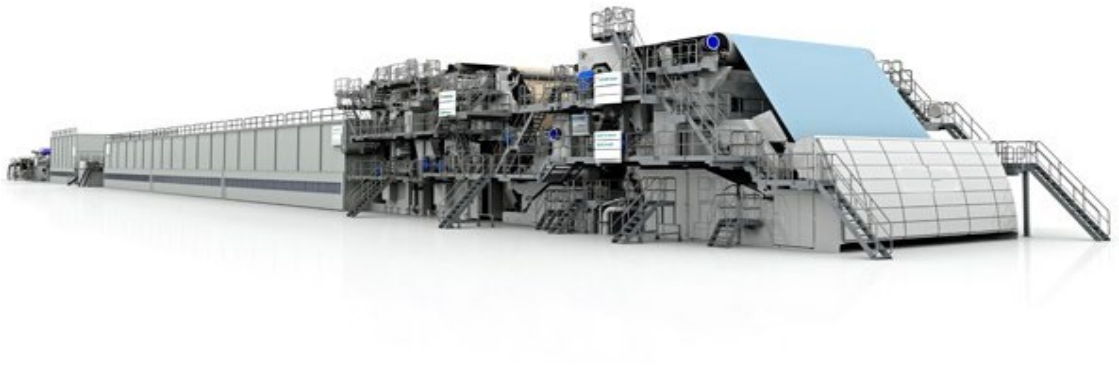
Opal Pty Ltd

Botany Paper Mill – EPL Compliance
November 2021 Quarterly noise monitoring report



18 January 2022

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Glossary

Acoustic and vibration related terms:

- **Acoustic Spectrum:** A representation of a sound sample (usually short term) of the amount of energy or sound level per frequency.
- **Ambient Noise**: Ambient noise encompasses all sound present in a given environment, being usually a composite of sounds from many sources near and far.
- **dB(A):** A unit of sound measurement which has frequency characteristics weighted so that it approximates the response of the human ear to sound waves
- **Heavy Vehicle**: A truck, transport or other vehicle with a gross vehicle weight above a specified level (for example: over 8 tonnes)
- L_{A90}: Is the noise level that is exceeded 90 per cent of the measurement time. This parameter is commonly referred to as the background noise level
- L_{Aeq}: Noise level that represents the energy average noise from the source during a specified time period, and is the equivalent continuous sound pressure level for a given period
- $L_{Aeq(15hr)}$: The Leq noise level for the period from 7 am to 10 pm.
- $L_{Aeq(9hr)}$: The Leq noise level for the period from 10 pm to 7 am.
- **NCA**: Noise Catchment Area. Grouping dwellings or receivers together in terms of similar noise environment.
- **Noise barrier**: Generally a wall or an earth mound that obstructs or restricts the passage of sounds waves from a noise source
- **Noise Logger**: A data logging (data and audio in some cases) which records noise. Usually used for unattended noise monitoring of background or ambient noise.
- **NML**: Noise Management Level as detailed in the NSW Interim Construction Noise Guideline. The NML is the noise goal for construction activities.
- **Octave Bands**: Sounds that contain energy over a wide range of frequencies are divided into sections called bands. A common standard division is in 10 octave bands identified by their center frequencies 31.5, 63, 250, 500, 1000, 2000, and 4000 Hz
- **RBL**: Rating Background Level is the overall single figure background level representing each assessment period over the whole monitoring period. The RBL is used for determining the appropriate construction noise criteria.
- **RNP**: Road Noise Policy (OEH, 2011)
- **Sound Level Meter**: An instrument consisting of a microphone, amplifier and data analysis package for quantifying and measuring noise.
- **Sound Power Level** (Lw): Sound power level or acoustic power level is a logarithmic measure of the sound power in comparison to a specified reference level.
- **Sound Pressure Level** (SPL or Lp): The level of noise, usually expressed in dB(A), as measured by a standard sound level meter.

1. Introduction

1.1 Background

OPAL operates a paper mill at its Botany site in Sydney, NSW. The paper mill is subject to operational noise conditions set out in the Ministers Conditions of Approval (MCoA) (including subsequent modifications) and the Environment Protection Licence (EPL) No. 1594.

As part of the EPL, there is a requirement to undertake quarterly monitoring at receivers surrounding the site to show compliance with set noise limits. This report covers the November 2021 – January 2022 quarter. At the time of monitoring, the B9 paper machine was operating at typical production capacity.

1.2 Objective

This report addresses operational licence conditions relating to measurements of the quarterly monitoring of the noise environment around the Opal site, i.e. Condition M6.1 and M6.2 of EPL 1594. These require:

- M6.1 The licensee must undertake noise monitoring at least once every three months to check compliance with the noise limits specified in Condition L4.1.
- M6.2 All monitoring required by this licence must be undertaken in accordance with Australian Standard 2659.1 – 1998: Guide to the use of sound measuring equipment – Portable sound level meters, or any revisions of that standard which may be made by Australian Standards Authority, and the compliance monitoring guidance provided in the NSW Industrial Noise Policy.

1.3 Operational noise limits

Operational noise limits for the new Opal Paper Mill are detailed in condition L4.1 of EPL 1594 and Condition 10 of the MCoA. These have been replicated in **Table 1**.

Since the inception of the monitoring program dating back to as early as 2012, the same receiver locations have been used. This last noise monitoring survey only had access to 5 locations with the residence located at R3 (Murrabin Avenue) no longer available for survey access.

Table 1 Operational noise limits

ID	Location	Day $L_{Aeq,15min}$, dB(A)	Evening $L_{Aeq,15min}$, dB(A)	Night $L_{Aeq,15min}$, dB(A)	Night L_{Amax}, dB(A)
R1	Corner of McCauley Street and Australia Avenue	46	45	43	55
R2	Australia Avenue	45	45	43	55
R3*	Murrabin Avenue*	46	45	43	55
R4	Partanna Avenue	42	41	41	55
R5	Corner of Partanna Avenue and Moorina Avenue	42	42	39	55
R6	Moorina Avenue	43	43	39	55

*Receiver location no longer accessible

Regular quarterly monitoring surveys have demonstrated that direct measurement of Opal's contribution to the noise environment is not possible because noise emissions from the site are generally lower than the ambient measured L_{Aeq} noise levels, which masks the actual noise from the Opal site.

Ambient noise levels measured at the receiver locations using the L_{Aeq} noise parameter are therefore not a true representation of noise from the Opal site but a combination of influences from all local noise sources.

The influence from Opal on the local noise environment may be better described using the L_{A90} statistical parameter. This additional parameter has been presented in the results summary to be considered in conjunction with the L_{Aeq} noise level when assessing compliance of the Opal site.

During the night time periods fewer extraneous noise influences are present providing lower overall noise levels in the area. Under these conditions constant noise sources such as Opal operations are more likely to be apparent in the background noise levels noting that the emission levels from the site remain relatively constant throughout the day, evening, and night time.

Maximum noise levels from the site are also captured under the EPL requiring a cap on noise emissions of L_{Amax} 55 dB(A) at all locations during the night time period. An L_{Amax} parameter for the monitoring period simply records the loudest noise level measured during the night time assessment period and does not distinguish the source of noise.

Maximum noise events are not generally observed from the Opal site unless equipment has broken down or maintenance activities are underway and neither of these scenarios reflect normal operation of the plant.

Maximum noise levels recorded during these surveys are, therefore, more representative of the broader noise environment which makes the distinction between external sources and Opal's emissions difficult. Furthermore, maximum noise levels measured during the monitoring surveys often, if not always, exceed the maximum noise limit from the site hindering the identification of Opal's contribution.

The addition of the L_{A1} noise level statistic is proposed in conjunction with the L_{Amax} parameter to compliment the maximum noise profile and provide a better representation of environmental noise influences.

An L_{A1} noise level above the night time criteria would not necessarily indicate an exceedance of the Opal noise goals however, long term measurements of this parameter may be useful in identifying changes to the local noise profile which can then be compared to any changes in functional operation within the Opal site.

2. Existing environment

The site is located on the boundary of an industrial area around Port Botany and is bordered to the north and east of the site by residential properties as illustrated in Figure 2-1. The local noise environment beyond the Opal boundary varies throughout the day depending on the contribution of sources including trucks on Botany Road, aircraft, port noise, local business activities on McCauley Road, and local traffic movements.

Noise emissions from the paper mill do not vary significantly as the operation of the plant has been demonstrated to be consistent and reliable.

The source of maximum noise level events in the area are typically from the local road network and aircraft fly-overs. The nature of the processes within the Opal site means that there are typically no maximum noise level events associated with production activities. The exception to this may occur when equipment is not functioning properly during a breakdown or during maintenance activities, both of which are not common scenarios.

The influence of weather conditions on noise levels are apparent as seasonal variations which are forming data trends in the long-term monitoring for the local area.

2.1 Monitoring limitations

The local noise environment has been a feature of the area for many years and the total measured noise levels at monitoring locations are only partly due to Opal site operations. Direct monitoring of Opal noise emissions over time has demonstrated that specific contribution from Opal cannot be provided with any certainty due to the influence of other audible noise sources adjacent to the site.

2.2 Receiver locations

The EPL specifies six locations for quarterly monitoring. These are illustrated in Figure 2-1 and described further in **Table 2**. The receiver at R3 is not currently being monitored due to access restrictions. The receiver at R4 monitoring was not collected due to a failure of the noise logger.

Figure 2-1 Site location and compliance monitoring locations

Table 2 Description of monitoring locations

Monitoring location	Description
R1	This location has a large degree of acoustic shielding from local noise sources due to the development of a warehousing facility on the corner of McCauly Avenue and Australia Avenue. The noise environment at this location is heavily influenced by traffic on McCauley Street, Perry Street and Beauchamp Road. Local industrial noise from Raymond Avenue is also audible during the day and night time.
R2	This receiver is located opposite the bottom apex of the Purcell Park on Australia Avenue. At this location the residents have a clear line of sight to the paper mill. Noise walls have less effectiveness for the residences due to the large separation distances. Noise from port activities also has less shielding from the Opal site. Background noise levels are heavily dominated by road traffic noise from all sources.
R3*	This receiver is located adjacent to Purcell Park on Murrabin Avenue. At this location the residents have a partial line of sight to the paper mill although they are located closer to the boundary noise wall than receivers at R2. Noise from port activities are partially shielded by the Opal site. Background noise levels are heavily dominated by road traffic, aircraft and industrial noise from all surrounding sources.
R4	The receivers at Partanna Avenue are physically closest to the Opal site but have the benefit of significant shielding of operational activities from the noise barrier located on the northern boundary. Road traffic noise contributes to background noise for this receiver. Some construction work was in progress at the park adjacent to the property during the monitoring period.
R5	Furthest location from the Opal site, a higher degree of influence from Botany Road, Bunnerong Road and the port. Noise from the Opal site is generally inaudible at this location although significant noise from the Opal site has been observed here during adverse meteorological conditions.
R6	In this location receivers are well shielded from operational noise from the Opal site due to the presence of the noise barrier and No. 8 paper machine building. Noise levels at this location are heavily influenced by local bird colonies, port noise, traffic on Botany road and traffic on Bunnerong Road. Construction of industrial units on the adjacent vacant land (Hanger block) is well underway at the time of writing this report.

*Receiver location currently unavailable

3. Operational noise monitoring

3.1 Method

Operational noise monitoring for the November survey period was completed between 8 December and 15 December 2021, using automatic noise loggers deployed at five representative locations.

Monitoring was performed using Acoustic Research Laboratories brand Ngara Type 1 noise loggers, set to A-weighting, fast-response, and recording noise levels continuously over consecutive periods at each location. This survey period coincided with typical continuous operations of paper mill.

Weather data obtained from the Automatic Weather Station (AWS) maintained by the Bureau of Meteorology at Sydney Airport. Weather conditions for the monitoring period have been plotted showing daily trends in wind direction and speed which are presented in Figure 3-1.

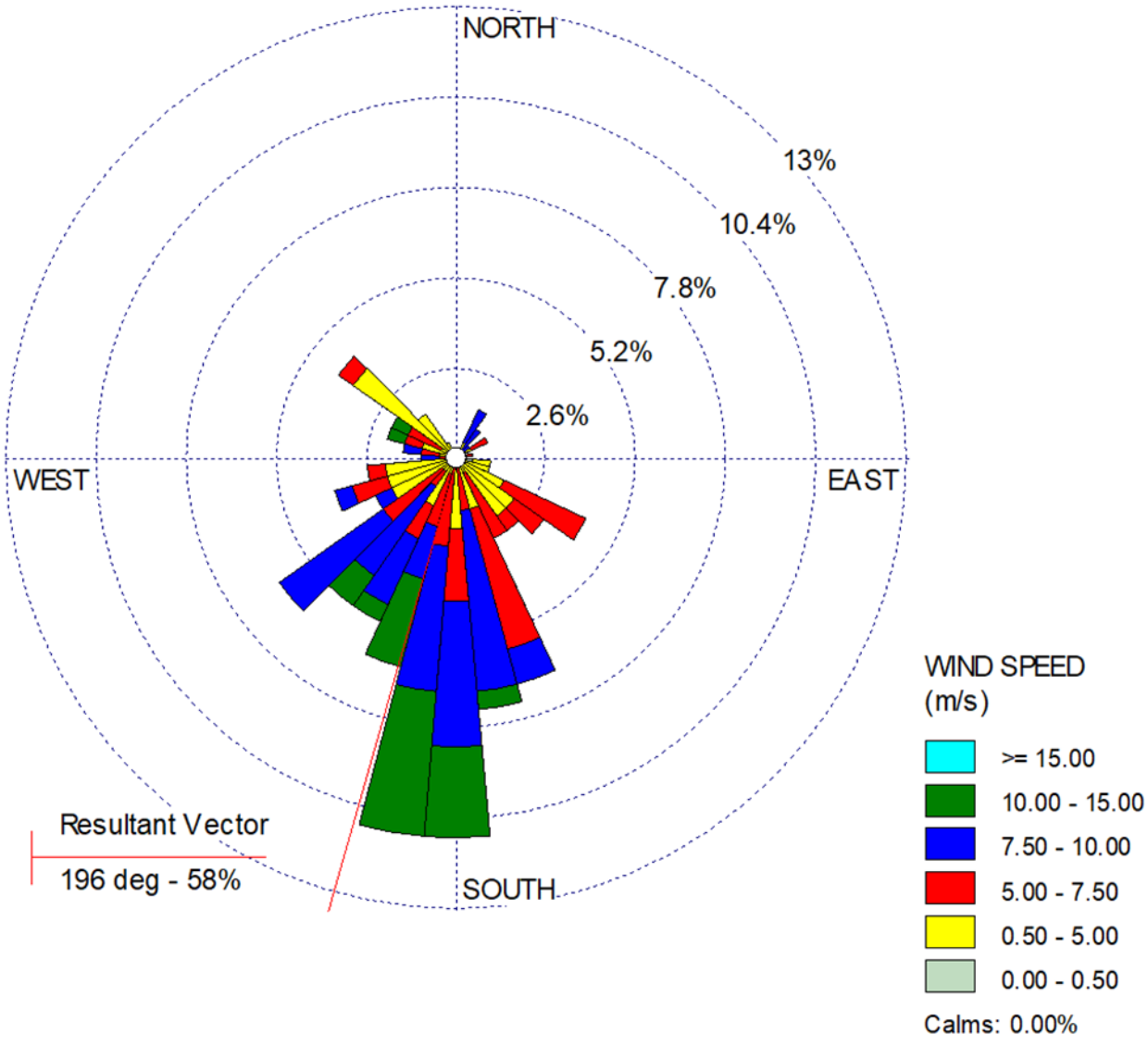


Figure 3-1 Wind speed and direction during monitoring period (8 December – 15 December 2021, source BoM 2021)

The plotted data from the wind rose indicates that wind speeds during the monitoring were only at or below 5 m/s for about 30% of the time (see Figure 3-2). The resultant wind vector for the monitoring period is concentrated in the south west. Winds from this general direction are likely to increase the noise level at receivers north of Opal and Port Botany.

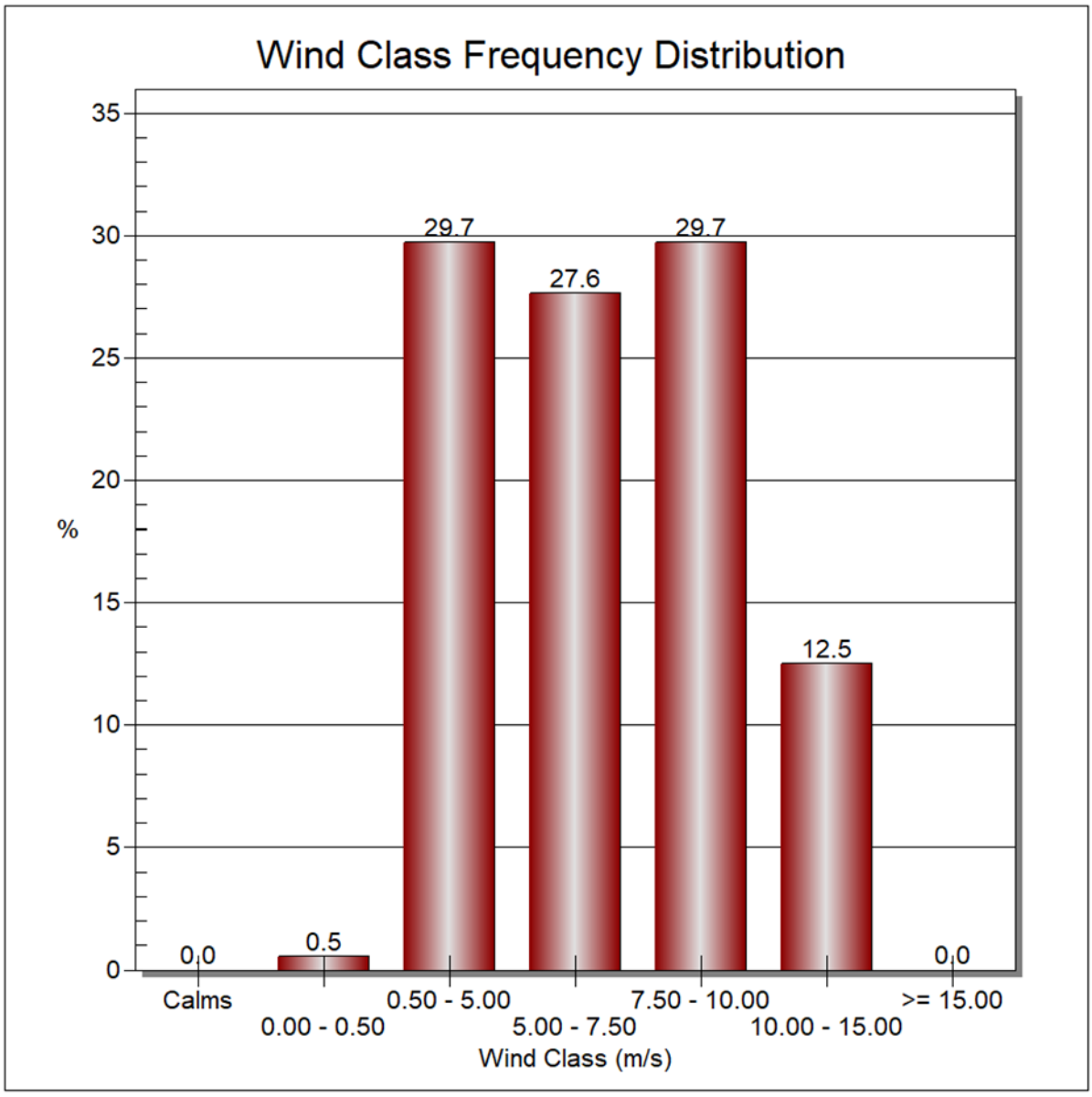


Figure 3-2 Wind speed frequency distribution over monitoring period

3.2 Monitoring results

The reported L_{Amax}, L_{A1}, L_{Aeq}, and L_{A90} noise levels are summarised from a 24 hour period of monitoring and are affected by all noise sources in the local area such as road traffic, loud short-term noise (birds), aircraft, and local industry and heavy vehicle movements.

