



CEE Consultants PTY LTD

BROMPTON LODGE DEVELOPMENT

ODOUR BUFFER ASSESSMENT

**Prepared for:
WATSONS PTY LTD**

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1. INTRODUCTION

Watsons Pty Ltd retained CEE Consultants by to undertake an assessment of appropriate separation distances between the proposed Brompton Lodge Development and a nearby broiler farm (based on odours). The work was carried out by Dr Terry Bellair.

2. BACKGROUND

Figure 1 shows the approximate boundaries of the proposed Brompton Lodge development site, which is bounded to the north by Ballarto Road Extension, to the west by the Westernport Highway and to the southeast by the Cranbourne – Frankston Road. The land is zoned Urban Growth Zone (UGZ) and currently supports a range of rural activities.

A 7-shed broiler farm is located about 170m southeast of the Brompton Lodge site, in a Green Wedge 2 Zone (GWZ2). Preparation of the master plan for the development and the staging of the development will need to have regard to the provisions of the 2009 Broiler Code¹ while the broiler farm continues to operate.

¹ Department of Primary Industries (September 2009). “Victorian Code for Broiler Farms 2009”.



Figure 1. Recent Nearmap image showing Brompton Lodge development site (approximate boundaries highlighted), the broiler sheds, residences in the GWZ2 area to the south and southeast of the sheds, and residences and a childcare centre in the Brookland Greens Estate to the northeast

3. THE BROILER FARM

The broiler farm, which is located at 271 – 275 Pearcedale Road, Cranbourne South, was established over 45 years ago. It comprises seven “old-style” cross-flow sheds with a total capacity of 152,200 birds². Under the provisions of both the 2001 Broiler Code and the current 2009 Broiler Code, the broiler farm cannot be expanded, because it fails to meet either the Code’s boundary or separation distances to dwellings located to the south and southwest.

We viewed the broiler farm from Pearcedale Road on 22 March 2013, when it appeared to be in a semi-derelict condition, with the end doors open a number of sheds (indicating that birds were not present in those sheds). I understand that the broiler farm is now owned by an entity which also has an interest in land east of Pearcedale/Ballarto roads which is within the Botanic Ridge Precinct Structure Plan (PSP) area, and is currently being operated “in some capacity”, pending development of the land within the PSP. For purposes of this assessment, it has been assumed, conservatively, that the broiler farm will continue to operate with up to 152,200 birds.

² Based on a 2 September 1998 submission by KLM Planning Consultants to the Amendment L218 Panel on behalf of the (then) owners of the broiler farm (M & R Nominees (Joanne Harpur) and another.

4. BUFFER/SEPARATION DISTANCE GUIDELINES

4.1 EPA Separation Distance Guidelines

EPA's Publication 1518 "Recommended separation distances for industrial residual air emissions"³, which recently replaced the EPA's earlier buffer distance guidelines⁴, specifies that the recommended separation distance for broiler farms should be based on the provisions of the 2009 Broiler Code.

4.2 Broiler Code (2009)

The current Broiler Code was gazetted in September 2009. Relevant provisions include:

- The Code's separation distances apply only to the development or expansion of broiler farms; however, they may be used as a guide to identify locations where future sensitive uses may be adversely affected by broiler farm emissions;
- The separation distance for the Pearcedale Road broiler farm is 407 m, calculated on the basis of the formula set out in Section 5 of the Broiler Code, assuming a total farm capacity of 152,200 birds;
- The separation distance is measured between the nearest point of any broiler shed and a sensitive use; and
- The Code notes (on page 54) that:
"Direct application of the separation distances between new sensitive uses and existing farms built prior to the Code (that is prior to 2001) however can be problematic and unreasonable for surrounding land-owners. Often these farms were established at a time when there was no expectation that the approval of the farm would limit the use of adjoining land. In these cases however, the historical performance of these farms in relation to the management of odour will be well established, and the responsible authority may be able to consider the need to maintain an adequate separation distance with the site specific knowledge of the broiler farm's likely impact."

Figure 2 shows the extent to which a 407 m separation distance intrudes into the proposed Brompton Lodge site. However, the 2009 Broiler Code does not preclude the establishment of sensitive uses within 407 m of the broiler farm (even while it is operating at full capacity). Rather, it suggests that consideration be given to its operational and complaint history when determining an appropriate separation distance, particularly as: (1) it has been operating for over 45 years; and (2) a substantial number of residents live nearby (who would be potential complainants should odours have been a significant issue).

³ EPA (March 2013). "Recommended separation distances for industrial residual air emissions". Publication No 1518.

⁴ EPA (1990). "Recommended Buffer Distances for Industrial Residual Air Emissions". EPA Publication AQ 2/86.

The benefit of this approach is that the complaint history provides a “real world” insight into any significant effects of the broiler operation has on local amenity, while also taking account of a range of site-specific issues (such as the scale and level of environmental management of the operation, and topographic and meteorological factors which influence the propagation of odours).



