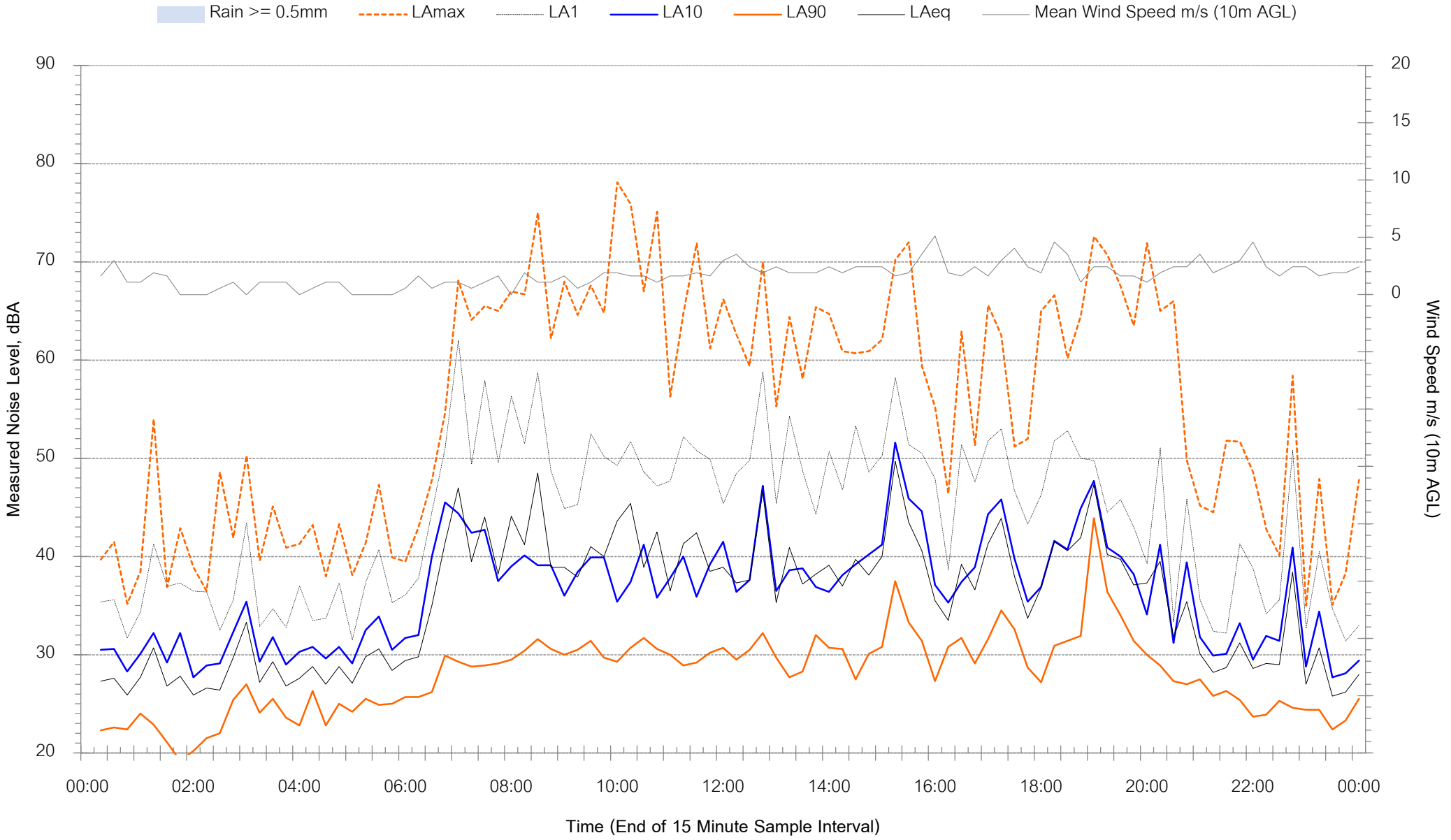
Background Noise Levels

200 Jenolan Caves Road, Hartley - Thursday 24 March 2022



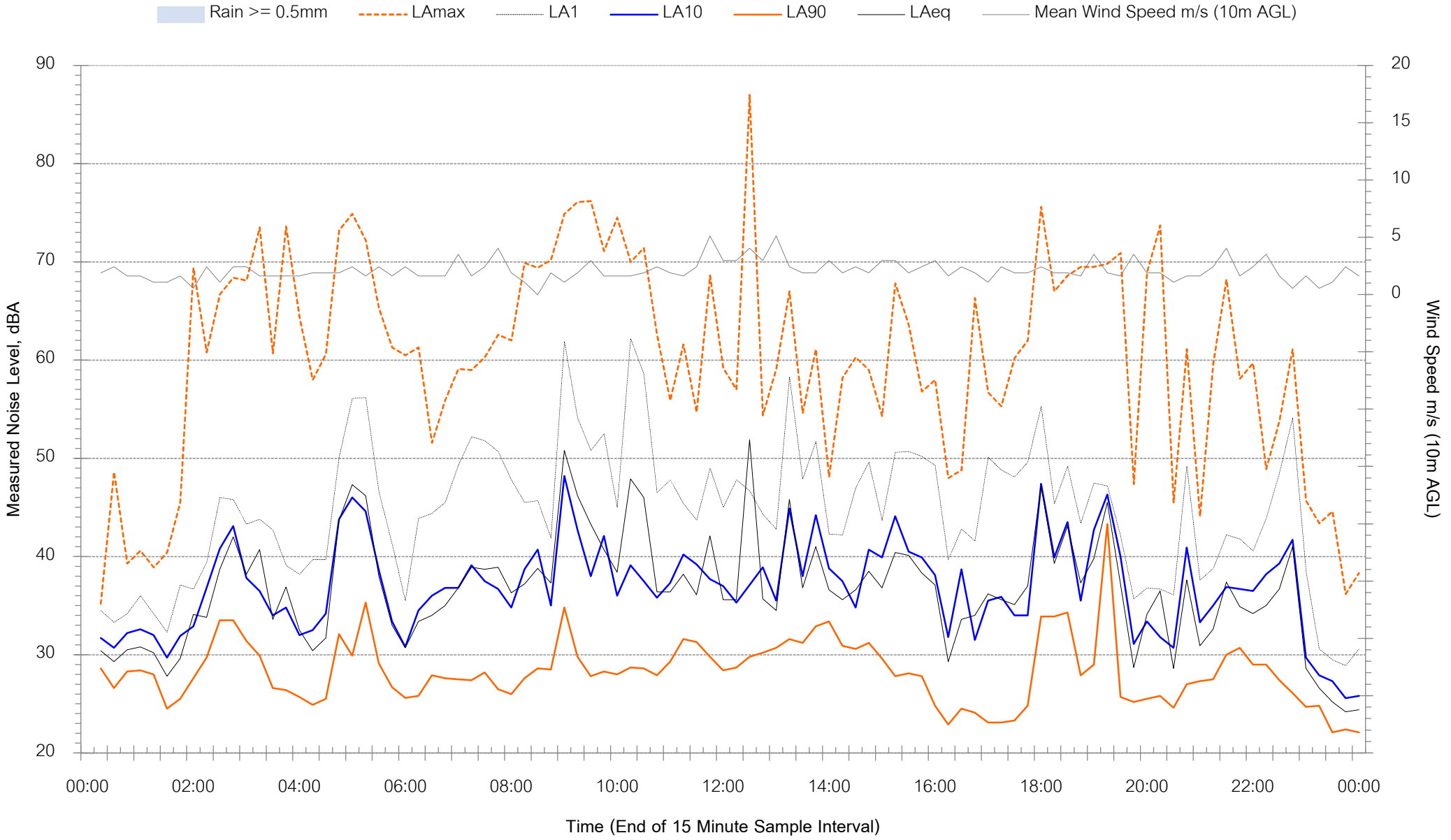
