

TRANSPORT AND WORKS ACT 1992

Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006

THE NETWORK RAIL (STALYBRIDGE TO DIGGLE (SADDLEWORTH) ENHANCEMENTS) ORDER

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1 INTRODUCTION

- 1.1.1 This report details the findings of the baseline noise surveys conducted for the Network Rail (Stalybridge to Diggle (Saddleworth) Enhancements) Order. Noise surveys have been conducted at locations representative of Noise Sensitive Receptors (NSRs) near the proposed Mossley Station. The noise surveys have been undertaken to inform the noise impact assessment in terms of both construction of the Order Scheme and operational noise impacts from the relocated Mossley Station. Given the large extents of the Scheme, and as construction noise assessments are predominantly based on absolute noise level thresholds, as a proportional approach to baseline data collection, the noise survey locations are focused on the area surrounding the new Mossley Station.
- 1.1.2 The noise monitoring was undertaken following the principles of BS 7445-1:2003¹ (BS7445-1:2003, 2003). Long term noise monitoring surveys were undertaken at two locations for a period of approximately one week, including weekday and weekend periods. These were supplemented by two short duration daytime measurements at a location where it was not suitable to conduct unattended monitoring due to security concerns.
- 1.1.3 The measurements were logged continuously repeating over 15-minute periods, together with 1-second L_{eq} measurements and one-third octave band noise levels recorded for future reference, if required. The calibration of the sound levels meters were checked at the start and end of the measurement. No significant drift (less than 0.1 dB difference) was noted during any surveys. The sound level meters had been laboratory calibrated within 24 months and the acoustic calibrators had been laboratory calibrated with 12 months of the survey, in line with manufacturers recommendations and good practice. Calibration certificates are available upon request.
- 1.1.4 A full suite of acoustical parameters was measured during the monitoring, but the following parameters are of particular interest and reported:
- $L_{Aeq,T}$ the equivalent continuous A-weighted sound pressure level. This is considered as the ambient noise level over the time period T; and
 - $L_{A90,T}$ the noise level that was exceeded for 90% of the measurement period; i.e. a typical lower value. This is considered as the background sound level over the time period T.

¹ BS7445-1:2003. (2003). *Description and measurement of environmental noise - Guide to quantities and procedures*

- 1.1.5 The sound level meters were housed within weatherproof peli-cases with the microphone mounted via a pole at height of 1.3m. Weather conditions were monitored during the surveys and periods of rain and/or high wind (>5m/s) were excluded from the assessment.
- 1.1.6 No ground-borne noise assessments are proposed as part of the noise impact assessment, however, it has been requested that baseline vibration measurements (and associated ground-borne noise predictions) undertaken by Arup in 2023² are replicated within this report for information.

2 MEASUREMENT DETAILS

2.1 Measurement Locations

- 2.1.1 The baseline noise and vibration survey locations are shown in Figure 2-1 below. Monitoring locations were selected to be representative of NSRs which may be affected by noise from the construction and/or the operation of the new Mossley Station:
- Position 1 is considered representative of receptors on Archer Street.
 - Position 2 is representative of receptors on Stamford Road.
 - Position 3 is representative of receptors on Manchester Road.
- 2.1.2 The groundborne noise levels were predicted from the vibration levels measured at the car park immediately to the west of 49 Wakefield Road and above the Stalybridge Tunnel by Arup in 2023³. The predicted baseline groundborne noise levels have been reproduced in this report with full details shown in Arup's report (Arup, 2023).

² Arup. (2023). *Groundborne noise and trackform assessment for Stalybridge & Scout tunnels*. Manchester.

³ [151667-TSA-W2B-MVL3-REP-W-MF-270579](#)

