

Appendix A4 – Predicted Noise Levels (Mitigated Layout)

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Background Location = R2		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$0.0039x^3 + 0.0826x^2 - 0.533x + 29.031$	29	29	31	33	36	40	44	50	57	64
SA EPA Criteria		35	35	36	38	41	45	49	55	62	69
NIGHT BG Regression Line	$-0.0146x^3 + 0.5005x^2 - 3.2897x + 32.238$	26	27	29	32	35	38	42	45	48	49
EPA Night Criteria		35	35	35	37	40	43	47	50	53	54
WHO Criteria		45	45	45	45	45	45	49	55	62	69
<i>Wind Speed (Hub Height)</i>		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R1		25.1	27.9	31.5	34.9	36.6	37.1	37.1	37.1	37.1	37.1
R2*		29.7	32.5	36.1	39.5	41.2	41.7	41.7	41.7	41.7	41.7
Background Location = R6		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$-0.0091x^3 + 0.3063x^2 - 1.804x + 28.225$	25	26	28	30	32	34	36	39	40	42
SA EPA Criteria		35	35	35	35	37	39	41	44	45	47
NIGHT BG Regression Line	$-0.0145x^3 + 0.4377x^2 - 2.8665x + 30.122$	25	25	27	29	31	33	35	36	37	37
EPA Night Criteria		35	35	35	35	36	38	40	41	42	42
WHO Criteria		45	45	45	45	45	45	45	45	45	47
<i>Wind Speed (Hub Height)</i>		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R6	22.2	22.2	25.0	28.6	32.0	33.7	34.2	34.2	34.2	34.2	34.2
R7	20.9	20.9	23.7	27.3	30.7	32.4	32.9	32.9	32.9	32.9	32.9
R8	19.4	19.4	22.2	25.8	29.2	30.9	31.4	31.4	31.4	31.4	31.4
R9	18.8	18.7	21.5	25.1	28.5	30.2	30.7	30.7	30.7	30.7	30.7
R10	18.8	18.8	21.6	25.2	28.6	30.3	30.8	30.8	30.8	30.8	30.8

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Background Location = R13		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$0.0038x^3 + 0.0503x^2 - 0.0495x + 25.298$	26	27	29	31	34	37	41	46	52	59
SA EPA Criteria		35	35	35	36	39	42	46	51	57	64
NIGHT BG Regression Line	$0.0176x^3 - 0.2545x^2 + 1.994x + 20.174$	25	27	28	30	32	36	41	48	57	69
EPA Night Criteria		35	35	35	35	37	41	46	53	62	74
WHO Criteria		45	45	45	45	45	45	46	51	57	64
Wind Speed (Hub Height)		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R11*		29.0	31.8	35.4	38.8	40.5	41.0	41.0	41.0	41.0	41.0
R13*		29.2	32.0	35.6	39.0	40.7	41.2	41.2	41.2	41.2	41.2

Background Location = R14		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$0.0021x^3 + 0.0772x^2 - 0.2551x + 24.263$	25	26	27	29	32	35	38	43	48	53
SA EPA Criteria		35	35	35	35	37	40	43	48	53	58
NIGHT BG Regression Line	$0.02x^3 - 0.2626x^2 + 1.0216x + 24.109$	25	25	25	26	28	31	37	44	53	66
EPA Night Criteria		35	35	35	35	35	36	42	49	58	71
WHO Criteria		45	45	45	45	45	45	45	48	53	58
Wind Speed (Hub Height)		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R5*		32.4	35.2	38.8	42.2	43.9	44.4	44.4	44.4	44.4	44.4
R14*		30.3	33.1	36.7	40.1	41.8	42.3	42.3	42.3	42.3	42.3
R16*		30.7	33.5	37.1	40.5	42.2	42.7	42.7	42.7	42.7	42.7