Background Noise Levels

200 Jenolan Caves Road, Hartley - Friday 25 March 2022



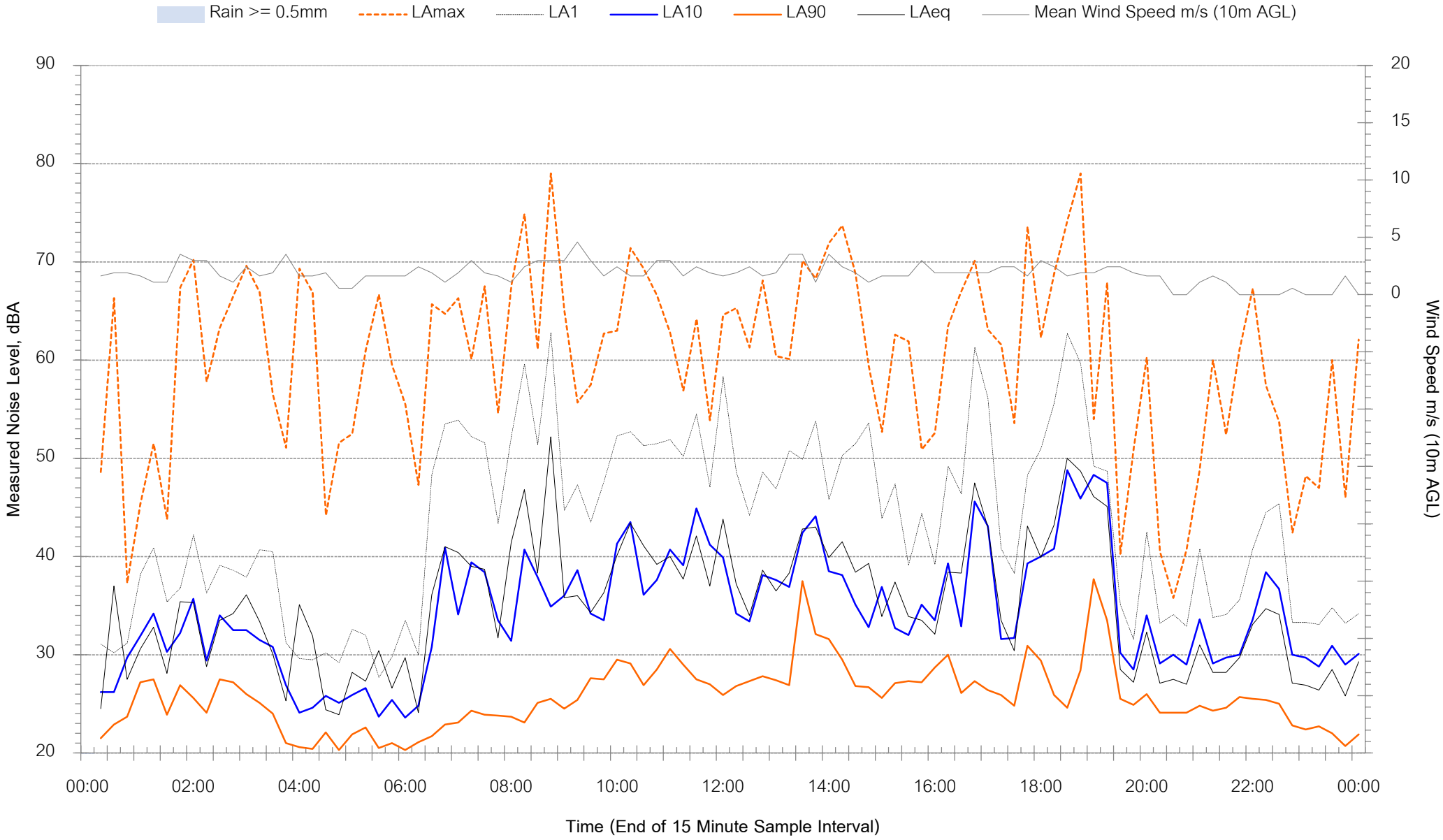
Background Noise Levels

