Tillbridge Solar

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PEI Report Volume II Appendix 13-3: Baseline Noise Survey
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1. Introduction

1.1 This section presents the methodology and results of the baseline noise monitoring carried out to inform the construction/decommissioning and operational noise assessments. Noise monitoring locations were determined based on the Scheme location with respect to nearby noise-sensitive receptors. Measurement and receptor locations can be seen in **PEI Report Volume III Figure 13-1**.

1.2 A number of other factors were also taken into consideration when identifying these locations, including:

- Safety of the operators;
- Security of monitoring equipment; and
- Site accessibility.

2. Noise Monitoring Methodology

2.1 Baseline noise monitoring was carried out to establish the existing noise climate in the area. The monitoring procedures followed guidance from British Standard (BS) 7445-1:2003 Description and measurement of environmental noise - Part 1: Guide to quantities and procedures and BS 4142:2014+A1:2019 Methods for Rating and Assessing Industrial and Commercial Sound. Acoustic field calibrators were applied to each instrument at the start and end of each measurement to check the calibration levels.

2.2 Each unattended sound level meter was housed within a weatherproof box with batteries to power the instrument for the full measurement duration. Appropriate outdoor all-weather equipment was used on all microphones. All noise measurements included L_{Aeq}, L_{A90}, and L_{AFmax} sound level indicators over 15-minute contiguous periods.

3. Meteorological Conditions

3.1 A weather station was set up to capture weather data during the monitoring period between the 8th and 15th of July 2022. During this period, there were a few brief periods of weather that were not suitable for noise monitoring. These periods have been shown on the time history graphs for each monitoring location where data was collected between the 8th and 15th of July 2022. The data in these periods has been omitted from the overall noise level calculations. No weather data was collected for the monitoring period 15th to the 22nd of July 2022 due to livestock damaging the equipment near the end of the first monitoring period. Weather conditions during the second monitoring period where regularly checked and seen to be suitable for noise monitoring.

4. Survey Results

4.1 The baseline noise monitoring results of unattended measurements at are presented in Table 1 to Table 8.

Table 1: ML1 Noise Monitoring Results

Date	$L_{Aeq,T}$ dB			$L_{A90,T}$ dB		
	07:00-19:00	19:00-23:00	23:00-07:00	07:00-19:00	19:00-23:00	23:00-07:00
Fri 15/07/2022	72	66	62	52	38	27
Sat 16/07/2022	71	66	62	44	38	27
Sun 17/07/2022	72	67	65	44	33	29
Mon 18/07/2022	71	65	65	42	33	28
Tues 19/07/2022	70	64	65	46	31	27
Wed 20/07/2022	71	66	65	48	33	28
Thu 21/07/2022	72	66	66	49	35	26
Fri 22/07/2022	72	-	-	50	-	-
Average Weekday	71	66	65	48	34	27
Average Weekend	72	67	64	44	36	28

Table 2: ML2 Noise Monitoring Results

Date	$L_{Aeq,T}$ dB			$L_{A90,T}$ dB		
	07:00-19:00	19:00-23:00	23:00-07:00	07:00-19:00	19:00-23:00	23:00-07:00
Fri 15/07/2022	50	46	45	44	34	27
Sat 16/07/2022	48	43	46	35	29	26
Sun 17/07/2022	51	43	44	38	32	29
Mon 18/07/2022	50	48	48	36	34	27
Tues 19/07/2022	51	42	45	40	28	26
Wed 20/07/2022	50	42	47	39	30	27
Thu 21/07/2022	52	-	-	35	-	-
Fri 22/07/2022	51	44	46	39	31	27
Average Weekday	50	43	45	36	30	27
Average Weekend	50	46	45	44	34	27

Table 3: ML3 Noise Monitoring Results

Date	$L_{Aeq,T}$ dB			$L_{A90,T}$ dB		
	07:00-19:00	19:00-23:00	23:00-07:00	07:00-19:00	19:00-23:00	23:00-07:00
Fri 15/07/2022	54	48	43	40	31	24
Sat 16/07/2022	63	49	41	31	26	23
Sun 17/07/2022	55	49	42	34	29	23
Mon 18/07/2022	62	47	42	33	27	23
Tues 19/07/2022	52	45	43	36	28	23
Wed 20/07/2022	51	45	43	34	28	24
Thu 21/07/2022	52	45	42	32	27	22
Fri 22/07/2022	52	-	-	31	-	-
Average Weekday	54	46	43	34	28	23
Average Weekend	59	49	42	33	28	23