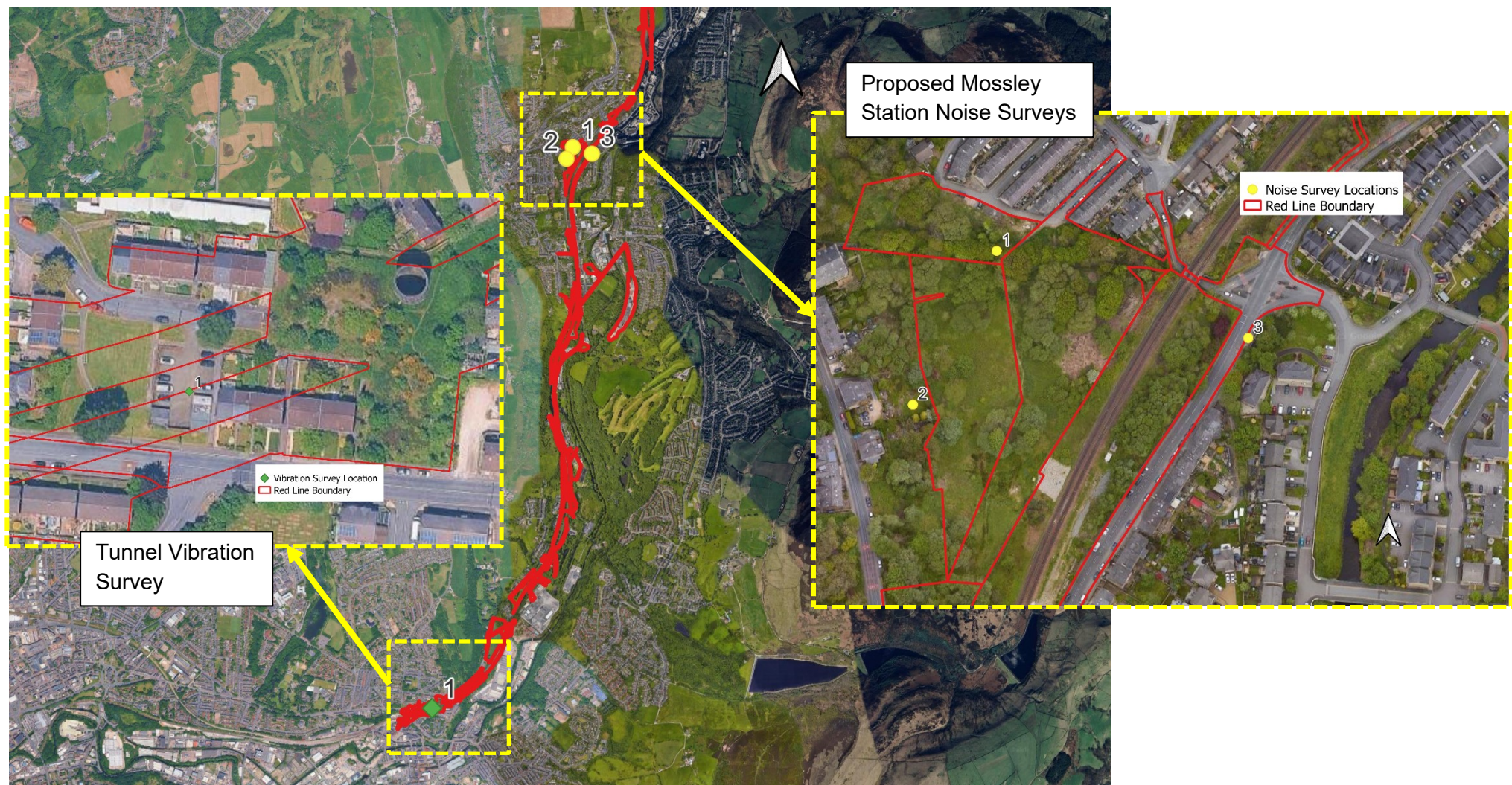


Figure 2-1 - Noise and vibration survey locations

2.2 Measurement equipment

2.2.1 The equipment used in the surveys are shown in Table 2-1.

Table 2-1 - Equipment used in the surveys

Description of survey location	Equipment	Serial number	Note	Field calibration values
Noise survey Position 1	Sound level meter	01dB FUSION 11199	Calibrated on 13/03/2023	Pre-measurement: 93.9
	Associated Calibrator	CAL21 34565046	Calibrated on 11/03/2024	Post-measurement 93.9
Noise survey Position 2	Sound level meter	01dB FUSION 12811	Calibrated on 26/02/2023	Pre-measurement: 93.9
	Associated Calibrator	CAL31 93744	Calibrated on 11/10/2023	Post-measurement 93.9
Noise survey Position 3	Sound level meter	Rion NL-52, 00620857	Calibrated on 20/10/2023	Pre-measurement: 94.0
	Associated Calibrator	Rion NC-74 35125804	Calibrated on 16/10/2023	Post-measurement 94.0

2.3 Weather conditions

2.3.1 Weather conditions during the survey were generally suitable with wind speed $\leq 5\text{m/s}$ and no precipitation. A weather station was set up at Position 1 to monitor the weather conditions. When the wind speed was greater than 5 m/s or there was precipitation, the data have been excluded from the analysis.

2.4 Measurement results – baseline noise levels

2.4.1 The measured baseline noise levels have been processed and analysed according to BS 4142:2014 (4142:2014+A1:2019, 2019)⁴. The typical background sound levels have been established as shown in Table 2-2. The measured average A-weighted equivalent noise levels for each hour are shown in Table 2-3. The details are shown in Annex A.

⁴ 4142:2014+A1:2019, B. (2019). *Methods for rating and assessing industrial and commercial sound*

- 2.4.2 The main sources affecting the survey positions are road traffic on Manchester Road and Stamford Road. The traffic on Manchester Road was moderate. Whenever a train passed it would dominate the sound environment for a short period. When there was no road and/or rail traffic, birds and distant traffic dominate the sound environment.