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Background Location = R19		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$0.0063x^3 - 0.0518x^2 + 0.3486x + 29.281$	30	31	31	32	34	36	39	42	47	52
SA EPA Criteria		35	36	36	37	39	41	44	47	52	57
NIGHT BG Regression Line	$0.0022x^3 + 0.0703x^2 - 0.6383x + 29.799$	29	29	30	31	33	35	38	42	46	51
EPA Night Criteria		35	35	35	36	38	40	43	47	51	56
WHO Criteria		45	45	45	45	45	45	45	47	52	57
<i>Wind Speed (Hub Height)</i>		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R17		23.1	25.9	29.5	32.9	34.6	35.1	35.1	35.1	35.1	35.1
R19		24.8	27.6	31.2	34.6	36.3	36.8	36.8	36.8	36.8	36.8
R20		23.2	26.0	29.6	33.0	34.7	35.2	35.2	35.2	35.2	35.2
R22		22.6	25.4	29.0	32.4	34.1	34.6	34.6	34.6	34.6	34.6
Background Location = R24		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$0.0006x^3 + 0.1121x^2 - 0.721x + 29.856$	29	30	31	32	35	37	41	44	49	54
SA EPA Criteria		35	35	36	37	40	42	46	49	54	59
NIGHT BG Regression Line	$-0.0012x^3 + 0.2153x^2 - 1.8413x + 31.706$	28	28	29	31	34	37	41	46	52	58
EPA Night Criteria		35	35	35	36	39	42	46	51	57	63
WHO Criteria		45	45	45	45	45	45	46	49	54	59
<i>Wind Speed (Hub Height)</i>		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R24		19.4	22.2	25.8	29.2	30.9	31.4	31.4	31.4	31.4	31.4

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Background Location = R25		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$0.0114x^3 - 0.1507x^2 + 0.8519x + 21.455$	23	24	24	25	26	29	32	36	42	50
SA EPA Criteria		35	35	35	35	35	35	37	41	47	55
NIGHT BG Regression Line	$0.0022x^3 + 0.0046x^2 + 0.1516x + 19.907$	21	21	22	23	24	26	27	30	32	35
EPA Night Criteria		35	35	35	35	35	35	35	35	37	40
WHO Criteria		45	45	45	45	45	45	45	45	47	55
<i>Wind Speed (Hub Height)</i>		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R25*		25.4	28.2	31.8	35.2	36.9	37.4	37.4	37.4	37.4	37.4
R26*		21.6	24.4	28.0	31.4	33.1	33.6	33.6	33.6	33.6	33.6
R29		21.7	24.5	28.1	31.5	33.1	33.6	33.6	33.6	33.6	33.6

Background Location = R30		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$0.0021x^3 + 0.0379x^2 - 0.071x + 26.561$	27	28	29	30	32	34	36	40	43	47
SA EPA Criteria		35	35	35	35	37	39	41	45	48	52
NIGHT BG Regression Line	$8E-05x^3 + 0.1703x^2 - 2.0978x + 31.624$	26	25	25	26	28	30	33	37	41	46
EPA Night Criteria		35	35	35	35	35	35	38	42	46	51
WHO Criteria		45	45	45	45	45	45	45	45	48	52
<i>Wind Speed (Hub Height)</i>		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R30*		31.0	33.8	37.4	40.8	42.4	42.9	42.9	42.9	42.9	42.9
R33*		29.4	32.2	35.8	39.2	40.9	41.4	41.4	41.4	41.4	41.4

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Background Location = R32		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$-0.002x^3 + 0.1453x^2 - 0.8862x + 31.129$	30	30	32	33	35	37	40	42	45	49
SA EPA Criteria		35	35	37	38	40	42	45	47	50	54
NIGHT BG Regression Line	$-0.0001x^3 + 0.121x^2 - 0.9889x + 31.088$	29	29	30	31	33	36	38	42	45	49
EPA Night Criteria		35	35	35	36	38	41	43	47	50	54
WHO Criteria		45	45	45	45	45	45	45	47	50	54
Wind Speed (Hub Height)		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R31*		27.9	30.7	34.3	37.7	39.1	39.5	39.5	39.5	39.5	39.5
R32*		33.7	36.5	40.1	43.7	44.5	44.7	44.7	44.7	44.7	44.7

Background Location = R34		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$-0.0104x^3 + 0.3096x^2 - 0.7489x + 22.545$	24	26	29	32	36	39	42	45	47	48
SA EPA Criteria		35	35	35	37	41	44	47	50	52	53
NIGHT BG Regression Line	$-0.0233x^3 + 0.7447x^2 - 5.1951x + 34.199$	24	25	27	30	34	37	41	44	46	47
EPA Night Criteria		35	35	35	35	39	42	46	49	51	52
WHO Criteria		45	45	45	45	45	45	47	50	52	53
Wind Speed (Hub Height)		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R34*		29.5	32.3	35.9	39.3	40.8	41.2	41.2	41.2	41.2	41.2
R35*		25.9	28.7	32.3	35.7	37.4	37.8	37.8	37.8	37.8	37.8

