Queensland Separation Distance Calculation

The Queensland separation distance formula is

Separation distance = $N^{0.6}$ x S1 x S2 x S3 x S4

Where	N	is the number of birds divided by 1000	= 16 (16000/1000)[1]
	S1	farm design and management factor	= 1 (for broiler farms)[2]
	S2	land use sensitivity factor	= 26 (for rural residential areas)
	S3	surface roughness factor	= 1.2 (for long grass/few trees)[3]
	S4	terrain weighting factor	= 1.5 (for down slope)[4]

Separation distance = 247

Notes

[1] The effects of the sheds are not cumulative on the site. The two sheds close together at the southwestern corner of the Tegel property represent the worst case. Hence 2 sheds at 8,000 birds each was used for the number of birds in the equation.

[2] A S1 factor for breeder farms was not available. The only other S1 factor given was 0.6 for layers. Laying sheds have different designs to both broiler and breeder sheds. As both breeders and broilers are housed uncaged in sheds as opposed to being caged, the S1 factor for breeders is likely to be most similar to the S1 factor for broilers.

[3] The review of the Queensland separation distances recommended a multiplier of 1.2 for long grass/few trees. This is the most conservative surface roughness factor.[1]

[4] The review of Queensland separation distances recommend that the factor for "Sloping terrain-down slope" of 1.5 is used wherever receptors are on the same or lower elevation to the source[2].

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[1] Australian Government Rural Industries Research and Development Corporation "Separation Distances for Broiler Farms – Verifying methods and investigating the effects of thermal buoyancy" RIRDC Publication No. 10/073, June 2010.

[2] Ibid at 1.