Table 2-2 - Measured background sound levels (free-field noise levels)

Description of survey location	Grid reference easting, northing	Start date	Duration	Assessment period	Typical background sound level*	Range of background sound levels
Noise survey Position 1	397368,402569	8 th July 2024	7 days continuously	Daytime 07:00 to 23:00	37 dB L _{A90}	34 to 42 dB L _{A90}
				Night time 23:00 to 07:00	27 dB L _{A90}	24 to 39 dB L _{A90}
Noise survey Position 2	397325,402490	8 th July 2024	7 days continuously	Daytime 07:00 to 23:00	44 dB L _{A90}	30 to 49 dB L _{A90}
				Night time 23:00 to 07:00	26 dB L _{A90}	23 to 45 dB L _{A90}
Noise survey Position 3	397495,402524	8 th July 2024	15 minutes	Daytime 12:35 to 12:50	44 dB L _{A90}	--
		15 th July 2024	15 minutes	Daytime 11:57 to 12:13	42 dB L _{A90}	--

Note(*): The modal values have been considered as the typical background sound levels.

Table 2-3 - Measured $L_{Aeq,T}$ sound levels (free-field noise levels)

Start time	Average $L_{Aeq,1hr}$, dB		$L_{Aeq,T}$, dB
	Position 1	Position 2	Position 3
00:00	44	43	-
01:00	48	47	-
02:00	51	43	-
03:00	48	46	-
04:00	43	51	-
05:00	45	50	-
06:00	47	49	-
07:00	47	50	-
08:00	47	50	-
09:00	47	50	-
10:00	46	50	-
11:00	50	50	-
12:00	49	49	67 This is the average of two 15min measurements
13:00	49	50	-
14:00	48	49	-
15:00	51	50	-
16:00	50	49	-
17:00	54	50	-
18:00	51	49	-
19:00	50	49	-
20:00	49	48	-
21:00	46	46	-
22:00	44	46	-
23:00	46	47	-

2.5 Measurement results – groundborne noise levels

- 2.5.1 The groundborne noise levels in terms of L_{ASmax} were not directly measured but predicted based on the relationship between the measured vibration and the corresponding re-radiated noise levels. A summary is shown in Table 2-4 and Figure 2-2. The full details are available in Arup's report (Arup, 2023).

Table 2-4 - Predicted groundborne noise levels

Description of survey location	Groundborne noise levels	Reference LOAEL and SOAEL *
Vibration survey (for groundborne noise) Position 1	32 dB to 43 dB L_{ASmax}	LOAEL: 35 dB L_{ASmax} SOAEL: 45 dB L_{ASmax}

Note(*) LOAEL and SOAEL are defined in Noise Policy Statement for England (DEFRA, 2010)⁵. LOAEL: Lowest Observable Adverse Effect Level. This is a lower threshold representing the onset of likely effects on quality of life such as impact on amenity from annoyance at noise events. SOAEL: Significant Observable Adverse Effect Level. This is a higher threshold representing the onset of likely adverse health effects due to noise events such as disruption to sleep or impacts on other health vectors.