200 Jenolan Caves Road, Hartley - Saturday 26 March 2022



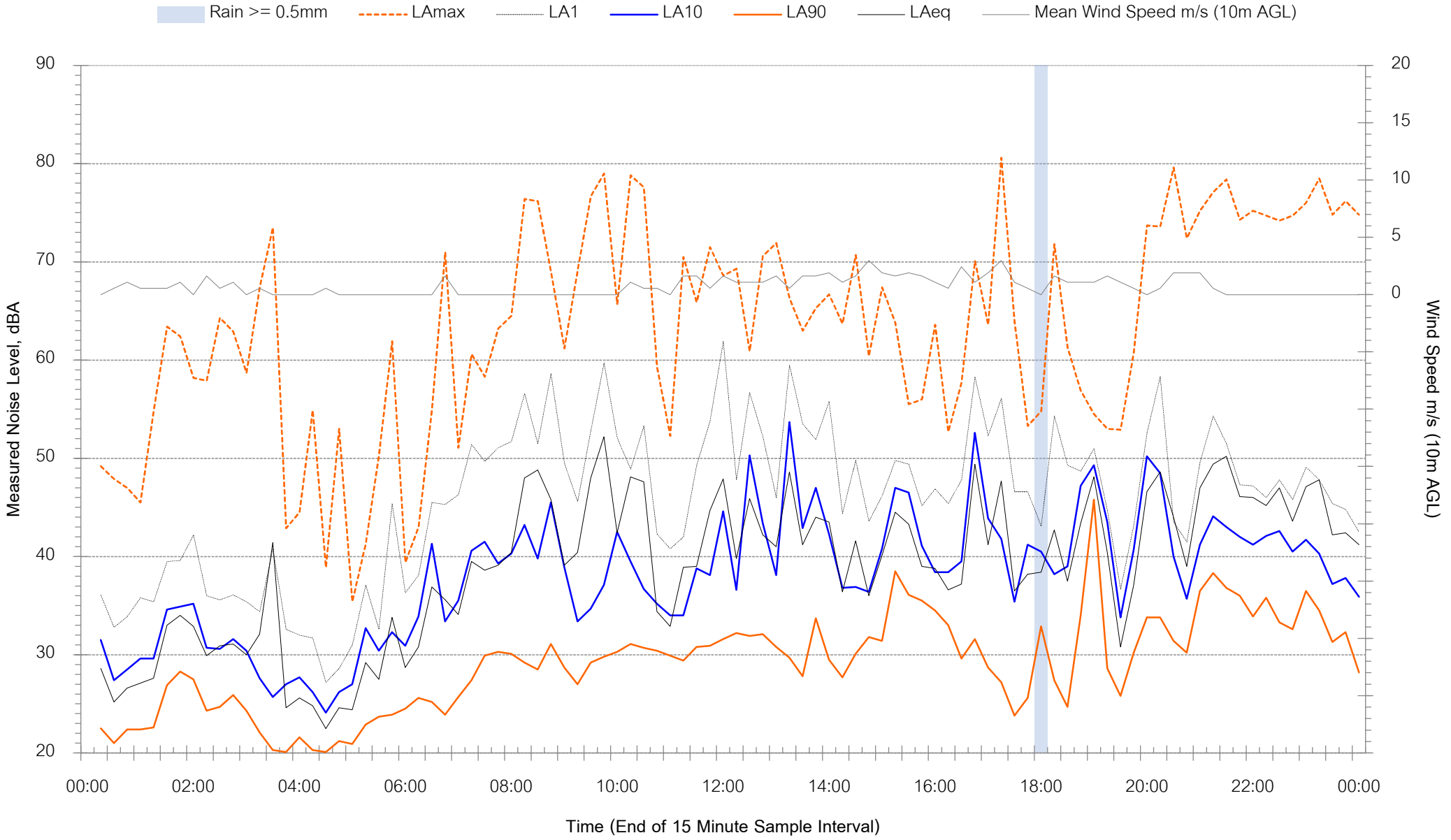
Background Noise Levels

200 Jenolan Caves Road, Hartley - Sunday 27 March 2022