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Background Location = R36		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$0.0018x^3 + 0.0976x^2 - 1.1709x + 25.238$	22	22	23	24	25	27	30	34	38	43
SA EPA Criteria		35	35	35	35	35	35	35	39	43	48
NIGHT BG Regression Line	$-6E-05x^3 + 0.1693x^2 - 2.0032x + 24.906$	19	19	19	20	22	24	27	31	35	40
EPA Night Criteria		35	35	35	35	35	35	35	36	40	45
WHO Criteria		45	45	45	45	45	45	45	45	45	48
<i>Wind Speed (Hub Height)</i>		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R36*		25.2	28.0	31.6	35.2	35.8	36.0	36.0	36.0	36.0	36.0
R38		23.9	26.7	30.3	33.9	34.7	35.0	35.0	35.0	35.0	35.0
R64*		22.0	24.8	28.4	31.8	33.5	34.0	34.0	34.0	34.0	34.0

Background Location = R41		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$-0.0129x^3 + 0.408x^2 - 2.1358x + 21.869$	19	21	23	25	29	32	35	37	39	40
SA EPA Criteria		35	35	35	35	35	37	40	42	44	45
NIGHT BG Regression Line	$-0.0324x^3 + 0.894x^2 - 5.6692x + 26.728$	16	18	20	24	27	30	33	34	33	29
EPA Night Criteria		35	35	35	35	35	35	38	39	38	35
WHO Criteria		45	45	45	45	45	45	45	45	45	45
<i>Wind Speed (Hub Height)</i>		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R41*		31.1	33.9	37.5	40.9	42.6	43.1	43.1	43.1	43.1	43.1
R42*		22.0	24.8	28.4	31.9	33.5	34.0	34.0	34.0	34.0	34.0

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Background Location = R44		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$-0.0064x^3 + 0.3077x^2 - 2.1782x + 27.62$	23	24	25	28	30	33	37	41	45	49
SA EPA Criteria		35	35	35	35	35	38	42	46	50	54
NIGHT BG Regression Line	$-0.0051x^3 + 0.2755x^2 - 2.1163x + 25.414$	21	21	23	24	27	30	33	37	41	45
EPA Night Criteria		35	35	35	35	35	35	38	42	46	50
WHO Criteria		45	45	45	45	45	45	45	46	50	54
Wind Speed (Hub Height)		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R40		15.9	18.7	22.3	25.7	27.3	27.7	27.7	27.7	27.7	27.7
R44*		25.2	28.0	31.6	35.1	36.4	36.7	36.7	36.7	36.7	36.7
R65		21.9	24.7	28.3	31.7	33.4	33.9	33.9	33.9	33.9	33.9

Background Location = R46		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$0.0034x^3 + 0.0984x^2 - 0.7685x + 26.6$	25	26	27	29	32	36	40	46	52	60
SA EPA Criteria		35	35	35	35	37	41	45	51	57	65
NIGHT BG Regression Line	$-0.0223x^3 + 0.7267x^2 - 5.1643x + 33.143$	23	23	25	28	32	36	40	43	45	46
EPA Night Criteria		35	35	35	35	37	41	45	48	50	51
WHO Criteria		45	45	45	45	45	45	45	51	57	65
Wind Speed (Hub Height)		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R45		24.2	27.0	30.6	34.1	35.2	35.6	35.6	35.6	35.6	35.6
R46*		30.6	33.4	37.0	40.4	41.9	42.4	42.4	42.4	42.4	42.4