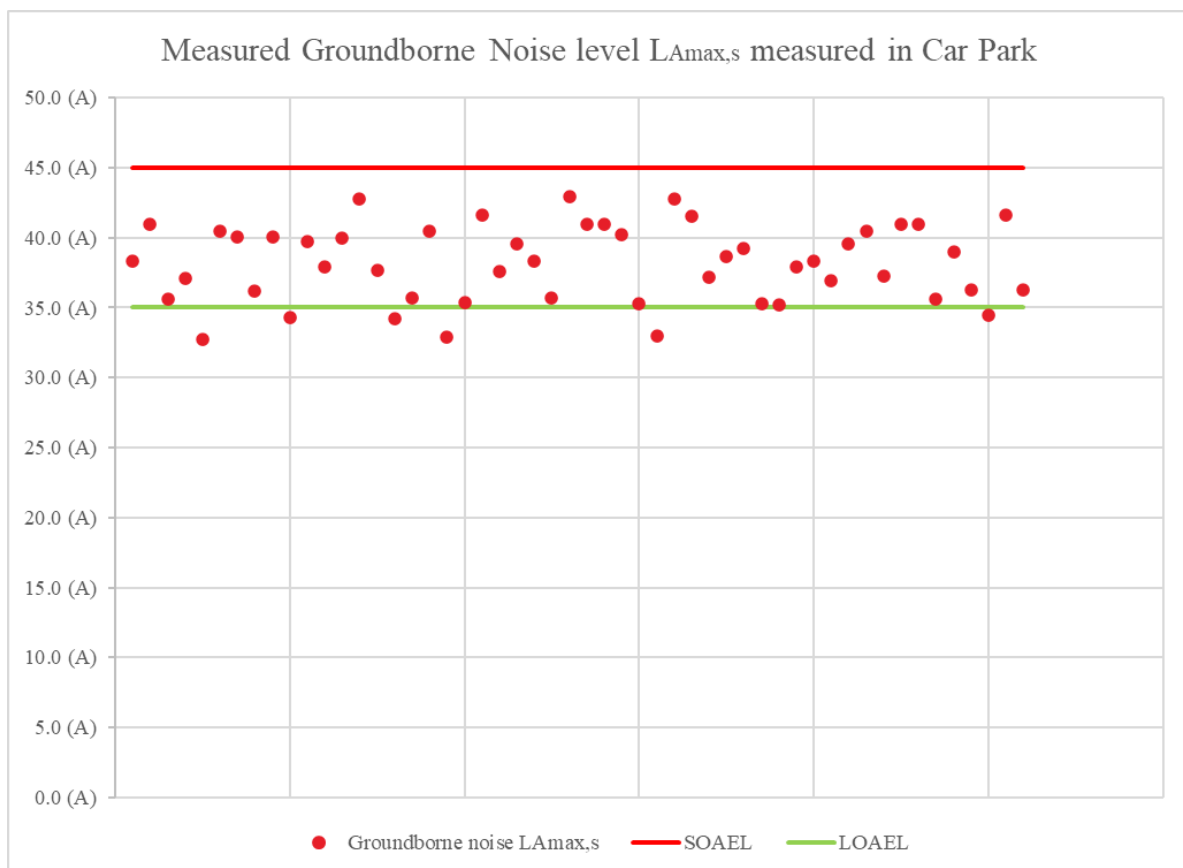


Figure 2-2 - Ground-borne noise levels of train pass by events at Stalybridge tunnel

⁵ DEFRA. (2010). *Noise Policy Statement for England*. London.

3 SUMMARY

- 3.1.1 Baseline noise surveys were conducted at positions representative of the noise sensitive receptors in proximity to the proposed new Mossley Station. Baseline vibration was measured by Arup on top of the Stalybridge Tunnel and the associated groundborne noise levels were calculated based on the measured vibration.

ANNEX A – SURVEY RESULTS

The measured hourly $L_{Aeq,1hr}$ are shown in Table A-1 and Table A-2 for Position 1 and Position 2 respectively. When the weather was not suitable, the noise levels were presented by *.

Table A-1 – Measured $L_{Aeq,1hr}$ sound levels (free-field noise levels) at Position 1

Position	Start time	L _{Aeq,1hr} , dB by dates in July 2024							
		8 th	9 th	10 th	11 th	12 th	13 th	14 th	15 th
Position 1, Grid reference: 397368,402569	00:00	--	41	43	51	39	41	35	37
	01:00	--	49	48	55	36	42	37	34
	02:00	--	52	41	59	30	34	31	31
	03:00	--	53	43	52	41	38	32	35
	04:00	--	*	41	49	41	43	36	39
	05:00	--	*	44	48	42	47	39	42
	06:00	--	*	48	50	45	48	41	47
	07:00	--	*	48	48	47	45	46	49
	08:00	--	*	49	*	46	48	44	47
	09:00	--	*	49	*	47	48	45	46
	10:00	--	*	46	*	46	48	44	47
	11:00	--	*	*	*	46	50	52	50
	12:00	52	*	43	*	48	50	48	--
	13:00	49	52	43	*	48	51	45	--
	14:00	48	52	41	*	47	50	44	--
	15:00	50	55	38	*	49	49	45	--
	16:00	52	54	48	*	50	46	44	--
	17:00	53	60	49	*	51	51	44	--
	18:00	49	54	54	*	50	46	46	--
	19:00	53	51	47	53	48	46	43	--
	20:00	50	49	45	46	53	49	43	--
	21:00	45	48	46	46	44	46	43	--
	22:00	43	47	44	44	45	41	45	--
	23:00	41.4	48	50	46	39	43	41	--

Table A-2 – Measured $L_{Aeq,1hr}$ sound levels (free-field noise levels) at Position 2

Position	Start time	$L_{Aeq,1hr}$ dB by dates in July 2024							
		8 th	9 th	10 th	11 th	12 th	13 th	14 th	15 th
Position 2, Grid reference: 397325,402490	00:00	--	46	41	47	42	44	39	39
	01:00	--	48	47	51	40	50	37	36
	02:00	--	49	38	46	33	36	35	34
	03:00	--	52	42	45	46	42	35	36
	04:00	--	*	46	49	51	51	53	52
	05:00	--	*	49	48	47	52	49	53
	06:00	--	*	50	50	49	51	43	49
	07:00	--	*	50	50	50	49	46	51
	08:00	--	*	50	50	50	51	45	49
	09:00	--	*	51	50	49	52	51	48
	10:00	--	*	50	50	49	49	53	49
	11:00	--	*	51	50	49	49	48	53
	12:00		*	49	49	49	50	49	--
	13:00	50	51	50	51	49	49	51	--
	14:00	50	49	50	50	49	49	49	--
	15:00	49	52	49	50	50	48	48	--
	16:00	49	50	50	49	51	50	47	--
	17:00	50	51	50	50	52	48	47	--
	18:00	49	50	51	49	50	48	48	--
	19:00	49	48	48	48	48	51	46	--
	20:00	48	46	46	47	49	49	46	--
	21:00	48	46	46	47	46	45	46	--
	22:00	47	46	46	46	47	45	47	--
	23:00	46	47	49	51	43	46	44	--

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Table A-3 – Measured L_{A90,15min} (free-field noise levels) at Position 1 - daytime