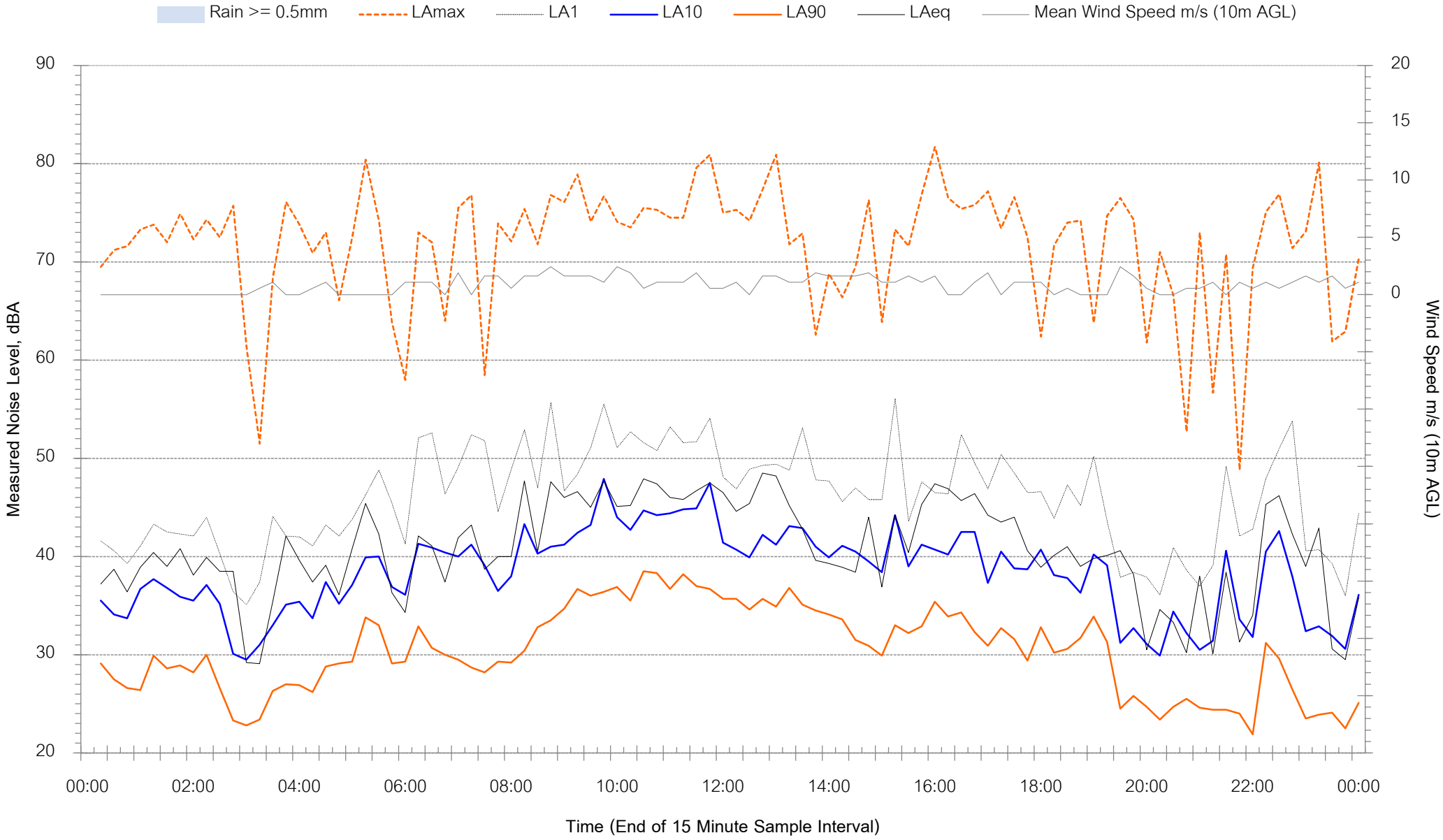
Background Noise Levels

200 Jenolan Caves Road, Hartley - Monday 28 March 2022