During the November 2021 quarterly noise survey, the paper mill operated normally.

Measured L_{A90} and L_{Aeq} noise levels for the night-time period during the December 2021 monitoring survey are generally similar to the measured noise levels from previous surveys at corresponding times of the year.

Night-time periods were assessed to provide additional information of the paper mill noise contributions using the median L_{A90} noise levels as a benchmark as rating background noise levels provide a good proxy for L_{Aeq} levels from steady state noise emitters.

The measured levels during the latest round of noise monitoring indicate that the overall background environmental noise levels were within 1-2 dB of the L_{Aeq} 15min noise criteria at each location, with the exception of R2. At location R2, background noise levels were elevated for the first five days of monitoring, with the last two days indicating background noise levels around the night time criteria level, similar to other locations.

The most recent round of compliance measurements has been added to the historical data collected during compliance noise surveys, providing about 8 years of seasonal data. This data includes measurements of the noise environment with the Opal site operational over the whole monitoring period.

The results of monitoring survey for November 2021 have been graphed and are shown in Appendix A. The parameters of L_{Aeq} and L_{A90} presented in Table 3 are used to provide information for comparison against the project criteria and the background noise environment.

The L_{Amax} noise levels for the December noise monitoring period are consistent with L_{Amax} noise levels from previous surveys. Measured L_{Amax} and L_{A1} noise levels during the monitoring periods are higher than the project L_{Amax} noise goals however, these levels do not relate to the operation of the Opal site.

The data in Figure 3-3 and Figure 3-4 provides a chronological progression of the measured noise levels during shutdown and normal operations summarised for monitoring from 2012 to present.

Historical background noise levels from Figure 3-3 and Figure 3-4 are not directly related to the L_{Aeq} criteria from the EPL; however, they provide an indication of the increase in background environmental noise levels corresponding to the regular noise surveys undertaken for the Opal site.

Table 3 Summary of noise monitoring Day

Time and date	Profile of Noise Environment - Noise Monitoring Location											
	R1		R2		R3		R4		R5		R6	
Daytime: 7:00:00 AM to 6:00:00 PM	**L_{90} (10th Percentile)**	**L_{Aeq}**	**L90 (10th Percentile)**	**L_{Aeq}**	**L_{90} (10th Percentile)**	**L_{Aeq}**	**L_{90} (10th Percentile)**	**L_{Aeq}**	**L_{90} (10th Percentile)**	**L_{Aeq}**	**L_{90} (10th Percentile)**	**L_{Aeq}**
Wednesday 8 December 2021	46	71	50	69	-	-	-	-	43	68	32	71
Thursday 9 December 2021	45	57	48	54	-	-	-	-	43	55	48	58
Friday 10 December 2021	46	57	48	57	-	-	-	-	46	56	50	60
Saturday 11 December 2021	50	55	52	56	-	-	-	-	48	55	52	60
Sunday 12 December 2021	46	52	49	53	-	-	-	-	43	51	47	55
Monday 13 December 2021	43	60	44	52	-	-	-	-	40	52	46	59
Tuesday 14 December 2021	40	50	39	49	-	-	-	-	39	49	44	60
Wednesday 15 December 2021	40	63	39	50	-	-	-	-	41	52		
Median	**45**	**57**	**46**	**54**	**-**	**-**	**-**	**-**	**43**	**53**	**47**	**60**

Evening: 6:00:00 PM to 10:00:00 PM	**L_{90} (10th Percentile)**	**L_{Aeq}**	**L90 (10th Percentile)**	**L_{Aeq}**	**L_{90} (10th Percentile)**	**L_{Aeq}**	**L_{90} (10th Percentile)**	**L_{Aeq}**	**L_{90} (10th Percentile)**	**L_{Aeq}**	**L_{90} (10th Percentile)**	**L_{Aeq}**
Wednesday 8 December 2021	42	52	47	52	-	-	-	-	41	48	42	50
Thursday 9 December 2021	43	53	45	52	-	-	-	-	40	49	45	52
Friday 10 December 2021	49	53	52	55	-	-	-	-	48	53	50	55
Saturday 11 December 2021	48	53	51	54	-	-	-	-	45	53	49	56
Sunday 12 December 2021	45	52	49	53	-	-	-	-	41	50	45	53
Monday 13 December 2021	41	50	42	49	-	-	-	-	37	50	42	51
Tuesday 14 December 2021	38	48	39	48	-	-	-	-	36	46	41	57
Wednesday 15 December 2021	44	56	41	53	-	-	-	-	-	-	-	-
Median	**43**	**52**	**46**	**52**	**-**	**-**	**-**	**-**	**41**	**50**	45	53

Time and date	Profile of Noise Environment - Noise Monitoring Location											
	R1		R2		R3		R4		R5		R6	
Night 10:00:00 PM to 7:00:00 AM	L_{90} (10th Percentile)	L_{Aeq}	L90 (10th Percentile)	L_{Aeq}	L_{90} (10th Percentile)	L_{Aeq}	L_{90} (10th Percentile)	L_{Aeq}	L_{90} (10th Percentile)	L_{Aeq}	L_{90} (10th Percentile)	L_{Aeq}
Wednesday 8 December 2021	38	50	46	52	-	-	-	-	39	47	37	49
Thursday 9 December 2021	41	56	48	53	-	-	-	-	39	53	42	55
Friday 10 December 2021	47	52	50	53	-	-	-	-	45	52	47	55
Saturday 11 December 2021	43	48	49	51	-	-	-	-	43	47	43	51
Sunday 12 December 2021	41	47	46	51	-	-	-	-	40	46	40	48
Monday 13 December 2021	39	44	44	49	-	-	-	-	38	46	38	46
Tuesday 14 December 2021	36	45	40	47	-	-	-	-	35	48	35	46
Wednesday 15 December 2021	36	47	38	50	-	-	-	-	-	-	-	-
Median Open	**41**	**47**	**46**	**51**	**-**	**-**	**-**	**-**	**39**	**47**	**40**	**49**

Table 4 Summary of night time maximum noise levels

Time and date	Maximum Noise Environment - Noise Monitoring Location											
	R1		R2		R3		R4		R5		R6	
Date	L_{Amax}	L_{A1}	L_{Amax}	L_{A1}	L_{Amax}	L_{A1}	L_{Amax}	L_{A1}	L_{Amax}	L_{A1}	L_{Amax}	L_{A1}
Wednesday 8 December 2021	84	65	87	63	-	-	-	-	71	64	74	68
Thursday 9 December 2021	76	74	77	64	-	-	-	-	77	69	78	69
Friday 10 December 2021	82	63	74	61	-	-	-	-	85	66	78	68
Saturday 11 December 2021	76	61	72	62	-	-	-	-	78	61	77	66
Sunday 12 December 2021	75	63	75	63	-	-	-	-	74	66	79	62
Monday 13 December 2021	70	62	80	61	-	-	-	-	75	69	77	64
Tuesday 14 December 2021	81	64	88	61	-	-	-	-	87	66	83	60
Wednesday 15 December 2021	78	67	73	63	-	-	-	-	-	-	-	-
Median Open	**76**	**64**	**75**	**62**	**-**	**-**	**-**	**-**	**77**	**66**	**78**	**66**

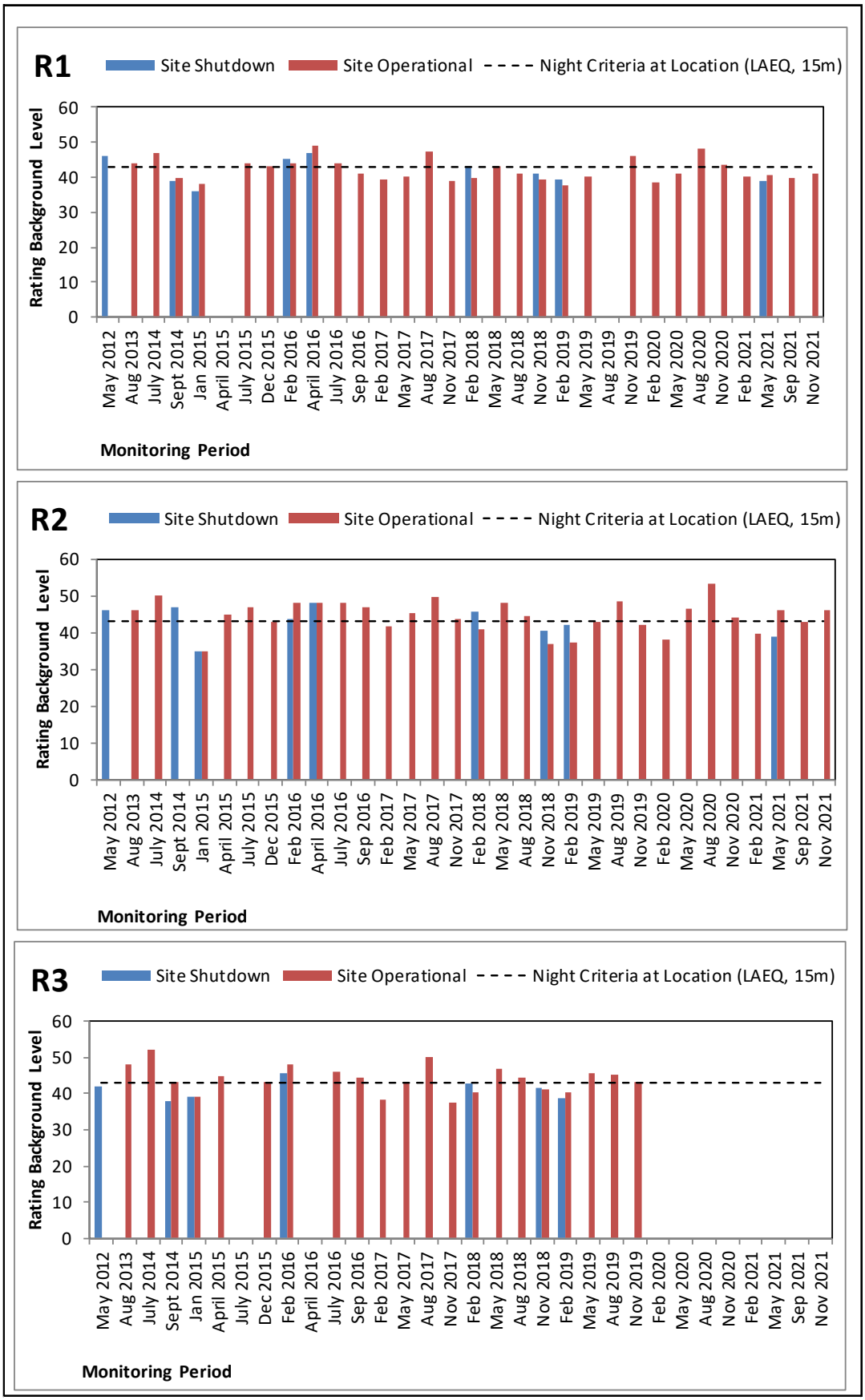


Figure 3-3: Comparison of background noise levels at R1 – R3

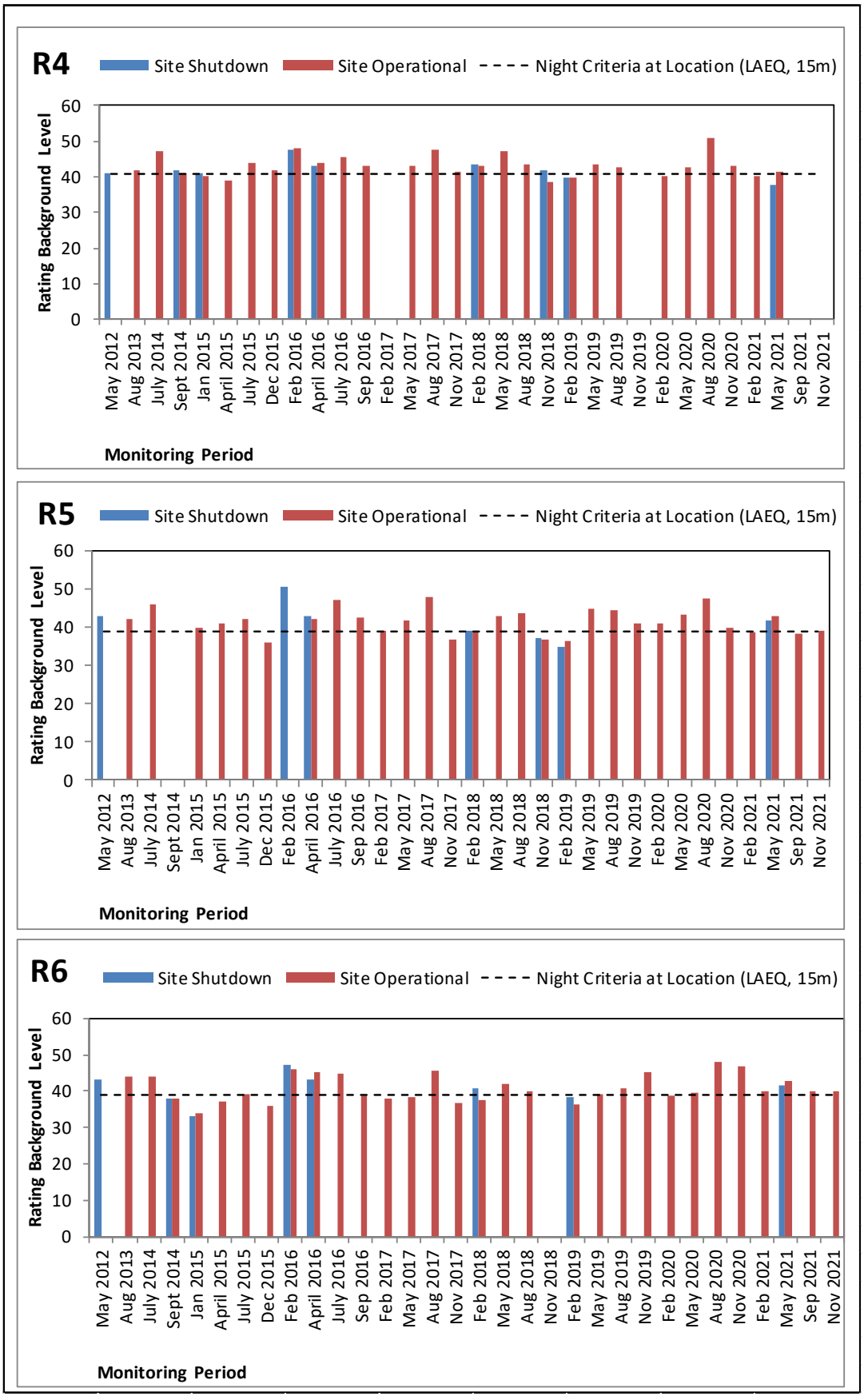


Figure 3-4: Comparison of background noise levels at R4 – R6

4. Summary

The quarterly noise survey data for the November 2021 - January 2022 period indicates that the L_{Aeq} long term measured noise levels in the vicinity of the paper mill exceeded the EPL criteria for day, evening, and night-time. The maximum (L_{A1}) recorded noise levels at each monitoring location also exceeded the EPL criteria of 55 dB(A) at all receiver locations.

In summary the November 2021 quarterly monitoring the following conclusions have been drawn:

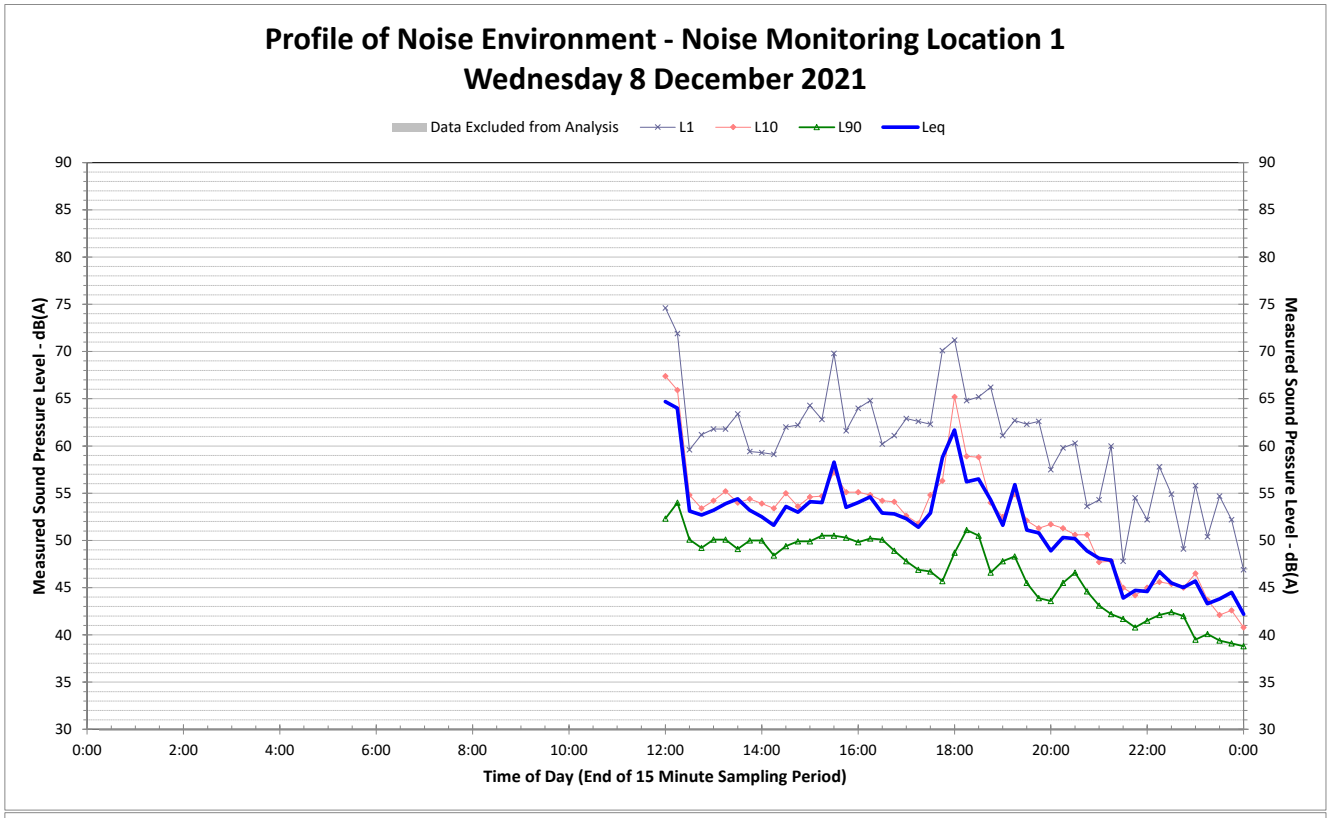
- Several years of monitoring data indicate that the ambient noise environment in the local area is a product of the combined influence of all noise sources within the Port Botany area including the Opal site when operational.