Position	Start time	daytime, L _{A90,15min} , dB by dates in July 2024								
		8 th	9 th	10 th	11 th	12 th	13 th	14 th	15 th	Arithmetic average
Position 1, Grid reference: 397368,402569	7:00:00		*	42	43	37	35	42	40	40
	7:15:00		*	42	42	39	37	*	39	40
	7:30:00		*	43	42	39	36	41	40	40
	7:45:00		*	43	40	40	37	*	41	40
	8:00:00		*	42	38	40	37	39	39	39
	8:15:00		*	43	39	40	36	38	41	40
	8:30:00		*	43	38	41	37	37	41	39
	8:45:00		*	43	39	43	38	37	40	40
	9:00:00		*	43	38	41	37	39	39	39
	9:15:00		*	42	38	40	38	41	39	40
	9:30:00		*	41	42	40	38	39	39	40
	9:45:00		53	41	41	42	40	40	40	42
	10:00:00		52	41	38	41	41	39	39	41
	10:15:00		52	42	37	40	39	39	40	41
	10:30:00		52	42	36	41	39	39	40	41
	10:45:00		51	44	39	41	41	37	39	42
	11:00:00		49	41	37	40	40	39	39	41
	11:15:00		49	44	36	40	40	38	41	41
	11:30:00		49	50	37	40	40	39	--	42
	11:45:00		48	45	35	40	41	40	--	41
	12:00:00	39	48	38	36	42	42	39	--	40
	12:15:00	40	*	37	37	42	40	39	--	39
	12:30:00	41	*	37	37	42	40	39	--	39
	2:45:00	41	49	37	37	43	39	39	--	41
	13:00:00	41	48	37	39	42	39	40	--	41

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Position	Start time	daytime, L _{A90,15min} , dB by dates in July 2024								
		8 th	9 th	10 th	11 th	12 th	13 th	14 th	15 th	Arithmetic average
	13:15:00	38	47	37	34	40	40	40	--	39
	13:30:00	38	*	36	33	40	40	39	--	38
	13:45:00	40	46	35	36	41	40	38	--	39
	14:00:00	40	45	36	32	42	39	38	--	39
	14:15:00	40	47	35	31	43	39	37	--	39
	14:30:00	40	47	35	30	42	39	38	--	39
	14:45:00	41	48	34	29	42	38	39	--	39
	15:00:00	41	49	34	30	43	38	38	--	39
	15:15:00	43	49	34	32	44	40	38	--	40
	15:30:00	41	48	33	29	*	38	38	--	38
	15:45:00	40	48	32	28	*	38	39	--	38
	16:00:00	42	48	32	28	*	37	37	--	37
	16:15:00	42	48	43	28	*	38	37	--	39
	16:30:00	42	47	42	25	*	38	38	--	39
	16:45:00	42	48	42	26	44	38	37	--	39
	17:00:00	42	51	43	26	43	37	38	--	40
	17:15:00	42	50	42	25	41	38	39	--	39
	17:30:00	43	49	41	26	42	38	37	--	39
	17:45:00	42	48	42	27	41	39	37	--	39
	18:00:00	42	49	44	26	*	38	38	--	39

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Position	Start time	daytime, L _{A90,15min} , dB by dates in July 2024								
		8 th	9 th	10 th	11 th	12 th	13 th	14 th	15 th	Arithmetic average
	18:15:00	41	47	44	26	*	38	37	--	39
	18:30:00	42	46	*	43	*	37	39	--	41
	18:45:00	42	47	*	44	*	37	37	--	41
	19:00:00	43	46	*	44	*	37	37	--	41
	19:15:00	43	45	43	43	*	37	37	--	41
	19:30:00	42	44	*	43	*	36	36	--	40
	19:45:00	41	44	40	41	39	36	36	--	39
	20:00:00	40	43	40	41	40	36	34	--	39
	20:15:00	38	43	39	41	39	36	32	--	38
	20:30:00	37	43	38	40	38	34	32	--	37
	20:45:00	38	42	37	38	37	37	32	--	37
	21:00:00	37	42	37	39	37	37	32	--	37
	21:15:00	36	40	*	39	36	33	32	--	36
	21:30:00	34	42	*	40	35	33	31	--	36
	21:45:00	37	42	*	39	*	33	30	--	36
	22:00:00	39	42	39	40	*	33	35	--	38
	22:15:00	35	40	38	37	36	32	35	--	36
	22:30:00	36	37	37	35	35	30	34	--	35
	22:45:00	36	37	*	34	35	32	34	--	34

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Table A-4 – Measured LA90,15min (free-field noise levels) at Position 1 – night time