Figure 2. Brompton Lodge preliminary master plan, showing location of broiler sheds and area within 407 m of the sheds

4.3 VPP - Clause 52.10

The Table to Clause 52.10 of the planning scheme does not include a separation distance for broiler farms.

5. RELATIVE ODOUR MODELLING

It should not be assumed that the zone of potential odour impacts in the vicinity of an odour source can simply be defined by projecting a (theoretical) separation distance equally in all directions around the source. In reality, the relative risks of odour impacts at different points of the compass are influenced largely by two factors: (1) the frequency distribution of wind directions occurring under “worst case” atmospheric dispersion conditions; and (2) the overall dimensions and geometry of the odour source(s).

We used EPA’s “Ausplume” plume dispersion model to determine the extent to which these two factors are likely to influence the distribution of relative odour risk around the broiler farm. The model run was based on a purely arbitrary odour emission rate from the overall area occupied by the seven broiler sheds (approximated by a 130 by 190 m rectangle) and EPA’s 2002 Dandenong meteorological file, which is representative of local meteorological conditions. We stress that the model predictions represent relative (not absolute) odour concentrations.

Figure 3 is a plot showing the predicted (99.9 percentile) relative odour concentrations in the vicinity of the broiler farm (the broiler sheds are located within the red rectangle). It is apparent that the wind directions under worst case meteorological conditions have little influence on the distribution of relative odour concentrations, which are predominantly influenced by the geometry of the broiler farm “footprint”.

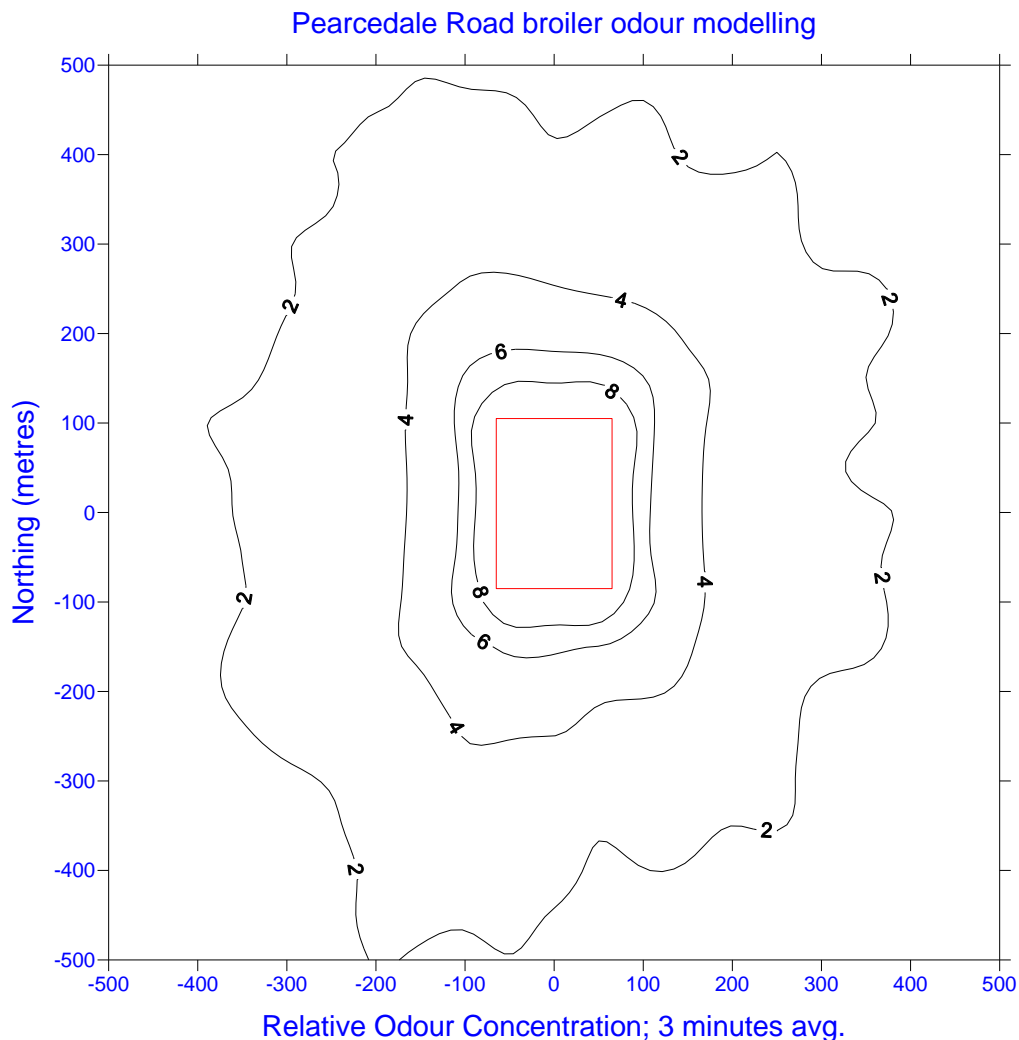


Figure 3. Predicted relative odour concentrations within a 1 km by 1 km area around the broiler farm

It follows that the shape of the potential odour impact zone has a roughly elliptical shape, and extends approximately 25% further along the N-S axis than the E-W axis.