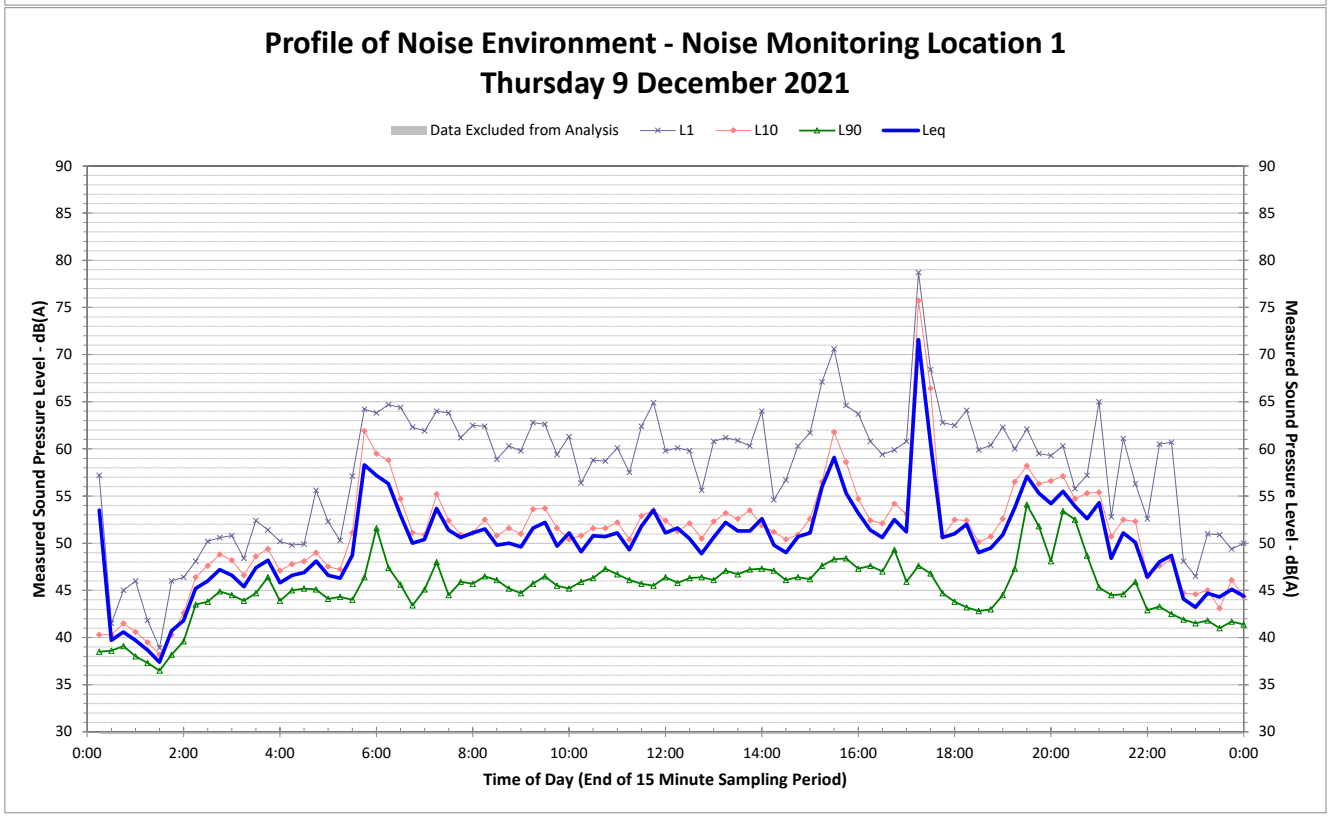
- The most recent noise monitoring results indicate that the measured L_{Aeq} noise levels are generally similar to the long-term series of data for corresponding seasonal measurement periods and the L_{A90} noise levels sit around the same level as the EPL criteria for most locations.

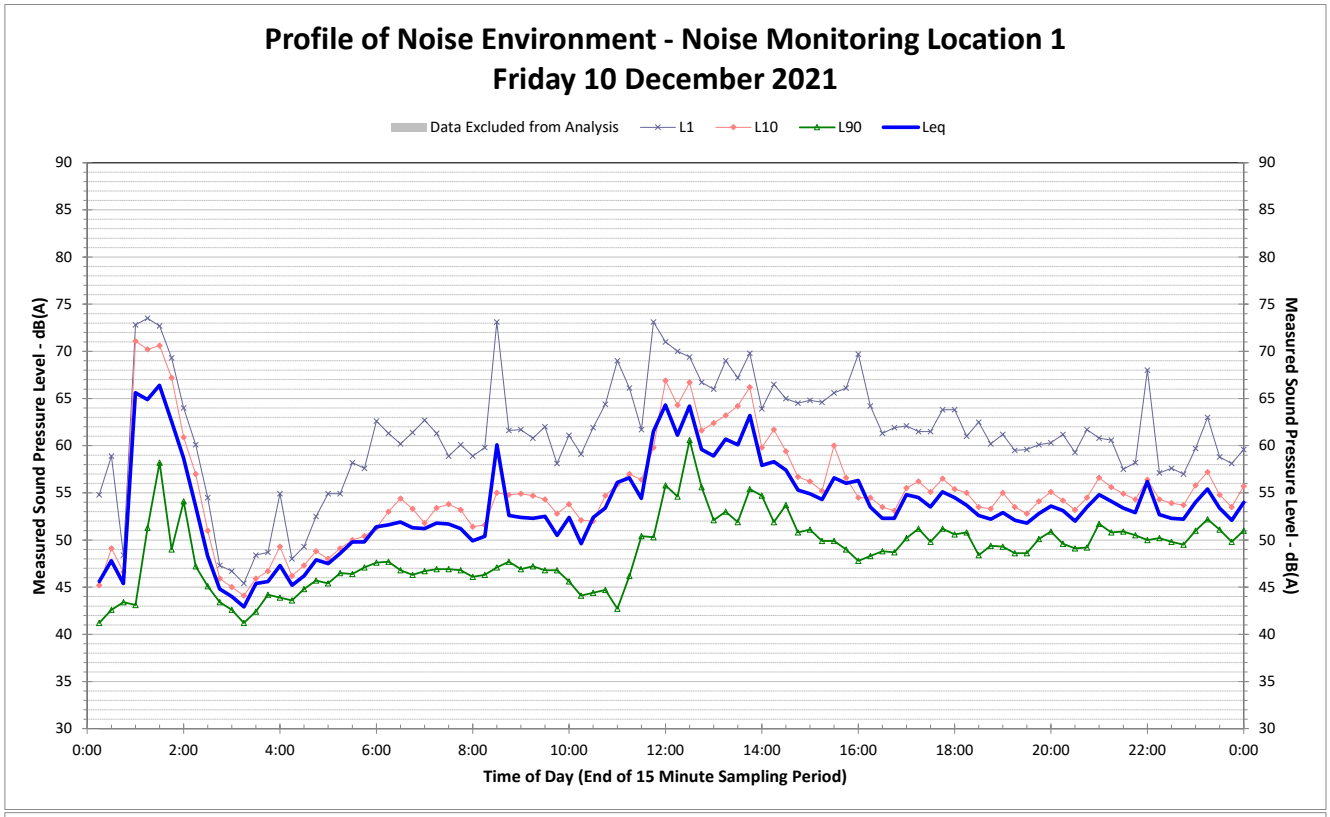
- The L_{Amax} noise levels for the November noise monitoring period are consistent with L_{Amax} noise levels from previous surveys. The L_{A1} noise levels are consistent with other monitoring periods.

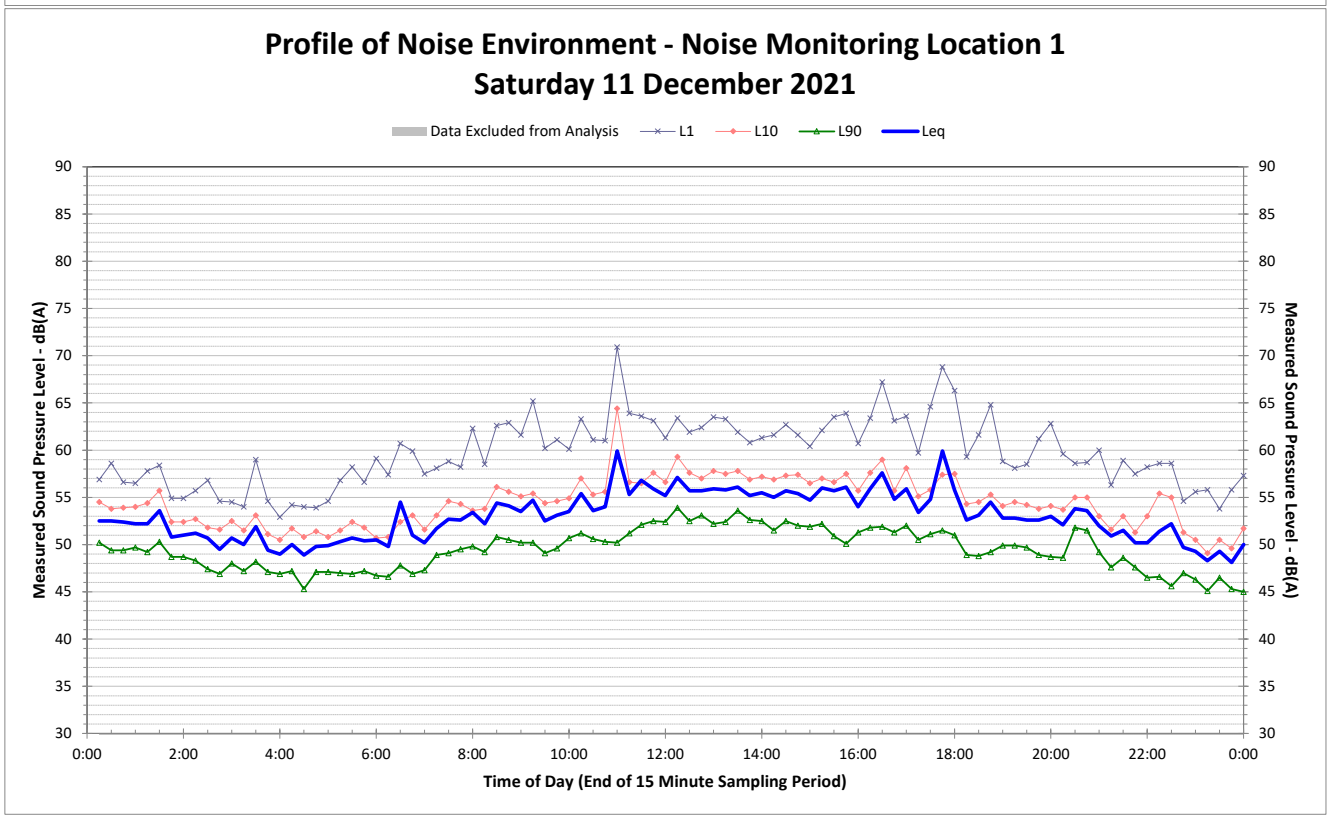
- The L_{Aeq} and L_{Amax} noise levels recorded during the survey period are higher than the EPL criteria at the monitoring locations but are not related to the operation of the Opal site.

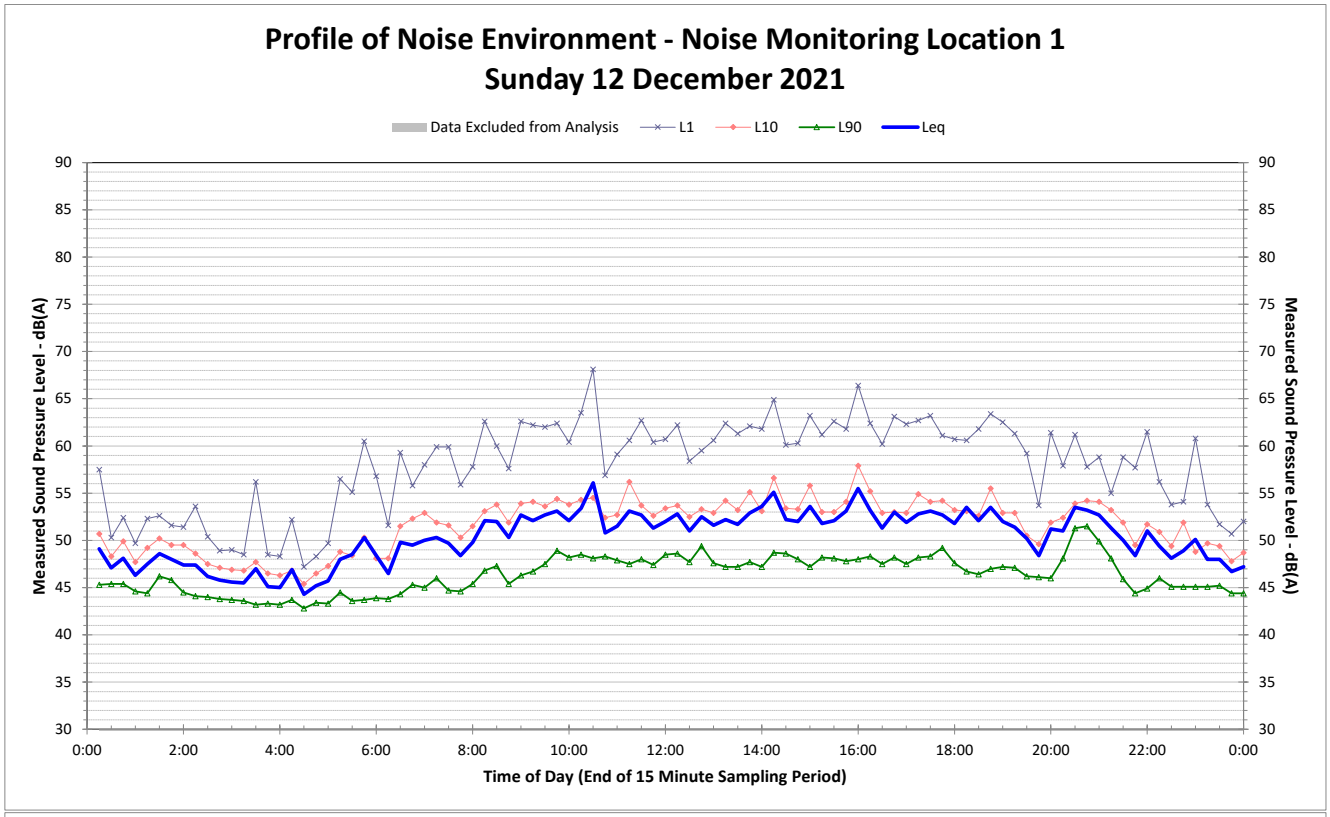
Appendix A. Noise logger graphs

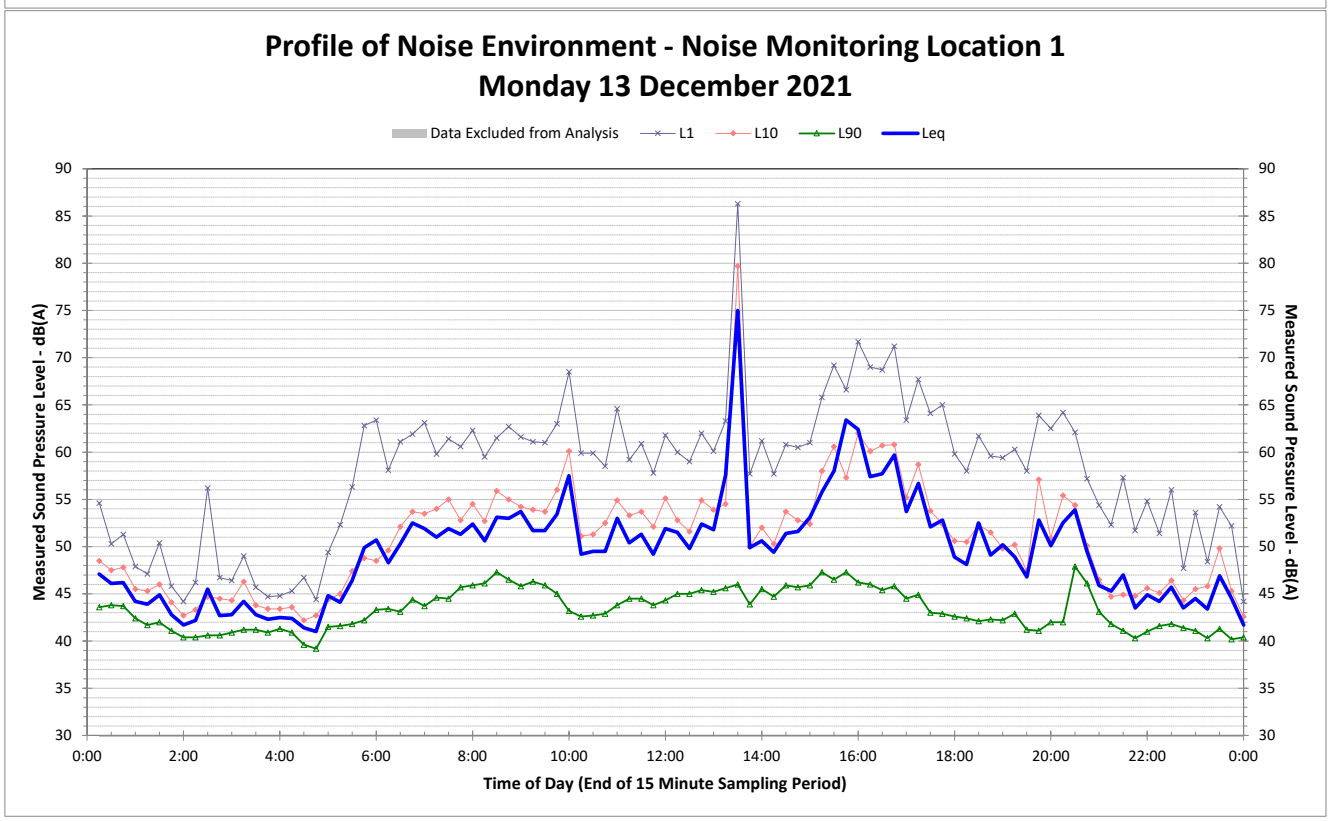


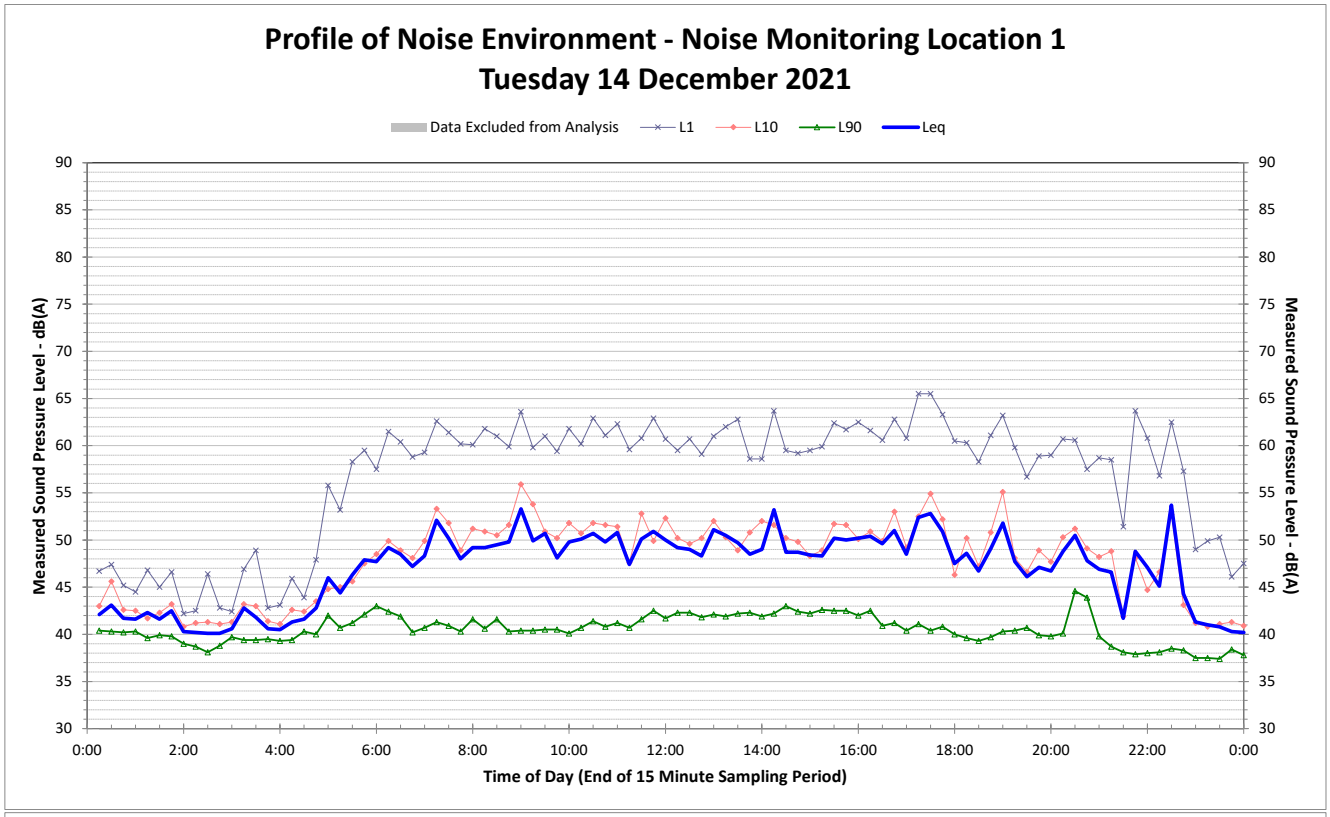



Profile of Noise Environment - Noise Monitoring Location 1
Friday 10 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)