Position	Start time	night time , LA90,15min , dB by dates in July 2024							
		8 th	9 th	10 th	11 th	12 th	13 th	14 th	Arithmetic average
Position 1, Grid reference: 397368,402569	23:00:00	33	36	*	33	33	29	32	32
	23:15:00	32	35	*	35	31	30	29	32
	23:30:00	34	34	*	37	32	31	31	33
	23:45:00	37	33	*	34	31	31	30	33
	00:00:00	37	33	*	34	31	29	29	32
	00:15:00	35	32	*	30	29	27	30	31
	00:30:00	34	35	*	29	30	27	29	31
	00:45:00	37	33	*	28	30	27	27	30
	01:00:00	*	33	*	27	28	27	27	28
	01:15:00	*	32	*	26	27	26	26	28
	01:30:00	*	32	*	27	27	24	27	28
	01:45:00	*	31	*	27	29	25	28	28
	02:00:00	*	32	*	27	29	25	29	28
	02:15:00	*	31	*	27	28	24	26	27
	02:30:00	*	31	*	26	28	25	27	27
	02:45:00	*	31	*	27	28	26	27	28
	03:00:00	*	31	*	27	28	26	26	27
	03:15:00	*	31	*	27	28	27	27	28
	03:30:00	*	31	*	27	29	25	28	28
	03:45:00	*	30	*	26	28	25	27	27
	04:00:00	*	31	39	28	29	25	29	30
	04:15:00	*	30	*	30	30	27	30	29
	04:30:00	*	31	*	32	32	29	33	32
	04:45:00	*	33	41	32	33	31	34	34
	05:00:00	*	32	41	33	33	32	33	34
	05:15:00	*	36	41	32	34	31	35	35
	05:30:00	*	35	41	32	32	29	35	34
	05:45:00	*	35	43	33	33	29	34	35
	06:00:00	*	39	45	35	34	29	36	36
	06:15:00	*	39	45	37	35	30	39	38
	06:30:00	*	42	44	37	35	33	38	38
	06:45:00	*	42	44	37	35	34	39	38

Table A-5 – Measured L_{A90,15min} (free-field noise levels) at Position 2 - daytime

Position	Start time	daytime, L _{A90,15min} , dB by dates in July 2024								
		8 th	9 th	10 th	11 th	12 th	13 th	14 th	15 th	Arithmetic average
Position 2, Grid reference: 397325,402490	7:00:00	--	*	42	44	42	37	38	42	41
	7:15:00	--	*	44	45	42	38	41	40	41
	7:30:00	--	*	43	44	43	37	38	43	41
	7:45:00	--	*	44	45	45	41	39	43	43
	8:00:00	--	*	45	46	44	42	38	43	43
	8:15:00	--	*	44	45	44	40	36	42	42
	8:30:00	--	*	45	47	45	42	39	43	44
	8:45:00	--	*	46	47	45	42	39	43	44
	9:00:00	--	*	45	45	44	41	43	42	43
	9:15:00	--	*	45	45	42	43	43	40	43
	9:30:00	--	*	44	46	43	42	42	42	43
	9:45:00	--	48	46	46	44	43	43	42	44
	10:00:00	--	49	44	44	44	44	43	40	44
	10:15:00	--	49	44	44	43	42	45	41	44
	10:30:00	--	49	45	45	42	43	42	43	44
	10:45:00	--	47	44	46	43	44	42	41	44
	11:00:00	--	46	44	45	43	43	43	41	44
	11:15:00	--	46	44	45	43	44	41	41	44
	11:30:00	--	46	47	45	42	43	42	--	44
	11:45:00	--	45	45	45	43	45	42	--	44
	12:00:00	--	45	44	46	44	44	43	--	44
	12:15:00	--	*	44	45	43	44	43	--	44
	12:30:00	44	45	43	45	44	43	43	--	44
	2:45:00	42	46	44	45	45	43	42	--	44
	13:00:00	42	46	44	46	44	43	43	--	44

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Position	Start time	daytime, L _{A90,15min} , dB by dates in July 2024								
		8 th	9 th	10 th	11 th	12 th	13 th	14 th	15 th	Arithmetic average
	13:15:00	42	45	45	47	42	43	43	--	44
	13:30:00	42	44	45	44	44	42	43	--	43
	13:45:00	42	45	43	44	43	42	43	--	43
	14:00:00	42	43	44	43	44	42	41	--	43
	14:15:00	42	44	44	44	45	42	40	--	43
	14:30:00	41	45	44	45	44	42	41	--	43
	14:45:00	43	46	45	43	44	40	43	--	43
	15:00:00	43	45	43	44	44	40	42	--	43
	15:15:00	44	46	45	45	45	43	41	--	44
	15:30:00	44	46	43	43	45	41	42	--	43
	15:45:00	43	46	43	44	45	40	41	--	43
	16:00:00	44	45	44	44	47	41	40	--	43
	16:15:00	44	45	45	44	47	42	40	--	44
	16:30:00	44	44	45	44	46	42	40	--	43
	16:45:00	44	44	44	43	45	42	39	--	43
	17:00:00	44	46	44	44	45	40	41	--	43
	17:15:00	45	44	44	44	44	40	42	--	43
	17:30:00	44	44	45	44	44	41	40	--	43
	17:45:00	45	45	44	45	42	41	39	--	43
	18:00:00	42	45	43	44	44	42	40	--	43