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Background Location = R49		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$-0.0042x^3 + 0.1889x^2 - 0.8856x + 25.226$	25	26	27	29	31	34	36	39	42	45
SA EPA Criteria		35	35	35	35	36	39	41	44	47	50
NIGHT BG Regression Line	$-0.0258x^3 + 0.7838x^2 - 5.8263x + 32.991$	20	20	22	24	27	30	33	35	35	33
EPA Night Criteria		35	35	35	35	35	35	38	40	40	38
WHO Criteria		45	45	45	45	45	45	45	45	47	50
Wind Speed (Hub Height)		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R47		23.5	26.3	29.9	33.4	35.0	35.4	35.4	35.4	35.4	35.4
R48		22.3	25.1	28.7	32.1	33.7	34.1	34.1	34.1	34.1	34.1
R49*		25.4	28.2	31.8	35.2	36.7	37.2	37.2	37.2	37.2	37.2
Background Location = R51		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$-0.0112x^3 + 0.4204x^2 - 3.0804x + 31.643$	25	26	27	29	32	35	38	41	44	46
SA EPA Criteria		35	35	35	35	37	40	43	46	49	51
NIGHT BG Regression Line	$-0.018x^3 + 0.7135x^2 - 5.7973x + 34.583$	21	21	23	26	30	35	40	45	50	54
EPA Night Criteria		35	35	35	35	35	40	45	50	55	59
WHO Criteria		45	45	45	45	45	45	45	46	49	51
Wind Speed (Hub Height)		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R50		23.4	26.2	29.8	33.3	34.5	34.9	34.9	34.9	34.9	34.9
R51*		24.5	27.3	30.9	34.4	35.4	35.7	35.7	35.7	35.7	35.7
R53		21.4	24.2	27.8	31.3	32.2	32.5	32.5	32.5	32.5	32.5

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Background Location = R52		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$0.0016x^3 + 0.1009x^2 - 0.9471x + 30.519$	28	29	30	31	33	35	39	42	47	52
SA EPA Criteria		35	35	35	36	38	40	44	47	52	57
NIGHT BG Regression Line	$-0.0062x^3 + 0.2728x^2 - 2.0066x + 26.692$	23	23	24	26	28	30	33	36	39	41
EPA Night Criteria		35	35	35	35	35	35	38	41	44	46
WHO Criteria		45	45	45	45	45	45	45	47	52	57
Wind Speed (Hub Height)		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R52*		20.3	23.1	26.7	30.2	31.1	31.5	31.5	31.5	31.5	31.5

Background Location = R54		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$-0.0033x^3 + 0.3137x^2 - 2.6897x + 34.152$	28	28	30	32	35	40	45	50	57	64
SA EPA Criteria		35	35	35	37	40	45	50	55	62	69
NIGHT BG Regression Line	$-0.0094x^3 + 0.4771x^2 - 3.5489x + 32.598$	25	26	28	31	36	40	46	52	58	65
EPA Night Criteria		35	35	35	36	41	45	51	57	63	70
WHO Criteria		45	45	45	45	45	45	50	55	62	69
Wind Speed (Hub Height)		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R54*		21.3	24.1	27.7	31.2	32.7	33.2	33.2	33.2	33.2	33.2

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Background Location = R56		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$-0.0086x^3 + 0.321x^2 - 2.0034x + 29.155$	26	27	28	30	33	35	38	41	44	46
SA EPA Criteria		35	35	35	35	38	40	43	46	49	51
NIGHT BG Regression Line	$-0.0136x^3 + 0.5228x^2 - 4.3054x + 33.647$	24	24	25	27	29	33	36	39	42	45
EPA Night Criteria		35	35	35	35	35	38	41	44	47	50
WHO Criteria		45	45	45	45	45	45	45	46	49	51
Wind Speed (Hub Height)		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R56		23.7	26.5	30.1	33.5	34.6	35.0	35.0	35.0	35.0	35.0
R58		16.3	19.1	22.7	26.2	27.5	27.9	27.9	27.9	27.9	27.9
Background Location = R60		3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
B/G Regression Line	$-0.0195x^3 + 0.5635x^2 - 3.7504x + 38.008$	31	31	33	35	37	40	42	43	43	41
SA EPA Criteria		36	36	38	40	42	45	47	48	48	46
NIGHT BG Regression Line	$-0.0316x^3 + 0.8557x^2 - 5.917x + 41.243$	29	29	31	34	36	38	39	39	37	32
EPA Night Criteria		35	35	36	39	41	43	44	44	42	37
WHO Criteria		45	45	45	45	45	45	47	48	48	46
Wind Speed (Hub Height)		4.3	5.7	7.2	8.6	10.0	11.5	12.9	14.3	15.8	17.2
R59*		22.2	25.0	28.6	32.0	33.6	34.1	34.1	34.1	34.1	34.1
R60*		20.9	23.7	27.3	30.7	32.4	32.9	32.9	32.9	32.9	32.9
R61*		20.0	22.8	26.4	29.8	31.5	32.0	32.0	32.0	32.0	32.0
R62		20.4	23.2	26.8	30.2	31.8	32.3	32.3	32.3	32.3	32.3
R63		19.9	22.7	26.3	29.7	31.3	31.8	31.8	31.8	31.8	31.8