Profile of Noise Environment - Noise Monitoring Location 1
Saturday 11 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)


Profile of Noise Environment - Noise Monitoring Location 1
Sunday 12 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)


Profile of Noise Environment - Noise Monitoring Location 1
Monday 13 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)


Profile of Noise Environment - Noise Monitoring Location 1
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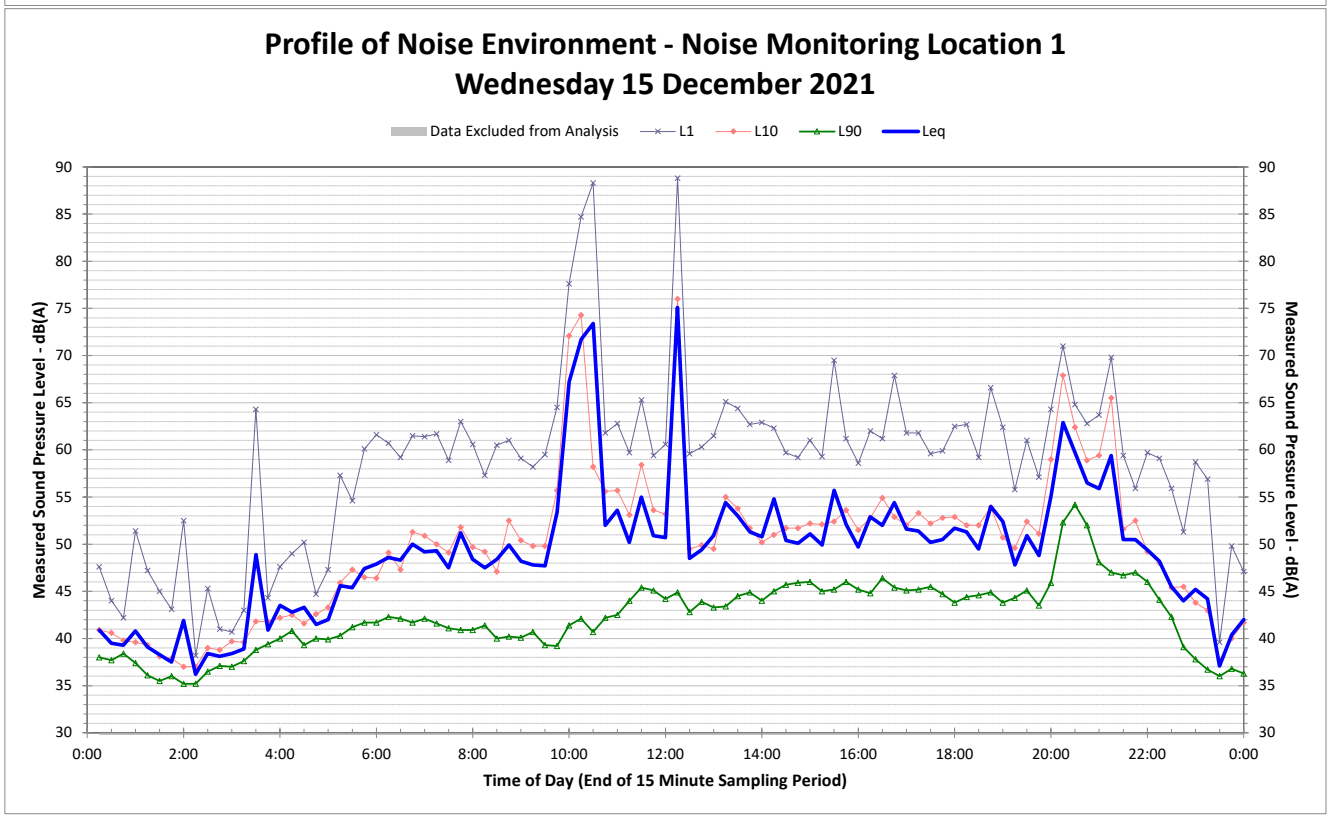
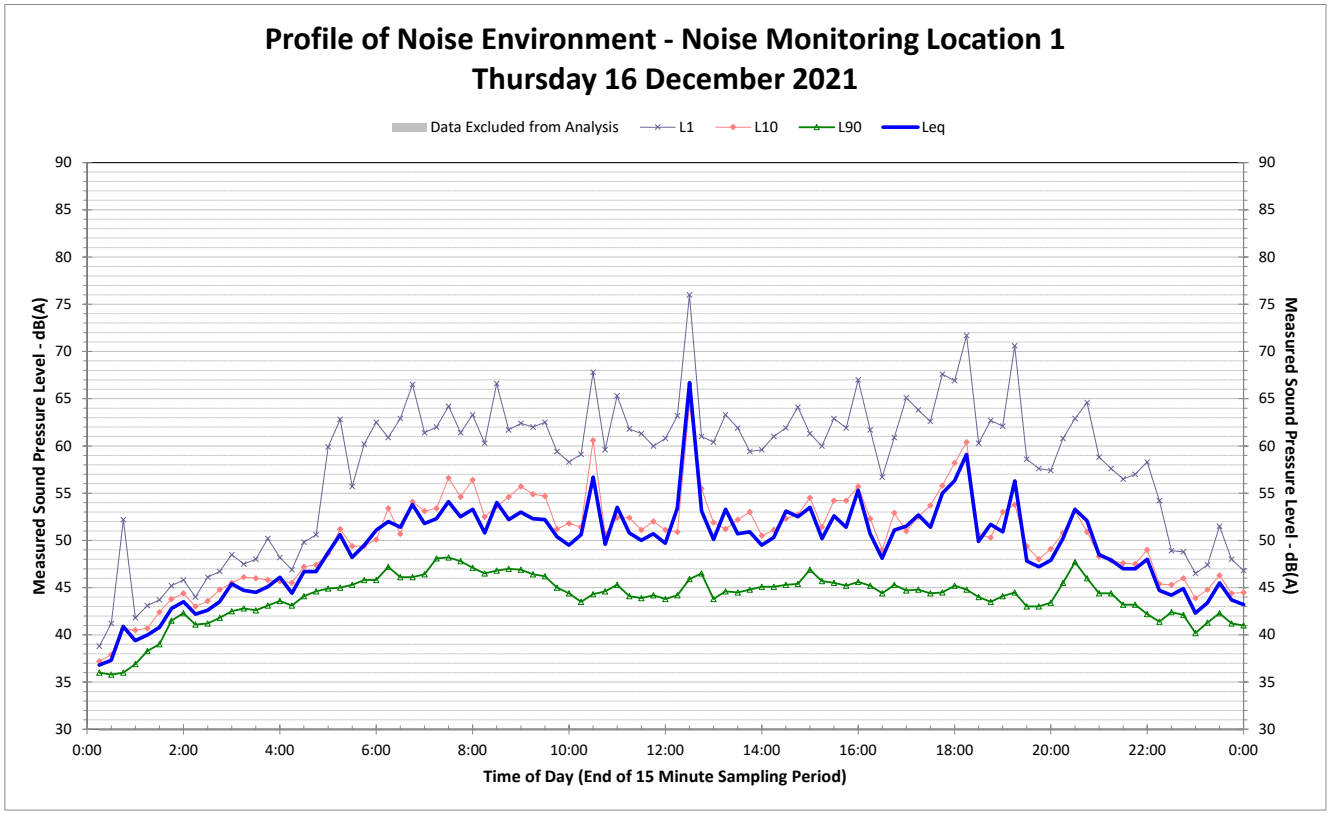
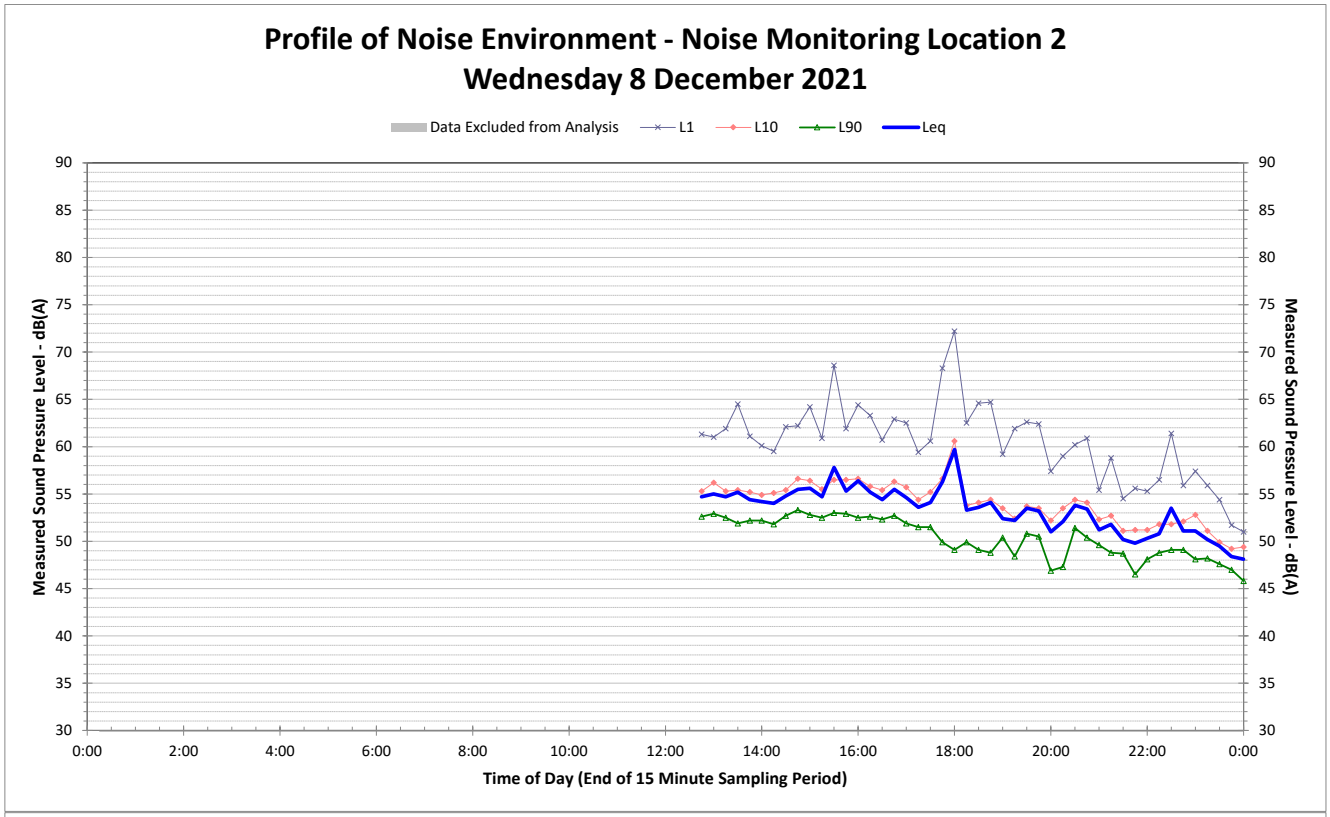
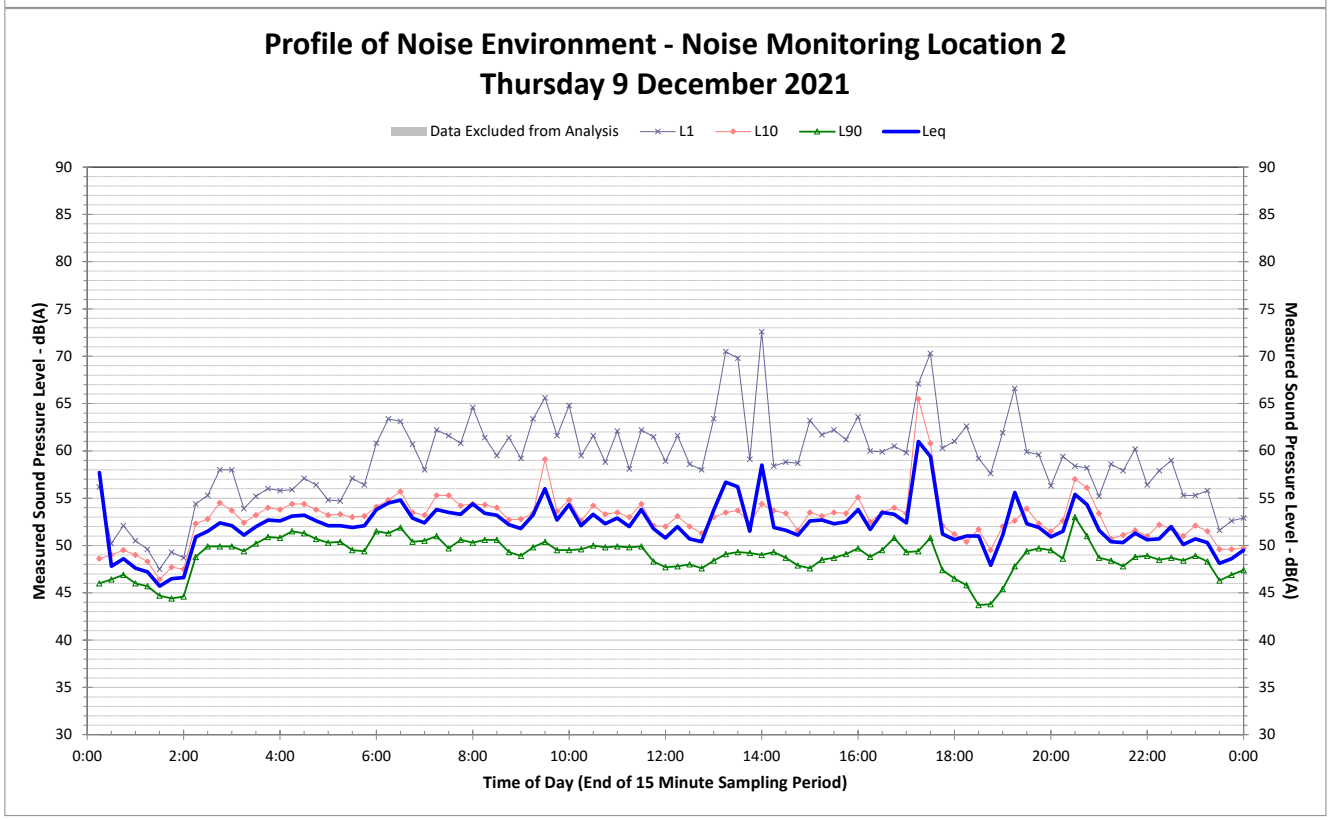
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

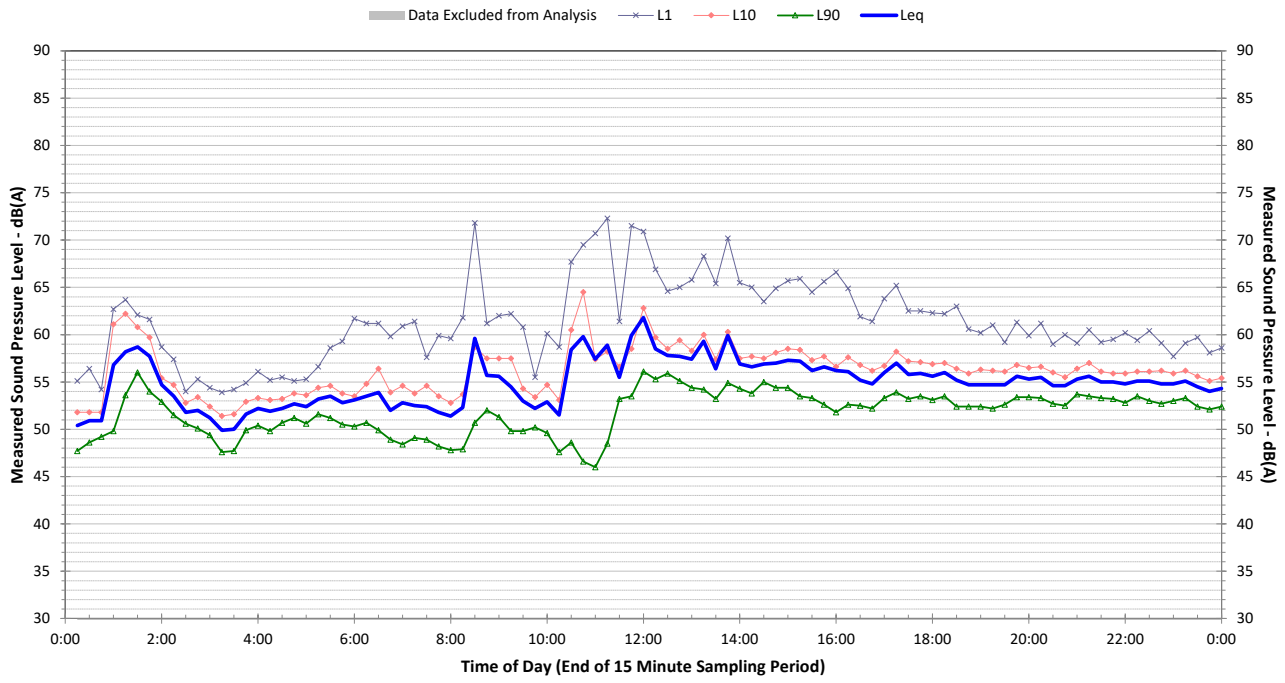

Profile of Noise Environment - Noise Monitoring Location 1
Wednesday 15 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)


Profile of Noise Environment - Noise Monitoring Location 1
Thursday 16 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Measured Sound Pressure Level - dB(A)
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
0:00
Time of Day (End of 15 Minute Sampling Period)