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Position	Start time	daytime, L _{A90,15min} , dB by dates in July 2024								
		8 th	9 th	10 th	11 th	12 th	13 th	14 th	15 th	Arithmetic average
	18:15:00	43	44	43	44	*	41	41	--	43
	18:30:00	44	43	*	45	42	38	41	--	42
	18:45:00	43	44	*	44	44	41	39	--	42
	19:00:00	43	42	*	44	*	41	39	--	42
	19:15:00	44	43	43	43	43	41	39	--	42
	19:30:00	42	41	42	42	40	39	37	--	41
	19:45:00	41	41	40	42	41	40	37	--	40
	20:00:00	42	40	40	42	41	38	36	--	40
	20:15:00	40	40	38	42	42	40	34	--	39
	20:30:00	39	39	37	41	39	36	31	--	37
	20:45:00	40	38	36	39	39	37	32	--	37
	21:00:00	39	38	37	40	41	36	31	--	37
	21:15:00	38	36	39	39	38	36	32	--	37
	21:30:00	36	38	*	41	35	35	31	--	36
	21:45:00	39	39	35	41	37	36	30	--	37
	22:00:00	41	38	38	41	38	35	36	--	38
	22:15:00	37	35	37	37	37	34	38	--	36
	22:30:00	39	34	36	35	35	32	36	--	35
	22:45:00	38	33	36	35	37	35	36	--	36

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Table A-6 – Measured L_{A90,15min} (free-field noise levels) at Position 2 – night time

Position	Start time	night time , L _{A90,15min} , dB by dates in July 2024							
		8 th	9 th	10 th	11 th	12 th	13 th	14 th	Arithmetic average
Position 2, Grid reference: 397325,402490	23:00:00	36	31	38	33	33	30	34	33
	23:15:00	34	31	*	36	31	31	30	32
	23:30:00	39	30	*	37	32	33	32	34
	23:45:00	39	29	*	35	32	31	31	33
	00:00:00	40	29	*	34	30	29	30	32
	00:15:00	41	29	*	30	28	28	28	31
	00:30:00	38	32	*	28	30	25	28	30
	00:45:00	40	30	*	28	28	27	26	30
	01:00:00	41	30	*	27	28	28	26	30
	01:15:00	*	29	*	26	25	25	26	26
	01:30:00	*	29	*	26	26	23	27	26
	01:45:00	*	28	*	27	28	25	28	27
	02:00:00	*	28	*	27	27	25	29	27
	02:15:00	*	28	*	26	26	24	26	26
	02:30:00	*	28	*	26	26	25	26	26
	02:45:00	*	28	*	26	26	25	26	26
	03:00:00	*	27	*	27	27	26	26	27
	03:15:00	*	27	35	26	26	26	27	28
	03:30:00	*	28	35	28	27	24	27	28
	03:45:00	*	27	*	26	26	25	27	26
	04:00:00	*	29	37	29	29	26	29	30
	04:15:00	*	31	38	35	33	29	41	34
	04:30:00	*	41	*	44	45	43	41	43
	04:45:00	*	45	42	37	42	42	41	41
	05:00:00	*	43	40	40	37	39	41	40
	05:15:00	*	42	39	38	39	37	38	39
	05:30:00	*	38	41	35	34	30	37	36
	05:45:00	*	37	40	36	34	31	36	36
	06:00:00	*	41	43	39	38	29	39	38
	06:15:00	*	41	44	42	38	33	41	40
	06:30:00	*	43	44	40	36	33	39	39
	06:45:00	*	42	44	42	38	34	40	40

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The measurement time histories are shown in Figure A-1 and Figure A-2 for Position 1 and Position 2 respectively.