Table 4: ML4 Noise Monitoring Results

Date	$L_{Aeq,T}$ dB			$L_{A90,T}$ dB		
	07:00-19:00	19:00-23:00	23:00-07:00	07:00-19:00	19:00-23:00	23:00-07:00
Fri 15/07/2022	46	34	34	36	26	22
Sat 16/07/2022	40	42	32	32	25	25
Sun 17/07/2022	41	36	36	35	30	27
Mon 18/07/2022	49	46	40	33	30	32
Tues 19/07/2022	43	41	38	36	31	31
Wed 20/07/2022	42	33	32	36	26	23
Thu 21/07/2022	44	35	40	32	27	23
Fri 22/07/2022	46	-	-	31	-	-
Average Weekday	45	38	37	34	28	26
Average Weekend	40	39	34	34	28	26

Table 3: ML3 Noise Monitoring Results

Table 5: ML5 Noise Monitoring Results

Date	$L_{Aeq,T}$ dB			$L_{A90,T}$ dB		
	07:00-19:00	19:00-23:00	23:00-07:00	07:00-19:00	19:00-23:00	23:00-07:00
Fri 08/07/2022	47	44	39	40	34	25
Sat 09/07/2022	45	41	39	38	32	25
Sun 10/07/2022	43	42	41	36	35	29
Mon 11/07/2022	46	44	37	34	31	25
Tues 12/07/2022	45	43	41	37	31	24
Wed 13/07/2022	48	47	41	41	36	25
Thu 14/07/2022	47	45	41	41	36	24
Fri 15/07/2022	47	-	-	39	-	-
Average Weekday	47	45	40	39	34	25
Average Weekend	44	42	40	37	34	27

Table 6: ML6 Noise Monitoring Results

Date	$L_{Aeq,T}$ dB			$L_{A90,T}$ dB		
	07:00-19:00	19:00-23:00	23:00-07:00	07:00-19:00	19:00-23:00	23:00-07:00
Fri 08/07/2022	47	44	41	34	30	24
Sat 09/07/2022	46	40	42	34	24	25
Sun 10/07/2022	46	44	40	33	25	23
Mon 11/07/2022	44	44	45	32	25	21
Tues 12/07/2022	46	42	43	30	23	23
Wed 13/07/2022	48	47	40	37	29	27
Thu 14/07/2022	49	45	44	35	31	23
Fri 15/07/2022	49	-	-	31	-	-
Average Weekday	47	44	43	33	28	23
Average Weekend	46	42	41	34	25	24

Table 7: ML7 Noise Monitoring Results

Date	$L_{Aeq,T}$ dB			$L_{A90,T}$ dB		
	07:00-19:00	19:00-23:00	23:00-07:00	07:00-19:00	19:00-23:00	23:00-07:00
Fri 08/07/2022	-	32	33	-	26	25
Sat 09/07/2022	51	32	36	29	26	26
Sun 10/07/2022	42	35	34	27	26	25
Mon 11/07/2022	40	39	46	27	28	23
Tues 12/07/2022	48	41	44	30	25	25
Wed 13/07/2022	43	42	45	29	27	28
Thu 14/07/2022	46	46	-	30	27	-
Average Weekday	44	40	40	29	27	25
Average Weekend	46	33	35	28	26	25

Table 8: ML8 Noise Monitoring Results

Date	$L_{Aeq,T}$ dB			$L_{A90,T}$ dB		
	07:00-19:00	19:00-23:00	23:00-07:00	07:00-19:00	19:00-23:00	23:00-07:00
Fri 08/07/2022	43	34	40	34	26	24
Sat 09/07/2022	47	35	42	34	25	24
Sun 10/07/2022	41	37	43	35	26	27
Mon 11/07/2022	43	37	41	36	25	26
Tues 12/07/2022	42	35	41	33	23	24
Wed 13/07/2022	42	41	40	36	32	24
Thu 14/07/2022	40	38	44	34	25	23
Fri 15/07/2022	41	-	-	32	-	-
Average Weekday	42	37	41	34	26	24
Average Weekend	44	36	42	34	26	26

ML1 Time-History Plot

ML2 Time-History Plot

ML3 Time-History Plot

ML4 Time-History Plot

ML5 Time-History Plot

ML6 Time-History Plot

ML7 Time-History Plot

ML8 Time-History Plot