

Appendix D North site records

Audio record analysis for the North site

Table 32 Wind speed and direction corresponding to diary return records, North site

No.	Resident	Neighbours	Date	Start time	End time	Wind			
						Local		Wind turbine generator	
						Speed, m/s	Direction, deg	Speed, m/s	Direction, deg
1	No	Yes	8/04/2013	13:10	15:20	1–1.7	81–108	8.3–10.6	81–112
2	No	Yes	12/04/2013	21:30	N/A	0.3	96	2.7	327
3	No	Yes	13/04/2013	10:00	N/A	1.9	293	14.8	306
4	No	Yes	15/04/2013	09:20	N/A	0.5	69	2.8	65
5	Yes	Yes	16/04/2013	Neighb– 17:30 Res– 21:00	N/A	1.3;2.6	103;108	4.4;10.2	135;116
6	Yes	Yes	17/04/2013	17:30	N/A	1.0	92	8.5	118
7	Yes	No	18/04/2013	21:00	N/A	1.2	90	12.1	122
8	Yes	No	19/04/2013	7:00	N/A	2.8	88	18.2	96
9	Yes	No	21/04/2013	22:30	N/A	0.4	241	10.2	258
10	Yes	No	22/04/2013	7:10	N/A	0.6	258	11.3	272
11	Yes	No	22/04/2013	18:00	19:00	0.5–0.6	215–239	9.4–10.9	280–282
12	Yes	No	23/04/2013	6:40	N/A	0.4	239	3.4	211
13	Yes	No	24/04/2013	21:00	N/A	0.2	241	8.6	236
14	Yes	No	1/05/2013	23:30	N/A	2.1	116	11.2	116
15	Yes	No	2/05/2013	6:00	N/A	0.8	123	8.6	53
16	Yes	No	5/05/2013	2:30	N/A	1.3	56	15.6	72
17	No	Yes	5/05/2013	15:30	N/A	1	56	9	67
18	Yes	No	6/05/2013	7:00	N/A	0.5	112	10.8	64
19	Yes	No	9/05/2013	1:30	N/A	0.7	131	11.2	34
20	Yes	No	26/05/2013	N/A	24:00	1.7	90	11.1	100

No.	Resident	Neighbours	Date	Start time	End time	Wind			
						Local		Wind turbine generator	
						Speed, m/s	Direction, deg	Speed, m/s	Direction, deg
21	Yes	No	1/06/2013	19:00	N/A	1.5	201	7.8	186
22	Yes	No	2/06/2013	8:00	N/A	0.6	212	3.3	179

Table 33 Acoustic descriptors and analysis of audio records for diary return entries, North site

No.	Inside			Outside							Spectrum shape/blade pass frequency	Audio records (inside/outside where available)
	Infrasound, dB(G)	L _{pA,LF} , dB(A)	DEFRA	Infrasound, dB(G)	L _{pA,LF} , dB(A)	DEFRA	L _{AF,90}	L _{Ceq}	L _{Aeq}	L _{Ceq} -L _{Aeq}		
1	53.0–65.4	5.1–16.9	0	52.6–59.9	16.5–35.3	0	23.6–30.0	52.0–60.1	32.1–42.2	14.9–23	Negative	Inside – household noise Outside – other noise sources
2	38.6	5.4	0	41.1	6.2	0	23.4	40.4	29.3	11.2	Negative	Inside – not audible Outside – other noise sources
3	66.4	22.0	0	56.4	33.1	1	43.0	59.8	47.6	12.2	Negative	Inside – not audible Outside – wildlife, other noise sources
4	46.3	17.1	0	43.0	21.8	1	26.2	47.8	43.8	4.0	Negative	Inside – household activities Outside – wildlife, other noise sources
5	55.2; 61.0	9.8; 15.3	0	54.2; 57.3	22.9; 28.4	0; 1	28.4; 34.3	56.3; 57.6	50.2; 42.4	4.1; 15.2	Negative	Inside – household activities, other noise sources Outside – wildlife, other noise sources during day time, turbine noise with slight modulation in the evening