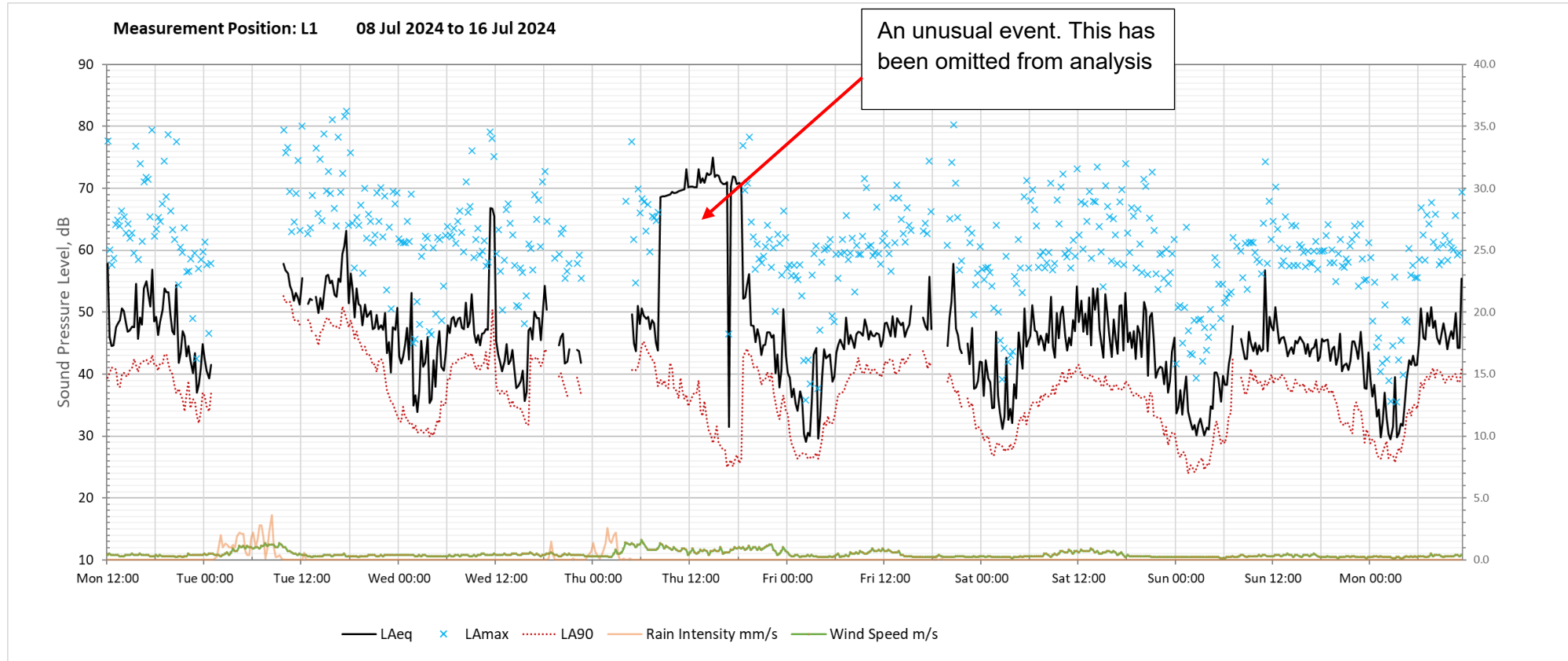


Figure A-1 - Measurement time history at Position 1

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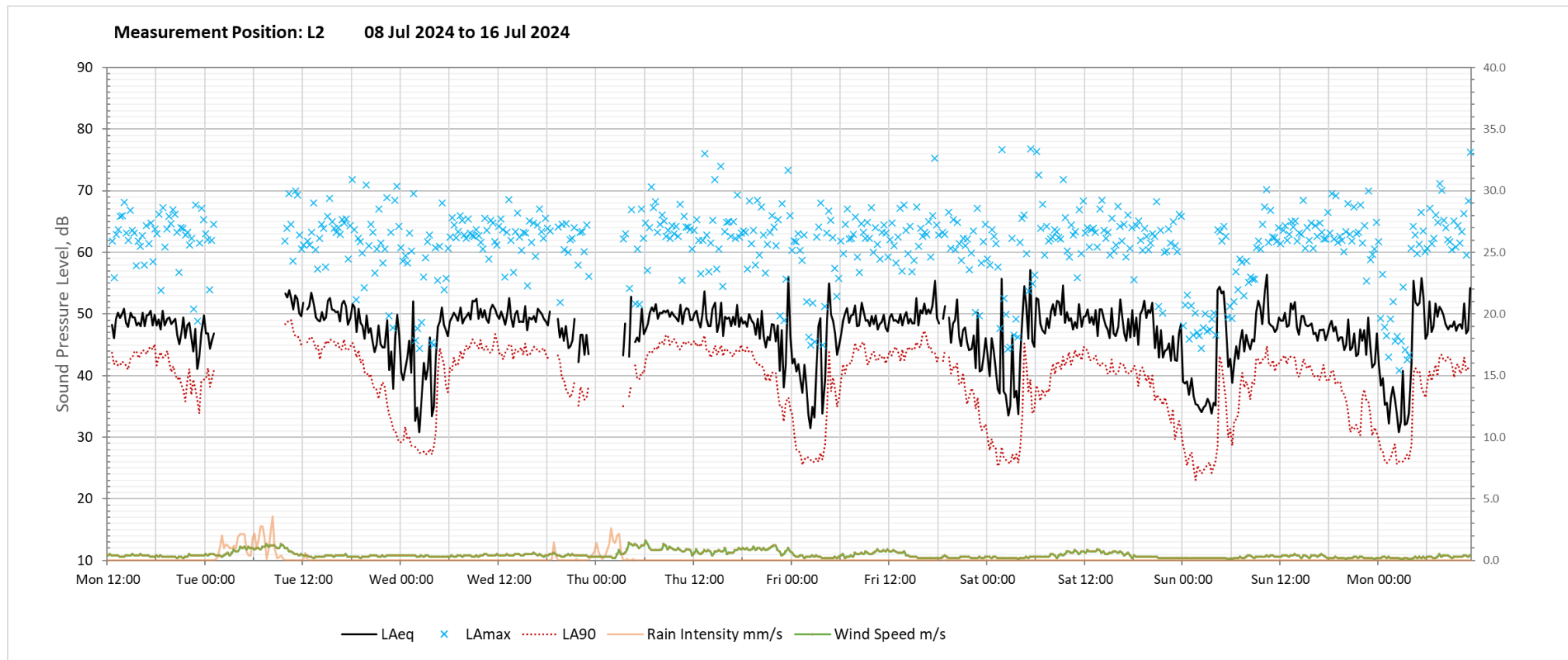


Figure A-2 - Measurement time history at Position 2