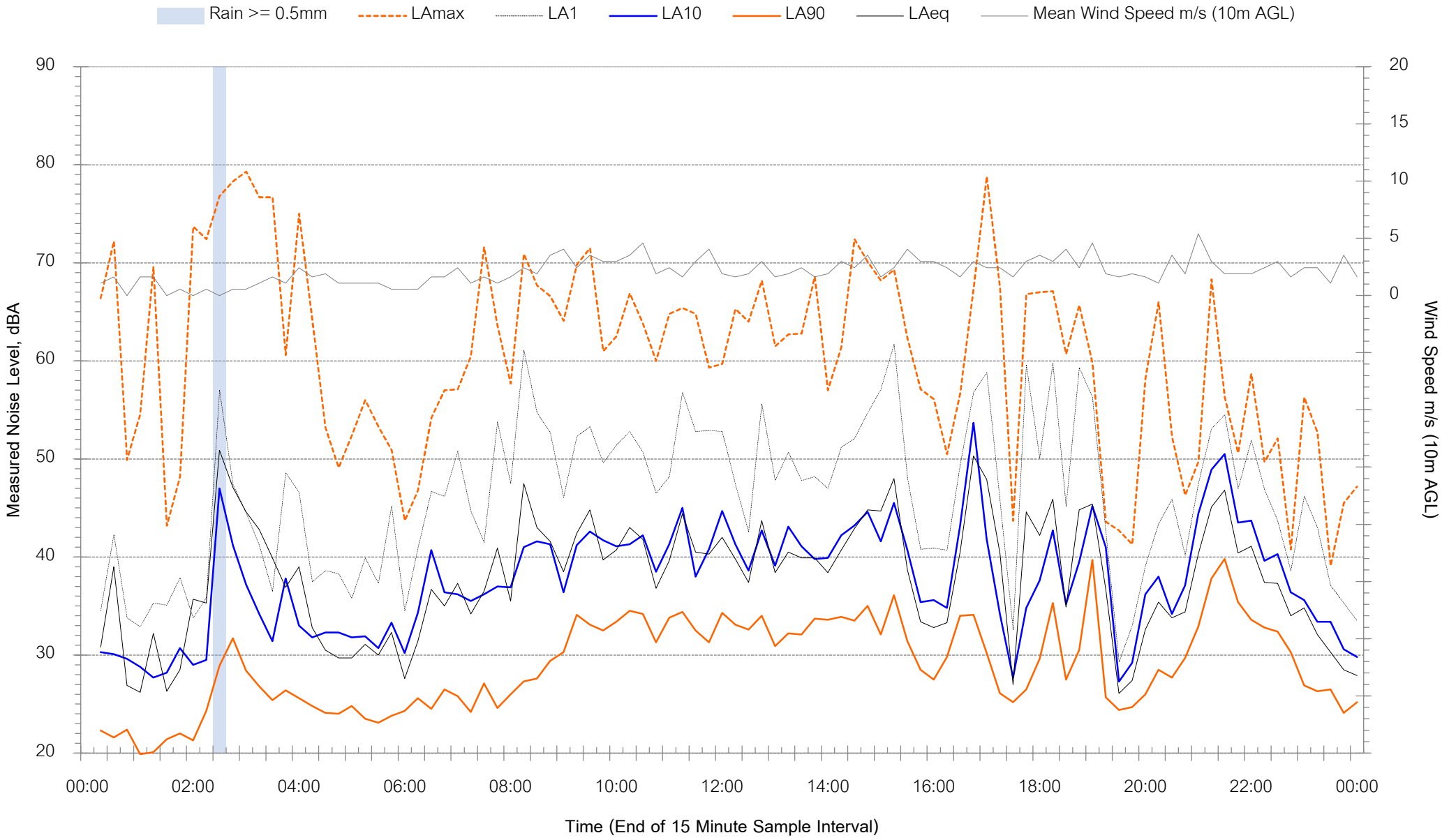
Background Noise Levels

200 Jenolan Caves Road, Hartley - Tuesday 29 March 2022



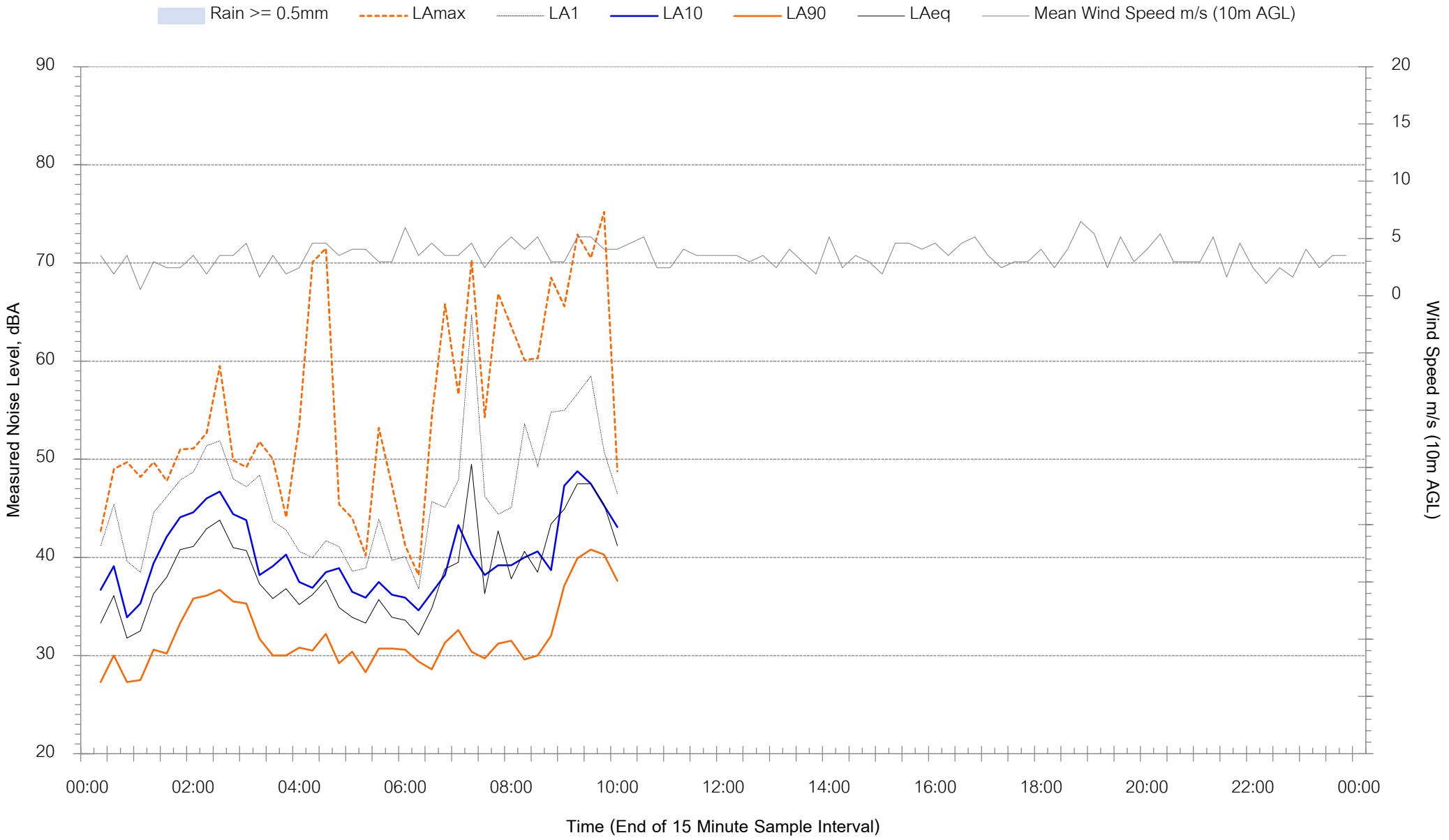
Background Noise Levels

200 Jenolan Caves Road, Hartley - Wednesday 30 March 2022



Background Noise Levels

200 Jenolan Caves Road, Hartley - Thursday 31 March 2022



Muller Acoustic Consulting Pty Ltd
PO Box 678, Kotara NSW 2289
ABN: 36 602 225 132
Ph: +61 2 4920 1833
www.mulleracoustic.com

MAC
Muller Acoustic Consulting