No.	Inside			Outside							Spectrum shape/blade pass frequency	Audio records (inside/outside where available)
	Infrasound, dB(G)	L _{pA,LF} , dB(A)	DEFRA	Infrasound, dB(G)	L _{pA,LF} , dB(A)	DEFRA	L _{AF,90}	L _{Ceq}	L _{Aeq}	L _{Ceq} -L _{Aeq}		
6	66.5	21.6	0	56.0	21.9	0	28.9	55.4	38.4	17	Negative	Inside – household noises Outside – wildlife, other noise sources, periodically turbine noise with slight modulation is audible
7	55.7	13.5	0	58.7	27.7	1	33.0	53.6	38.8	14.6	Negative	Inside – household noises Outside – turbine noise with slight modulation
8	61.3	19.2	1	67.7	33.3	1	50.2	76.7	57.9	18.8	Negative	Inside – other noise sources Outside – wildlife, wind gusts, other noise sources
9	50.7	11.5	0	52.8	21.6	1	30.0	50.8	32.1	18.7	Negative	Inside – not audible Outside – other noise sources, natural background
10	47.5	11.7	0	52.5	26.3	1	35.2	54.7	48.5	6.2	Negative	Inside – not audible Outside – dominated by wildlife, other noise sources, airplane noise

No.	Inside			Outside							Spectrum shape/blade pass frequency	Audio records (inside/outside where available)
	Infrasound, dB(G)	L _{pA,LF} , dB(A)	DEFRA	Infrasound, dB(G)	L _{pA,LF} , dB(A)	DEFRA	L _{AF,90}	L _{Ceq}	L _{Aeq}	L _{Ceq} -L _{Aeq}		
11	46.4–62.1	10.7–18.1	0	51.4–60.6	20.0–34.4	0–1	31.2–35.7	52.3–55.8	38.6–51.5	4.3–9.2	Negative	Inside – household and other noise sources Outside – wildlife, shower in the adjacent area
12	57.7	6.5	0	53.3	19.1	0	53.8	54.6	59.5	N/A	Negative	Inside – wildlife noise Outside – wildlife and other noise sources
13	59.4	12.6	0	55.5	21.4	0	28.7	49.2	31.4	17.8	Negative	Inside – household noise Outside – other noise sources (most likely agricultural machine)
14	59.6	20.1	1	61.0	28.1	1	36.9	64.4	38.1	26.3	Negative	Inside – pump or other domestic machine noise Outside – dominated by vegetation noise, wind farm may be audible occasionally
15	53.4	11.5	0	56.4	24.1	0	36.1	50.2	43.5	16.8	Negative	Inside – not audible Outside – dominated by wildlife

No.	Inside			Outside							Spectrum shape/blade pass frequency	Audio records (inside/outside where available)
	Infrasound, dB(G)	L _{pA,LF} , dB(A)	DEFRA	Infrasound, dB(G)	L _{pA,LF} , dB(A)	DEFRA	L _{AF,90}	L _{Ceq}	L _{Aeq}	L _{Ceq} -L _{Aeq}		
16	55.1	20.6	0	56.0	25.9	1	42.6	58.2	44.1	14.1	Negative	Inside – other noise sources Outside – vegetation, wind noise
17	50.4	10.8	0	53.3	26.2	1	38.9	57.2	39.8	17.4	Negative	Inside – household activities Outside – other noise sources
18	51.0	12.8	0	54.8	27.9	1	32.5	56.0	59.1	N/A	Negative	Inside – other noise sources Outside – wildlife, other noise sources
19	53.5	18.9	0	52.8	20.1	0	33.9	55.0	36.8	18.2	Negative	Inside – pump or home appliances noise Outside – wildlife, other noise sources
20	54.7	15.4	0	59.0	26.5	1	37.3	63.7	40.1	23.7	Negative	Inside – not audible Outside – vegetation noise, wind gusts, wind farm noise with slight modulation

No.	Inside			Outside							Spectrum shape/blade pass frequency	Audio records (inside/outside where available)
	Infrasound, dB(G)	L _{pA,LF} , dB(A)	DEFRA	Infrasound, dB(G)	L _{pA,LF} , dB(A)	DEFRA	L _{AF,90}	L _{Ceq}	L _{Aeq}	L _{Ceq} -L _{Aeq}		
21	63.9	20.3	1	66.5	34.1	1	40.0	61.7	41.6	20.1	Negative	Inside – household activities Outside – wind turbines with slight modulation, sound of rain in adjacent area
22	57.4	11.2	0	60.1	33.1	1	44.2	53.3	44.5	8.8	Negative	Inside – not audible Outside – wildlife noise with possible turbine noise as background