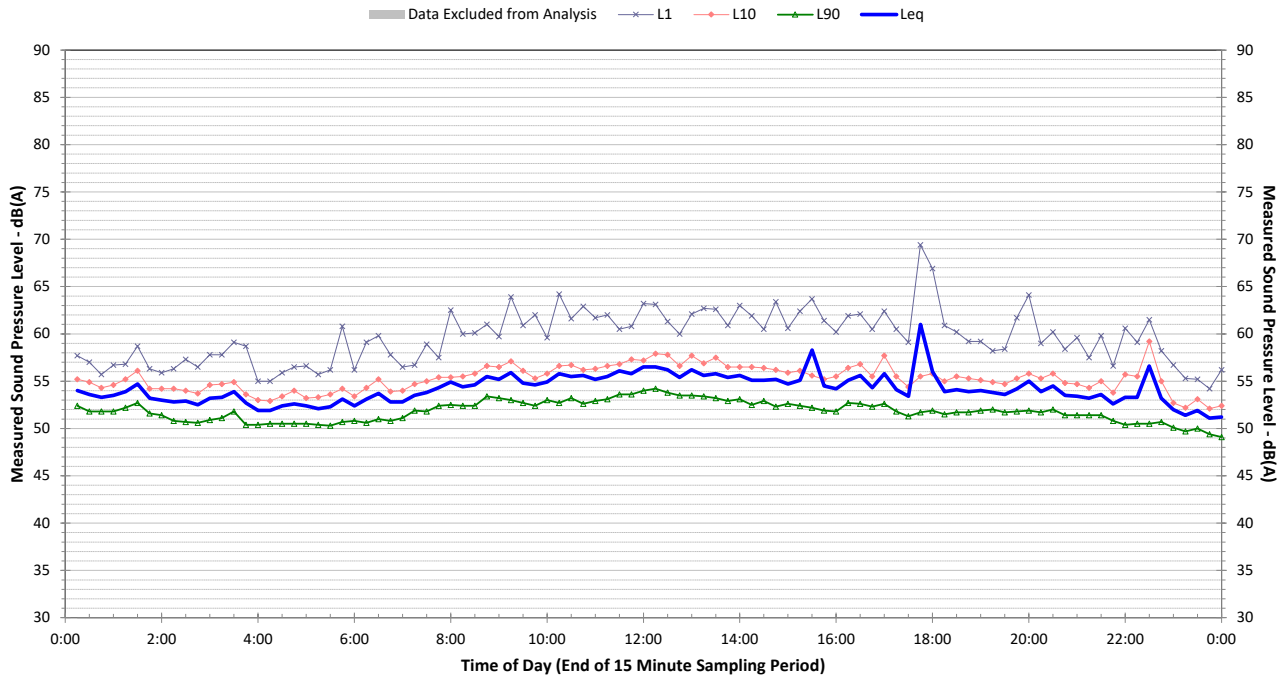

Profile of Noise Environment - Noise Monitoring Location 2
Wednesday 8 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

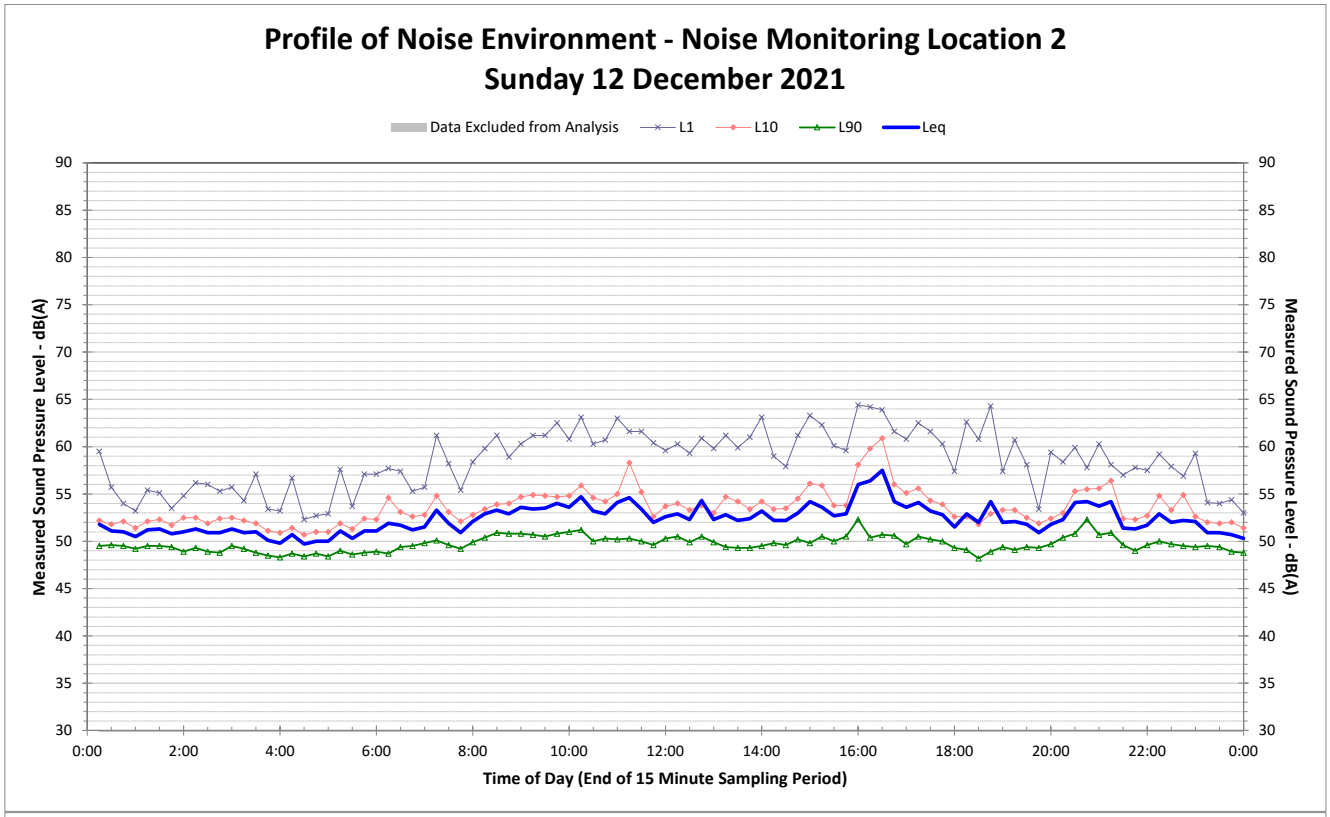

Profile of Noise Environment - Noise Monitoring Location 2
Thursday 9 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

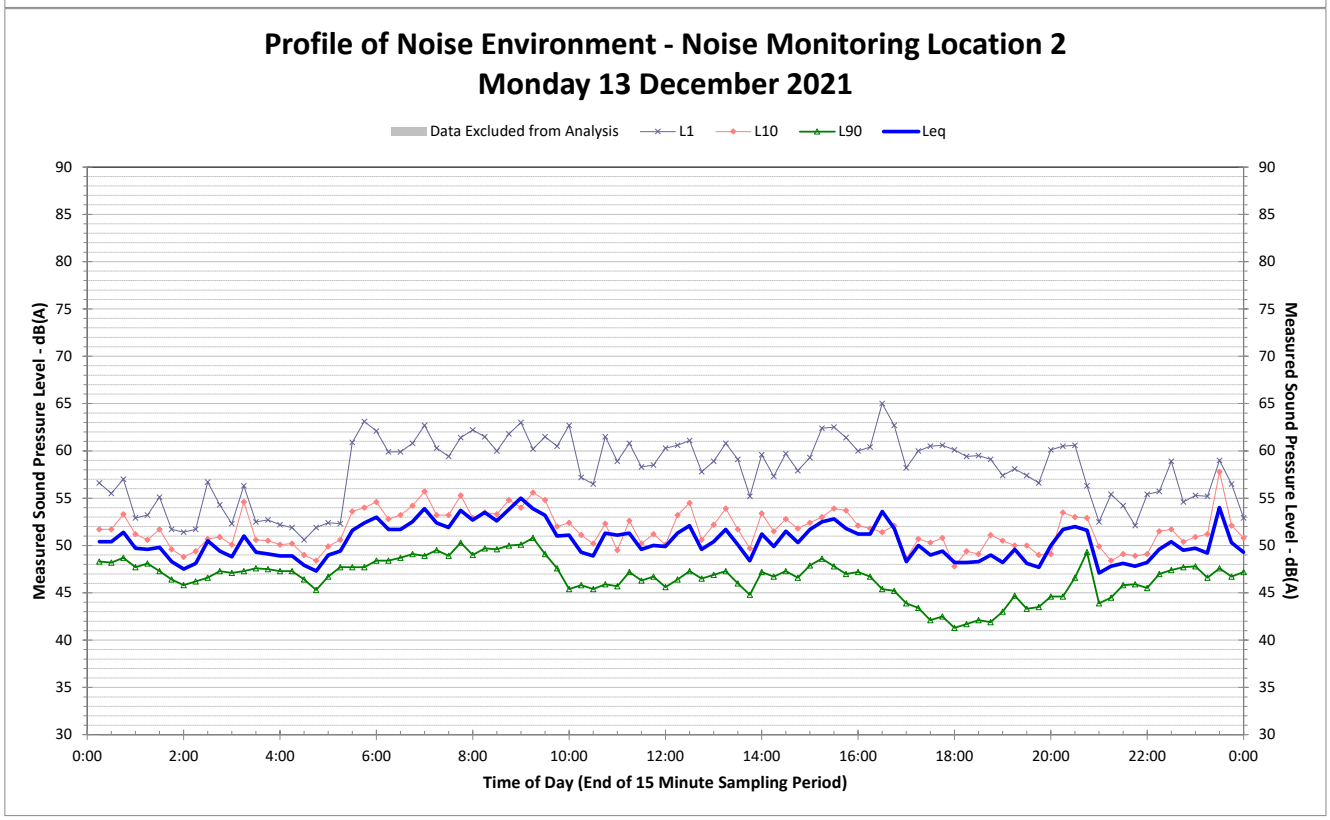
Profile of Noise Environment - Noise Monitoring Location 2
Friday 10 December 2021

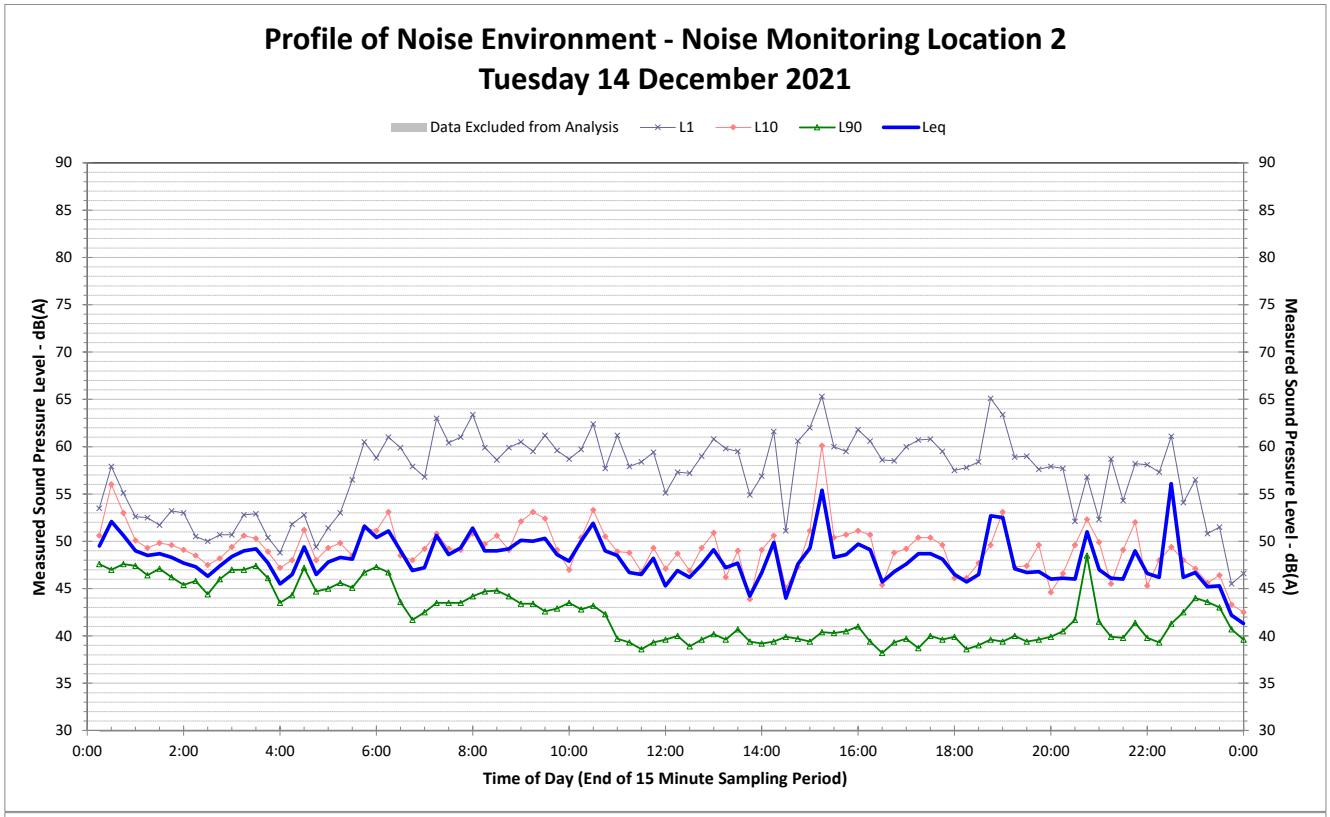


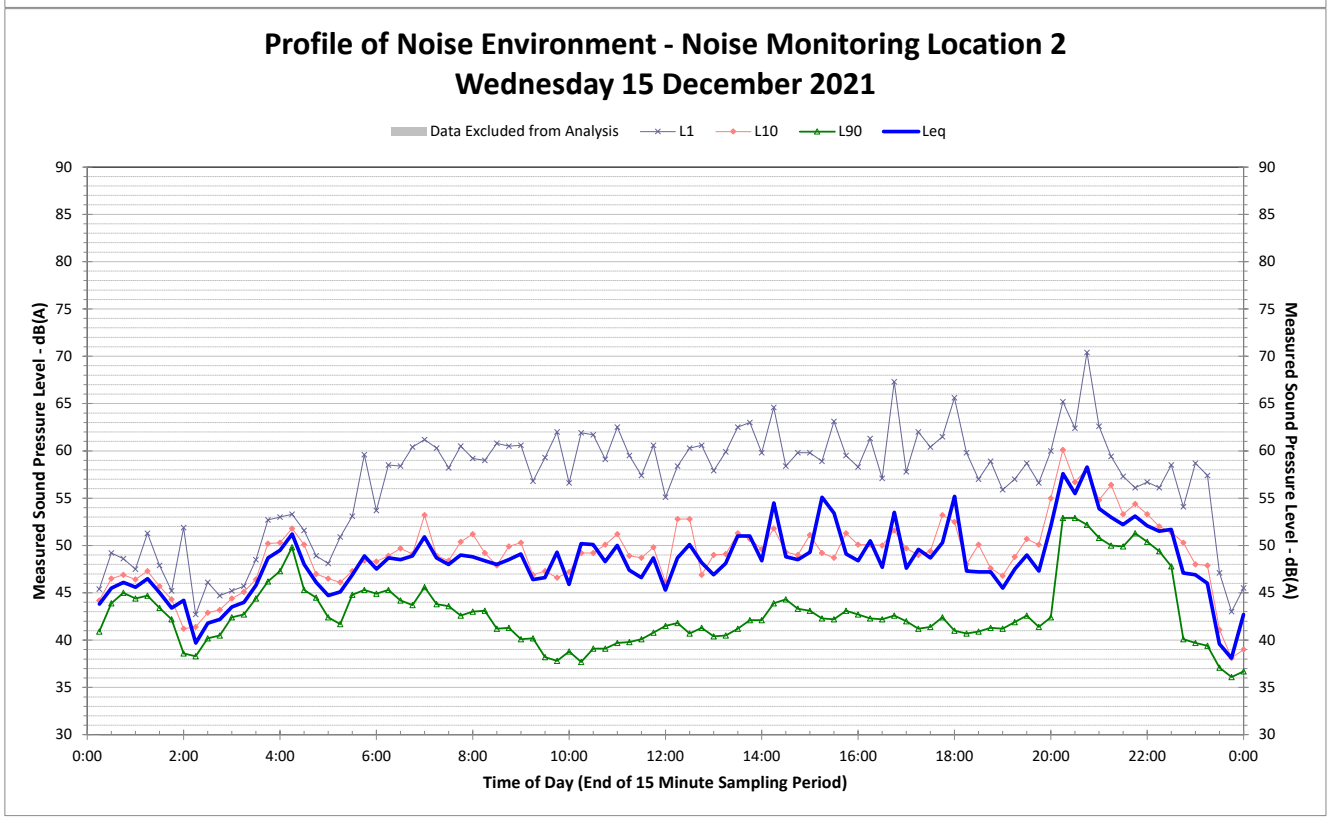
Profile of Noise Environment - Noise Monitoring Location 2
Saturday 11 December 2021