6. HISTORICAL PERFORMANCE OF BROILER FARM

As the broiler farm was established long before the introduction of the 2001 Broiler Code, and there are a significant number of residences in its vicinity, it appropriate *“to consider the need to maintain an adequate separation distance with the site specific knowledge of the broiler farm’s likely impact”* (direct quotation from page 54 of the 2009 Broiler Code).

Our analysis of a recent Nearmap image (Figure 1) indicates that sensitive land uses in the vicinity of the broiler farm include:

- Eight residences located within 400 m, predominantly to the S and SW in the Green Wedge Zone (GWZ2);
- One residence located between 400 and 500 m, to the WSW in the GWZ2; and
- Approximately 31 residences located between 500 and 600 m – six of these are in the GWZ2 (to the SW), while about 25 residences and the “Grow to Learn” child care centre are situated to the NNE in the Brookland Greens Estate.

We understand that the sensitive uses in the Brookland Greens Estate were established several years ago up to a “line” drawn 500 m from the nearest broiler shed (presumably based on the 500 m separation distance defined by the 2001 Broiler Code for a 152,200 bird facility). However, most of the residences in the GWZ2 zone existed in February 2004, when we assessed buffer/separation distances from the Pearcedale Road broiler farm in relation to the (then) proposed clubhouse on the “Settlers Run” golf course on the eastern side of Pearcedale Road.

Our inquiries in February 2004 elicited the following advice:

- A Casey planning officer advised that:
 - There do not appear to be any complaints on file relating to the broiler farm at 271-275 Pearcedale Road; and
 - A number of odour complaints were attributed to a former broiler farm at 263 Pearcedale Road.
- An EPA officer checked EPA’s electronic complaints data base (which dated back to January 1996) and advised that there were no complaint records in relation to the 271-275 Pearcedale Road broiler farm, although he recalled that there had been some earlier complaints associated with odours from wet litter in the sheds (a management issue, which had apparently been addressed).

We recently contacted EPA’s Dandenong office to obtain an update on any complaints related to the 271-275 Pearcedale Road broiler farm. The EPA officer’s email response dated 18 March 2013 advised that:

“Following a search of pollution reports from our current recording system and former records system, for odour reports in Cranbourne South, I have not found any confirmed reports of odour tracked back to the broiler farm or any reports alleging the broiler farm as the source.”

It appears from the above advice that operations at the 271-275 Pearcedale Road broiler farm have not significantly affected local amenity over the past 16 years. We recognise that people residing in close proximity to the broiler farm (less than 400 m away in the GWZ2) are likely to be somewhat more tolerant of occasional odours (because of their “semi-rural”

environment) than typical urban residents. However, based on the plume dispersion modelling results discussed in Section 5, the residences and child care centre about 500 m to the north in the Brookland Greens Estate would have a broadly similar level of risk of exposure to odours from the broiler farm than would (future) residents 400 m to the west (in the Brompton Lodge development).

7. FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Our findings, conclusions and recommendations are summarised below.

1. The 271-275 Pearcedale Road broiler farm was established over 45 years ago and has had the capacity to accommodate up to 152,200 birds.
2. For purposes of this assessment, it has been assumed that it continues to operate at full capacity, despite indications that this is no longer the case.
3. The separation distance for a 152,200 bird facility is 407 m, calculated on the basis of the current (2009) Broiler Code.
4. The Code's separation distances apply only to the development or expansion of broiler farms, but can be used as a guide when sensitive uses are proposed to be developed in their vicinity.
5. The Code notes that direct application of the separation distances between new sensitive uses and farms built prior to 2001 "*can be problematic and unreasonable for surrounding landowners*" and suggests that consideration be given to the historical performance of the farm in terms of odour management when considering actual separation distances.
6. The absence of recorded odour complaints related to the broiler farm over at least the past 16 years suggests that it has not been having any significant adverse effect on local amenity, as there are eight residences within 400 m and a total of about 40 residences and a child care centre within 600 m.
7. On the basis of available information and odour model predictions, we consider that there is a low probability that odours from the broiler farm (while housing up to 152,200 birds) will significantly affect the amenity of future residents in the Brompton Lodge development area within 350 to 400 m from the nearest (operational) broiler shed - this assumes that the broiler farm will continue to be well managed.
8. From a purely odour management perspective, there would be desirable to stage the Brompton Lodge development so that the relatively small area located within 350 to 400 m of (operating) broiler sheds is left until last, as this would enable the odour risk to be re-evaluated on the basis of experience, and also reflect the likelihood that the broiler farm will cease to operate in the short to medium-term.