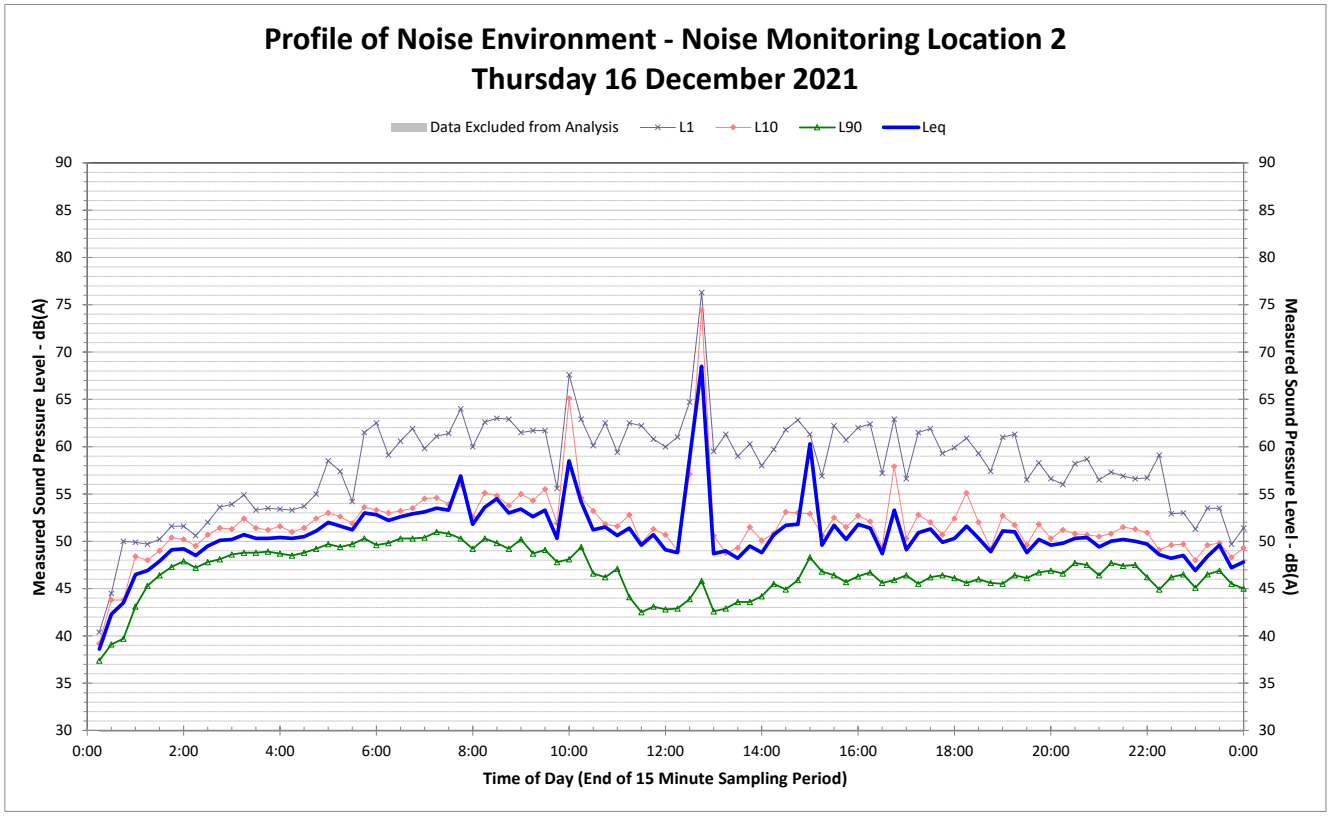


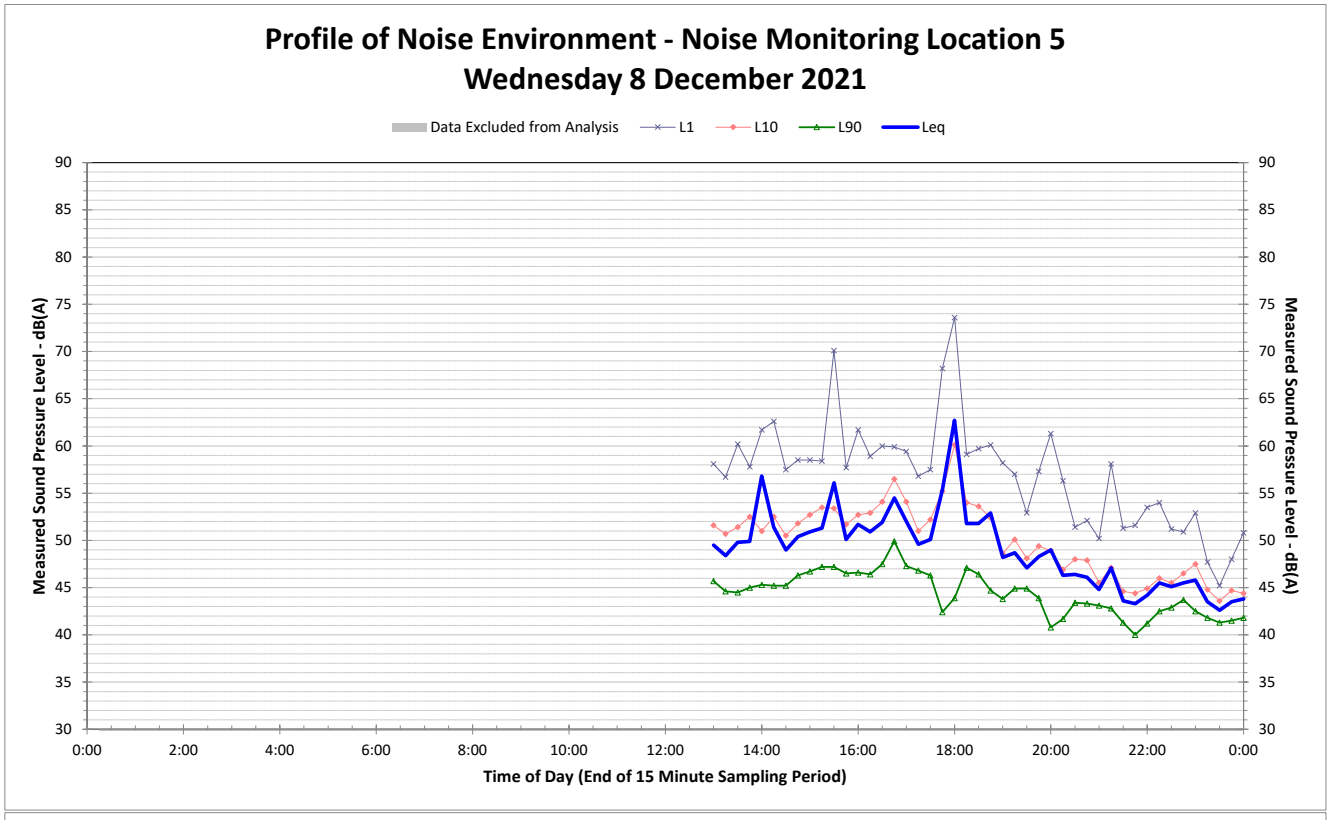

Profile of Noise Environment - Noise Monitoring Location 2
Sunday 12 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

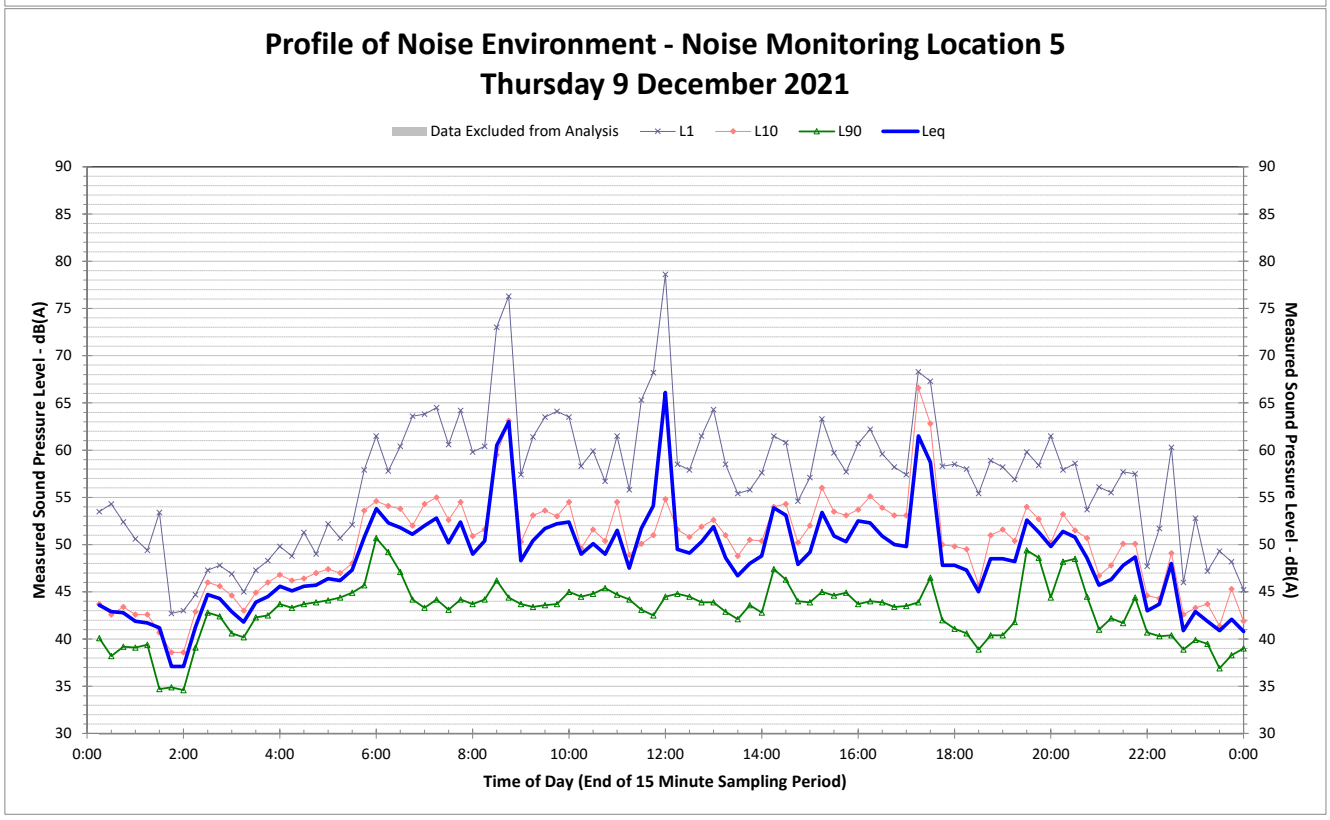

Profile of Noise Environment - Noise Monitoring Location 2
Monday 13 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

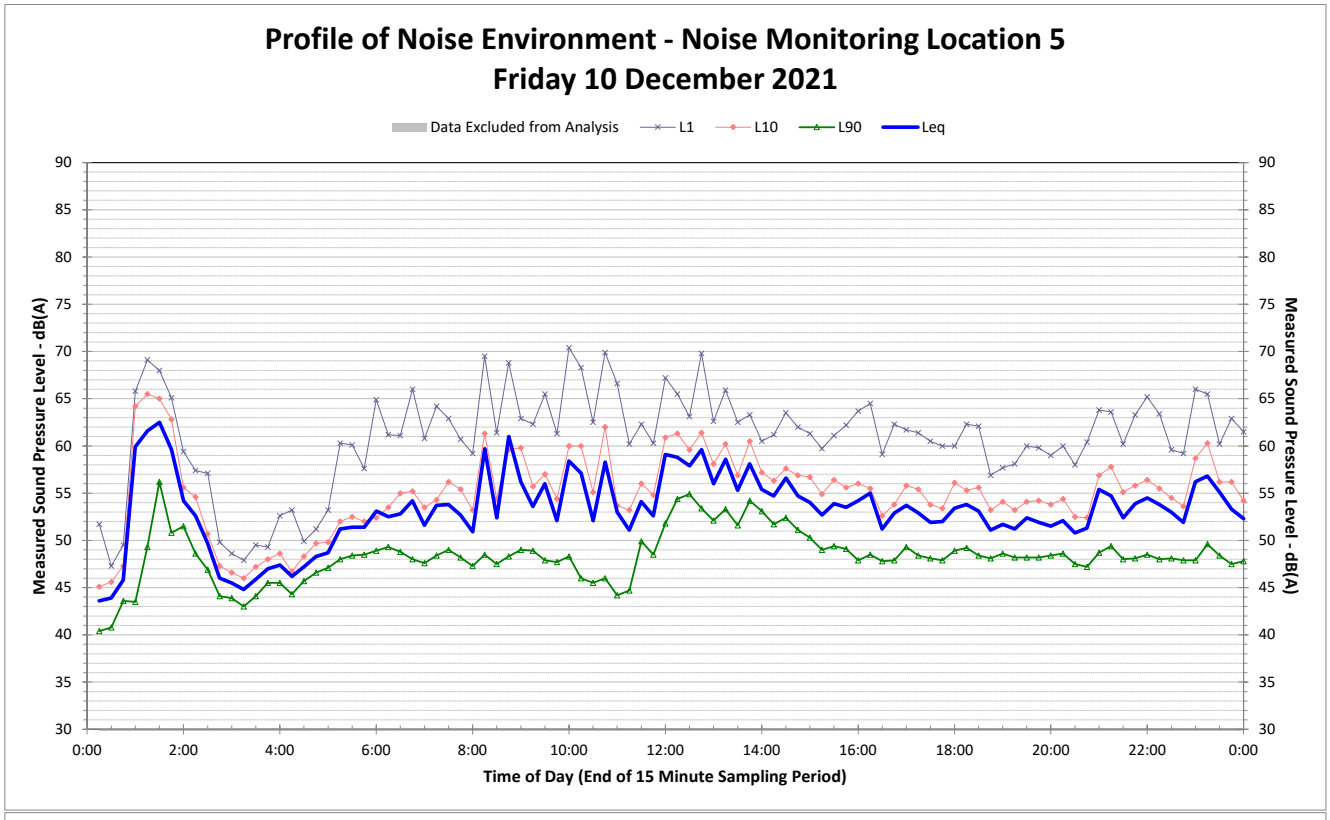

Profile of Noise Environment - Noise Monitoring Location 2
Tuesday 14 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

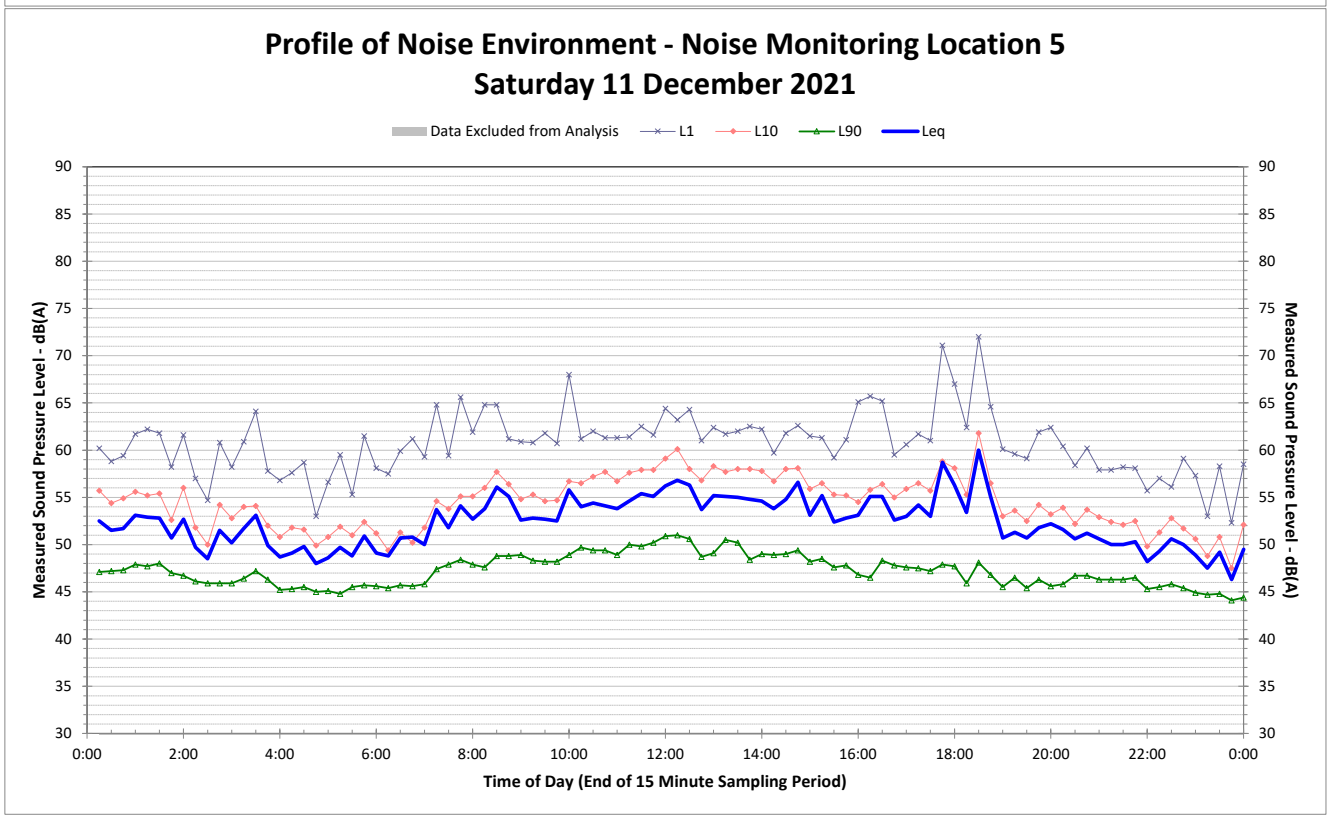

Profile of Noise Environment - Noise Monitoring Location 2
Wednesday 15 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

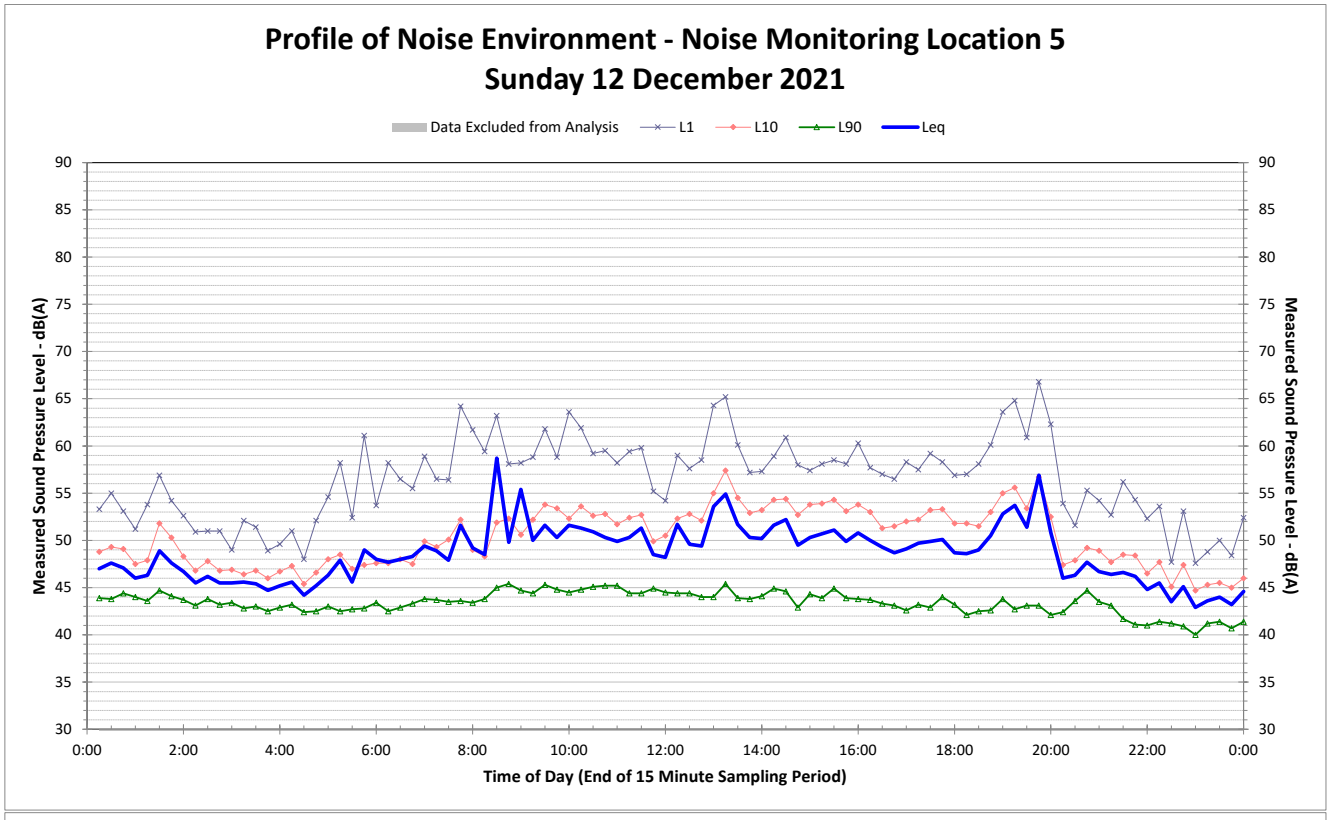

Profile of Noise Environment - Noise Monitoring Location 2
Thursday 16 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
0:00

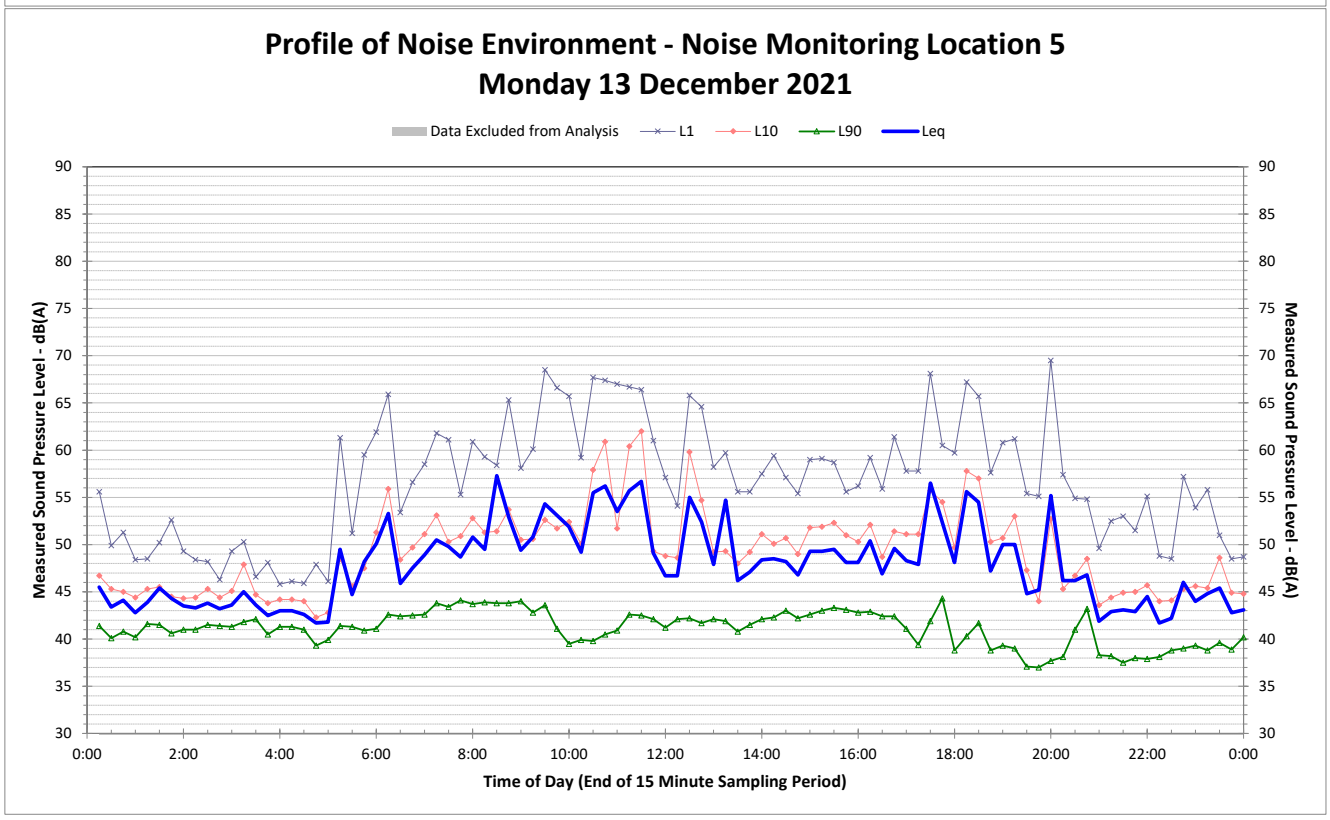

Profile of Noise Environment - Noise Monitoring Location 5
Wednesday 8 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

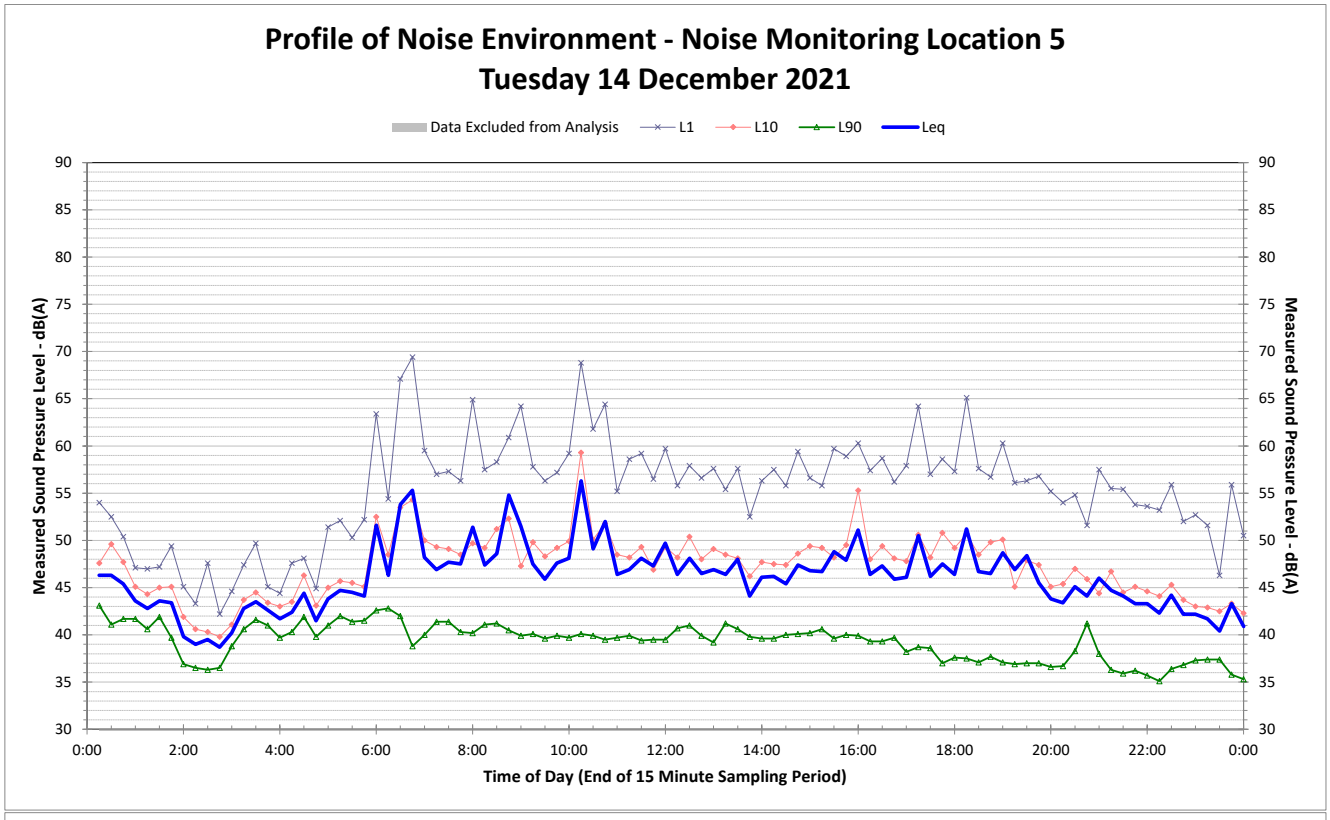

Profile of Noise Environment - Noise Monitoring Location 5
Thursday 9 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

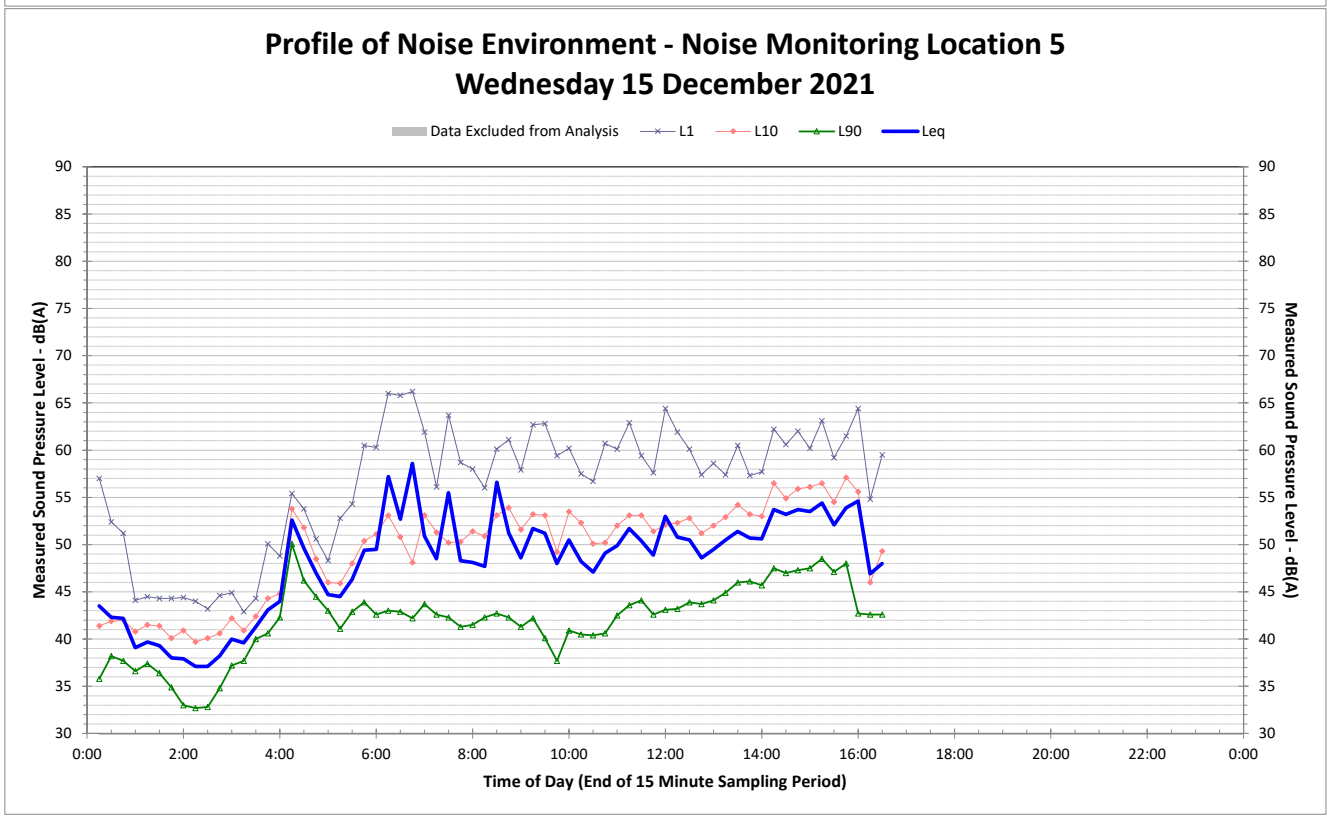

Profile of Noise Environment - Noise Monitoring Location 5
Friday 10 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

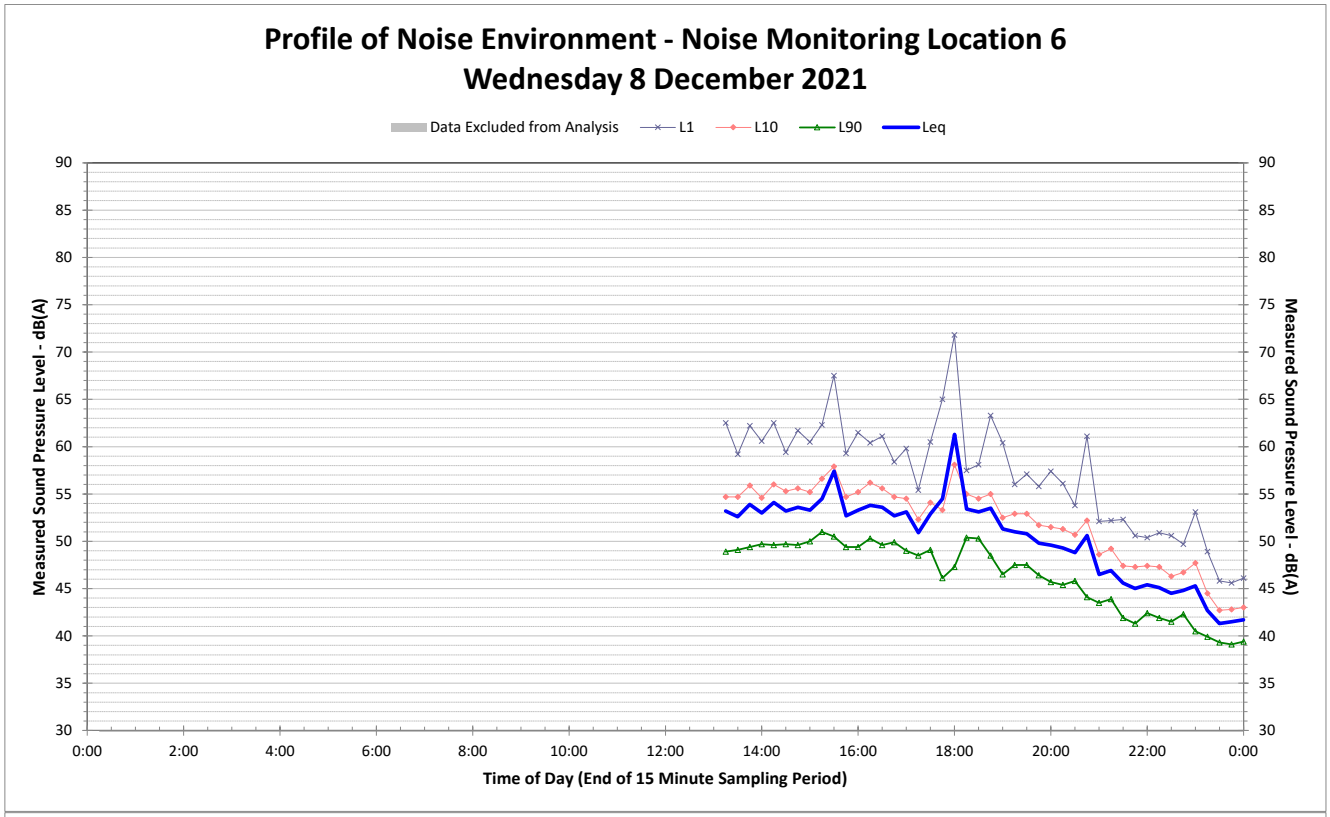

Profile of Noise Environment - Noise Monitoring Location 5
Saturday 11 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

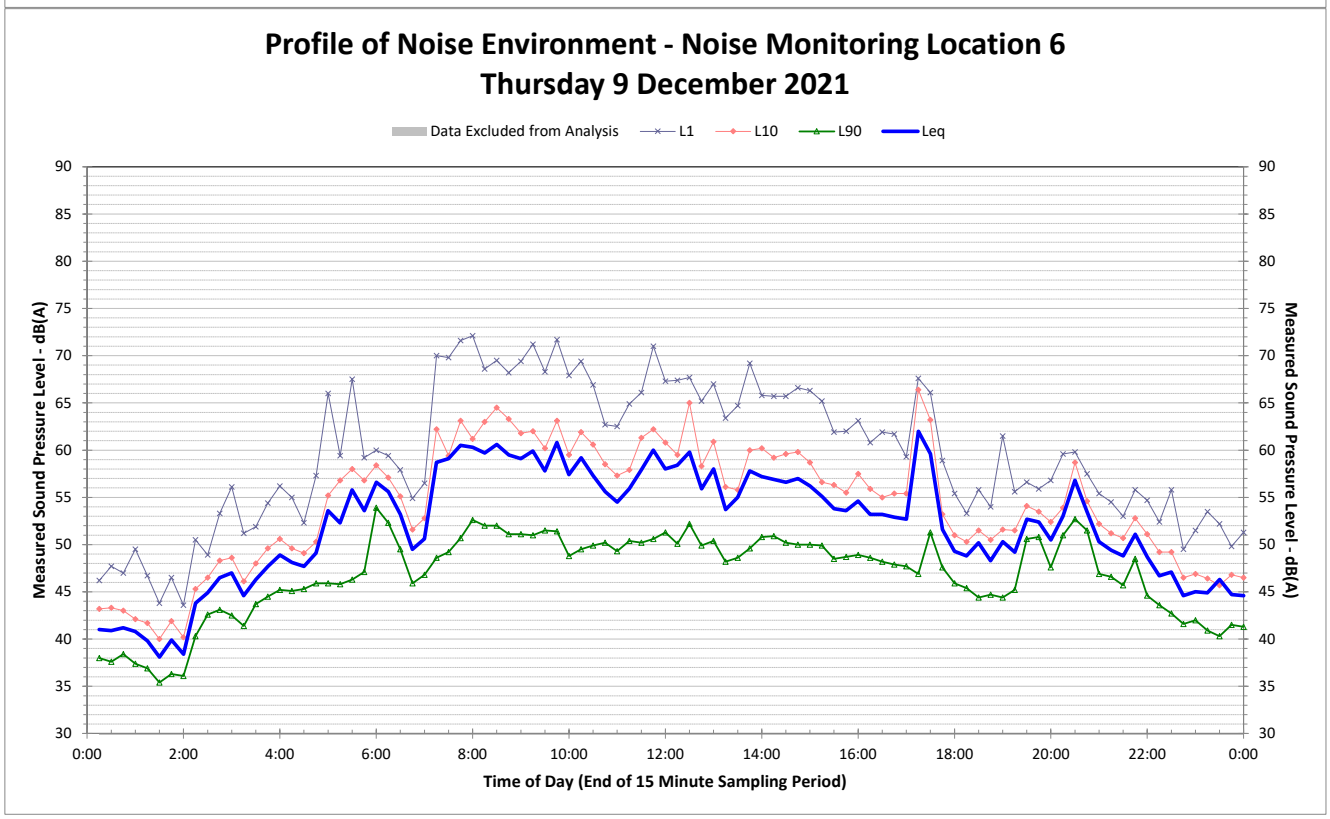

Profile of Noise Environment - Noise Monitoring Location 5
Sunday 12 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

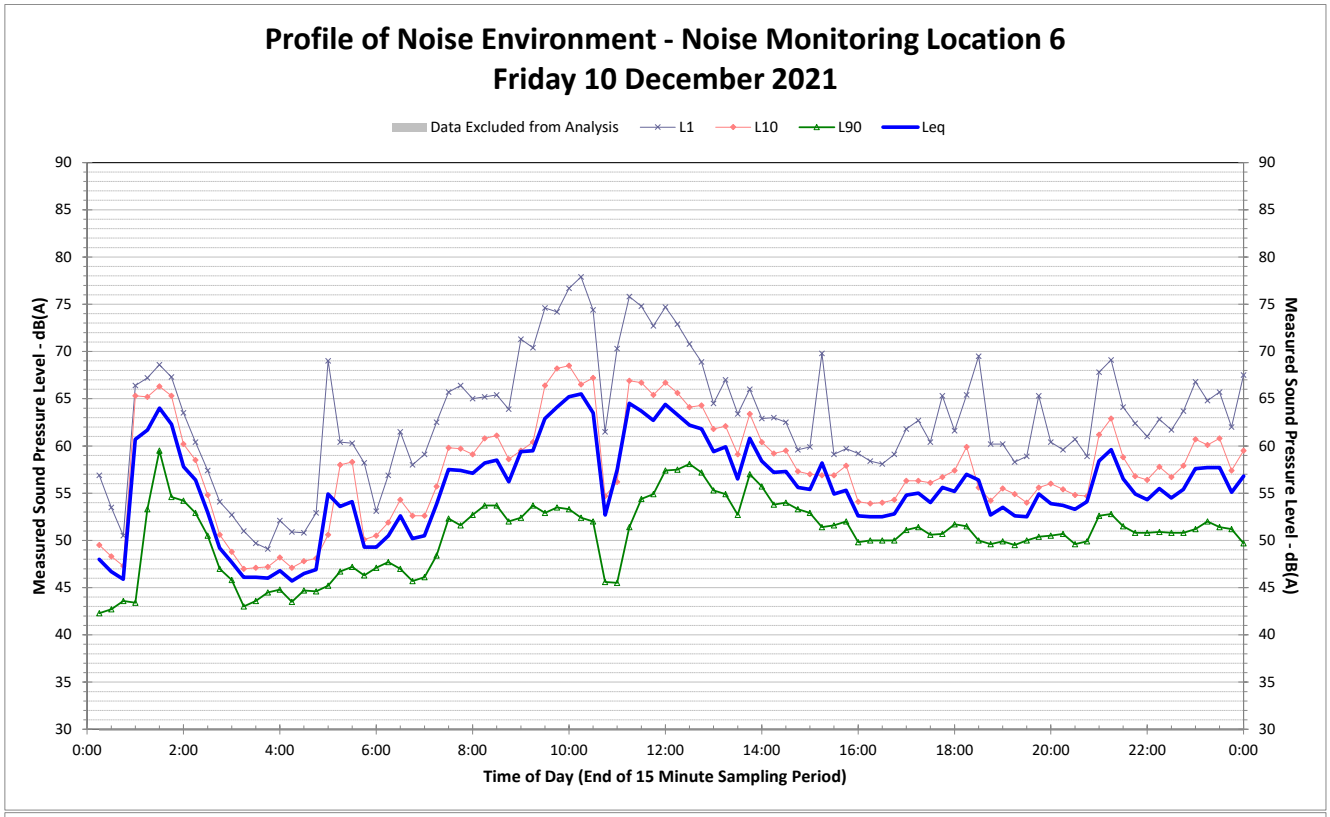

Profile of Noise Environment - Noise Monitoring Location 5
Monday 13 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

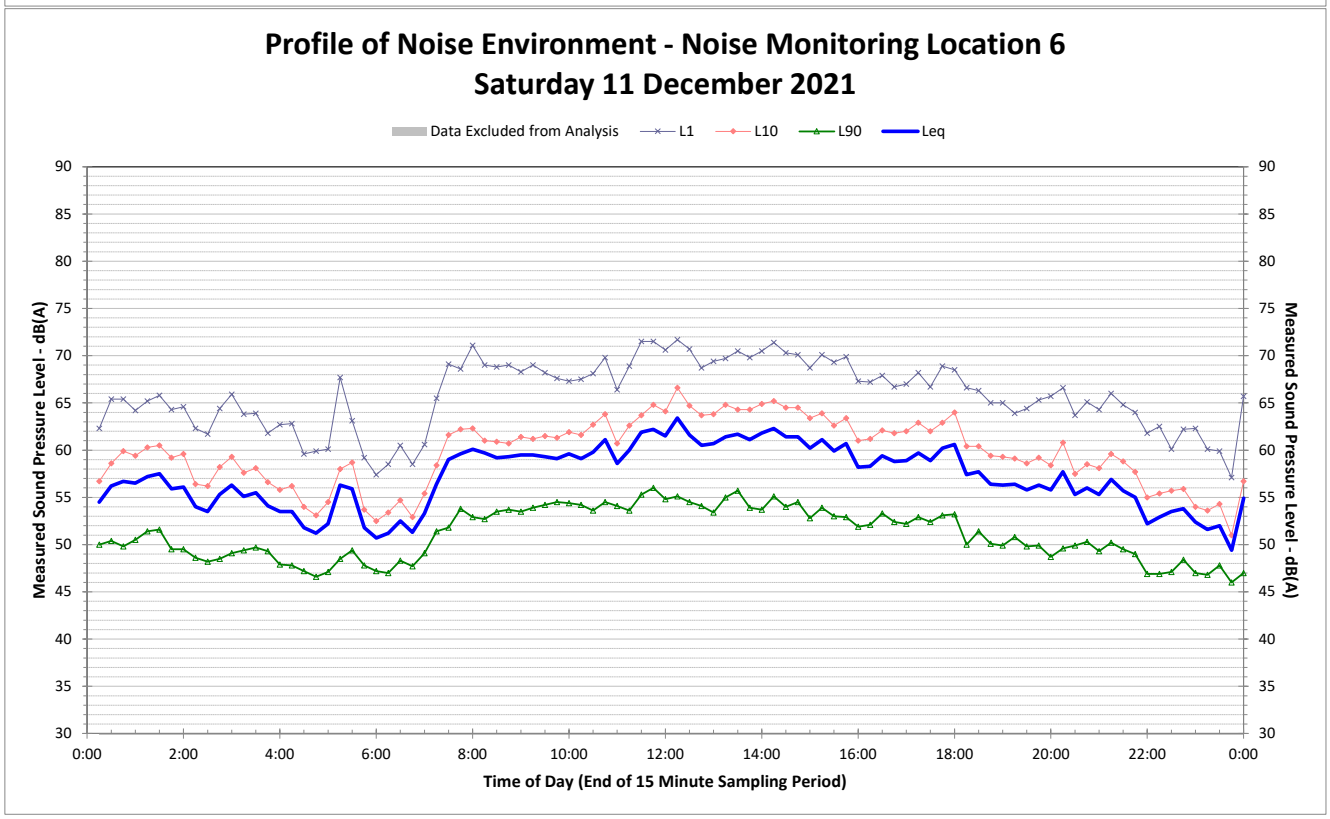

Profile of Noise Environment - Noise Monitoring Location 5
Tuesday 14 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

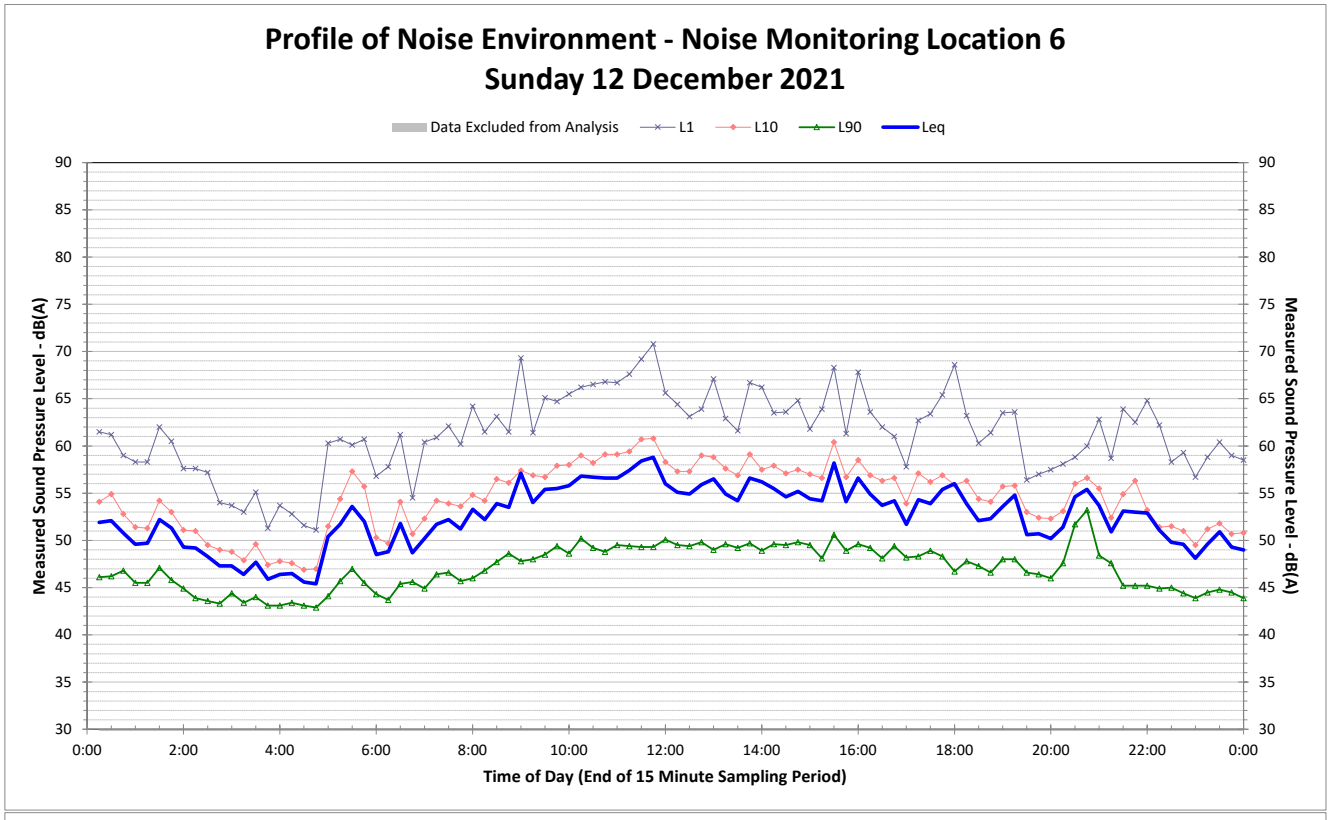

Profile of Noise Environment - Noise Monitoring Location 5
Wednesday 15 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

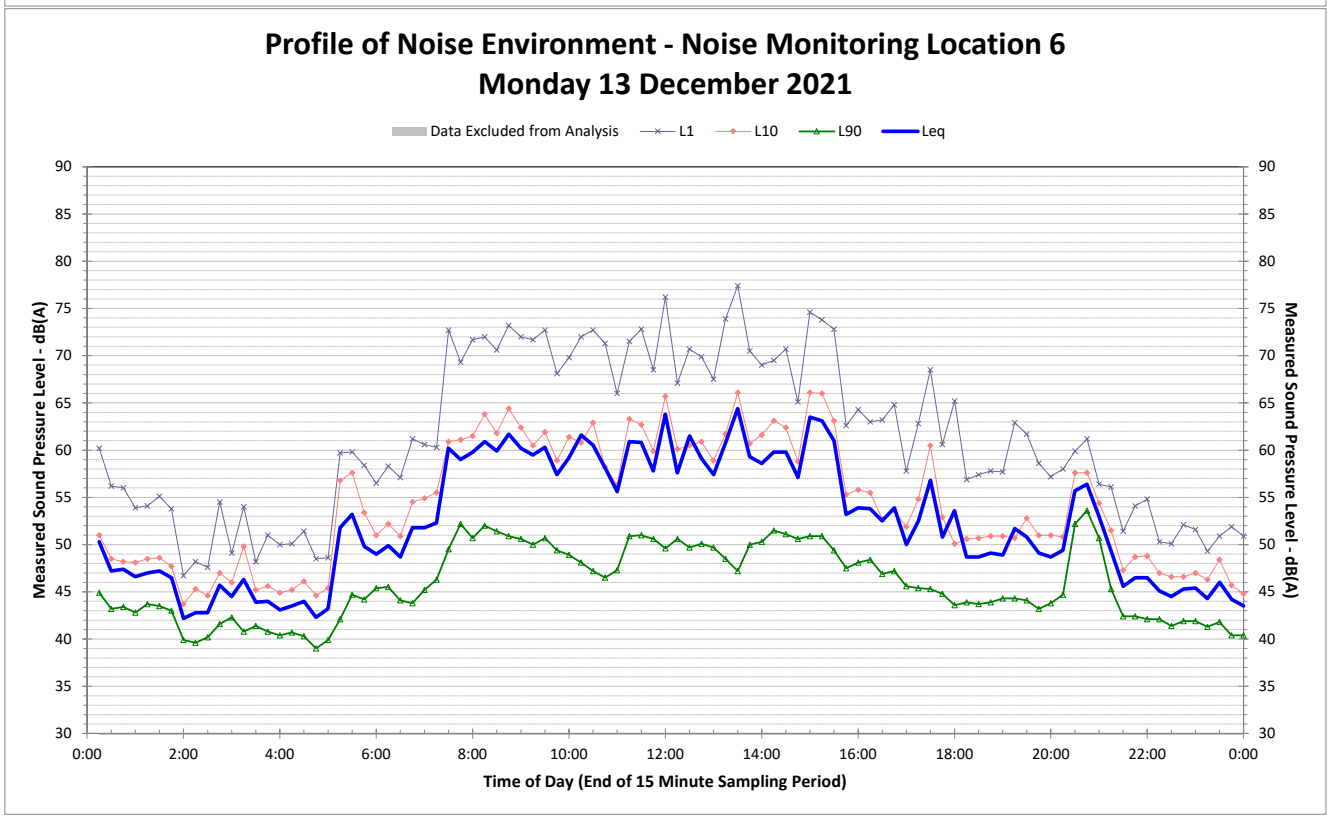

Profile of Noise Environment - Noise Monitoring Location 6
Wednesday 8 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

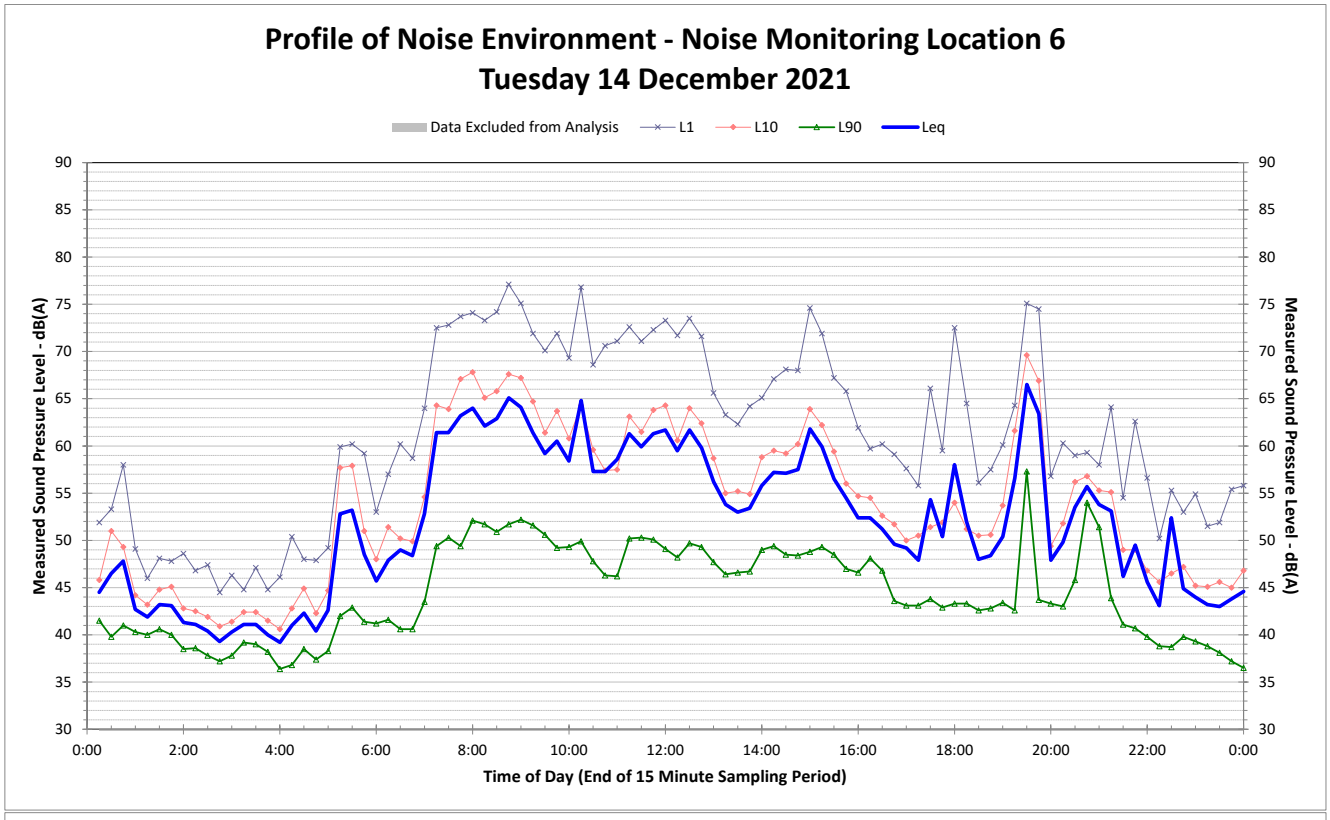

Profile of Noise Environment - Noise Monitoring Location 6
Thursday 9 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

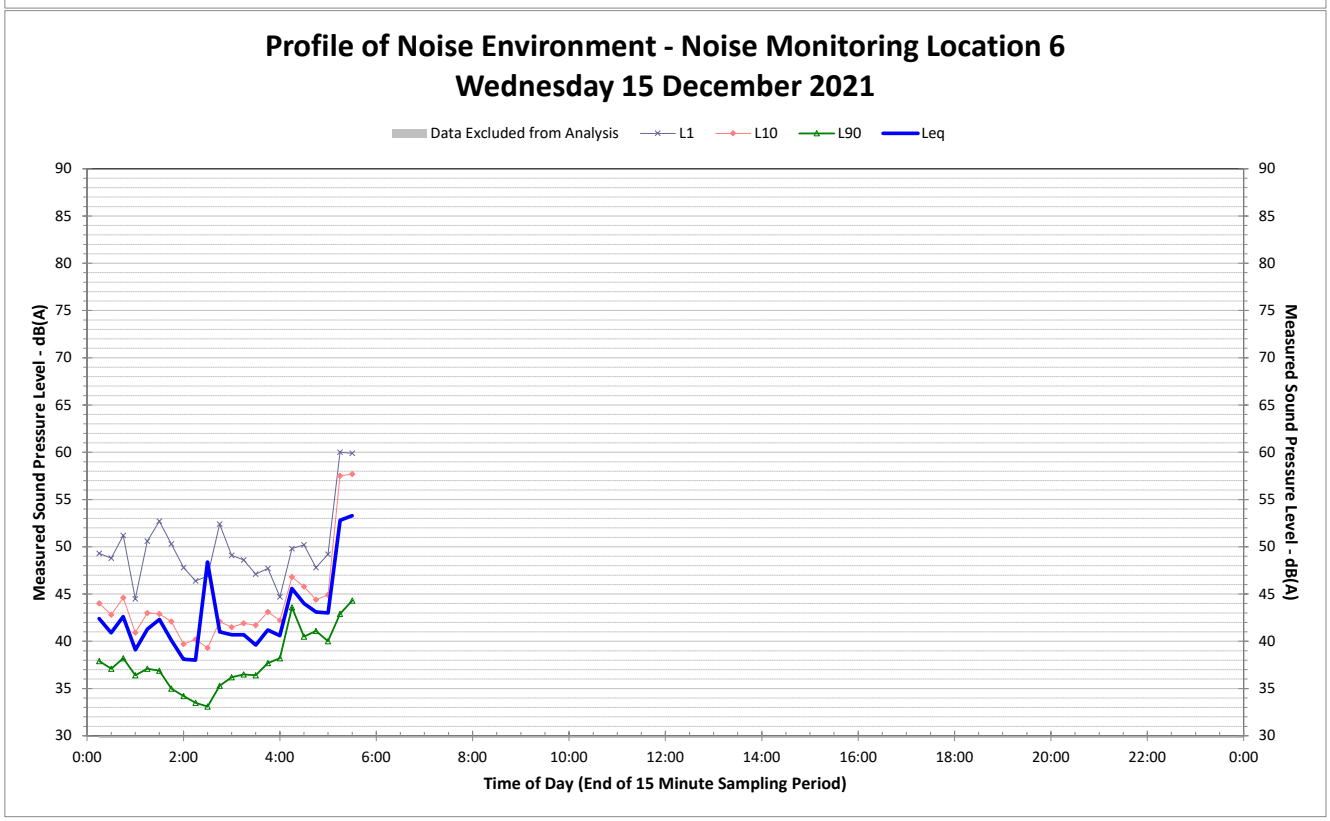

Profile of Noise Environment - Noise Monitoring Location 6
Friday 10 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)


Profile of Noise Environment - Noise Monitoring Location 6
Saturday 11 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)


Profile of Noise Environment - Noise Monitoring Location 6
Sunday 12 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)


Profile of Noise Environment - Noise Monitoring Location 6
Monday 13 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)


Profile of Noise Environment - Noise Monitoring Location 6
Tuesday 14 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)


Profile of Noise Environment - Noise Monitoring Location 6
Wednesday 15 December 2021
Data Excluded from Analysis
L1
L10
L90
Leq
Measured Sound Pressure Level - dB(A)
Time of Day (End of 15 Minute Sampling Period)

hutchison weller

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