

Jeff Bulfin
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13 February 2018

Dear Mr Bulfin,

30 Greenacre Drive, Tahmoor – Odour Impact Assessment

Pacific Environment has been requested by Mr Jeff Bulfin of Precise Planning (hereafter referred to as the Proponent) to provide an odour assessment report for the proposed residential developments at 30 Greenacre Drive, Tahmoor, New South Wales (NSW).

This letter report addresses a request provided by Council for an odour assessment report. We trust that this letter is adequate to meet the needs of Council's request. Please do not hesitate to contact me should you require any further information.

Yours sincerely



Francine Manansala
Senior Consultant – Air Quality

1 Background

The Proponent is seeking to complete a residential development (hereafter referred to as ‘the proposed development site’) under a Development Application (DA) at 30 Greenacre Drive, Tahmoor, NSW (see **Figure 1**). The proposed development site is located within Wollondilly Shire Council’s Odour Buffer Area (**Wollondilly Shire Council, 2016a and 2016b**) which forms part of the Wollondilly Local Environmental Plan (WLEP) 2011. The requirements of the WLEP which are of specific relevance to the proposed development site, and the section that they are addressed in this report are outlined in **Table 1** below.

Table 1: WLEP Clause 7.6 requirements

WLEP requirement	Relevant section of report
Clause 7.6, Section 3 – Development consent must not be granted to development on land to which this clause applies unless the consent authority has considered the following:	
(a) The impact that any odour associated with any poultry operation on adjoining land (<i>the poultry operation</i>) would have on the proposed development.	Section 2
(b) Any proposed measures incorporated into the proposed development that would limit the impact of odour emissions associated with the poultry operation.	Section 4
(c) Whether the proposed development would adversely affect the operational environment of the poultry operation.	Section 5

Council has requested that an odour assessment report be prepared to assess the potential for odour at the proposed development site.

This report therefore assesses the potential odour impacts at 30 Greenacre Drive Tahmoor, and provides recommendations to mitigate odour impacts at the proposed development site.

2 Previous assessment

Pacific Environment (formerly PAEHolmes) completed a Level 2/3 odour impact assessment for the area in 2011 (**PAEHolmes, 2011**). The study included emissions estimation and dispersion modelling of three poultry operations and their predicted impact on the East Tahmoor urban release area. The proposed development site is located within the study area of that project (see **Figure 1**).

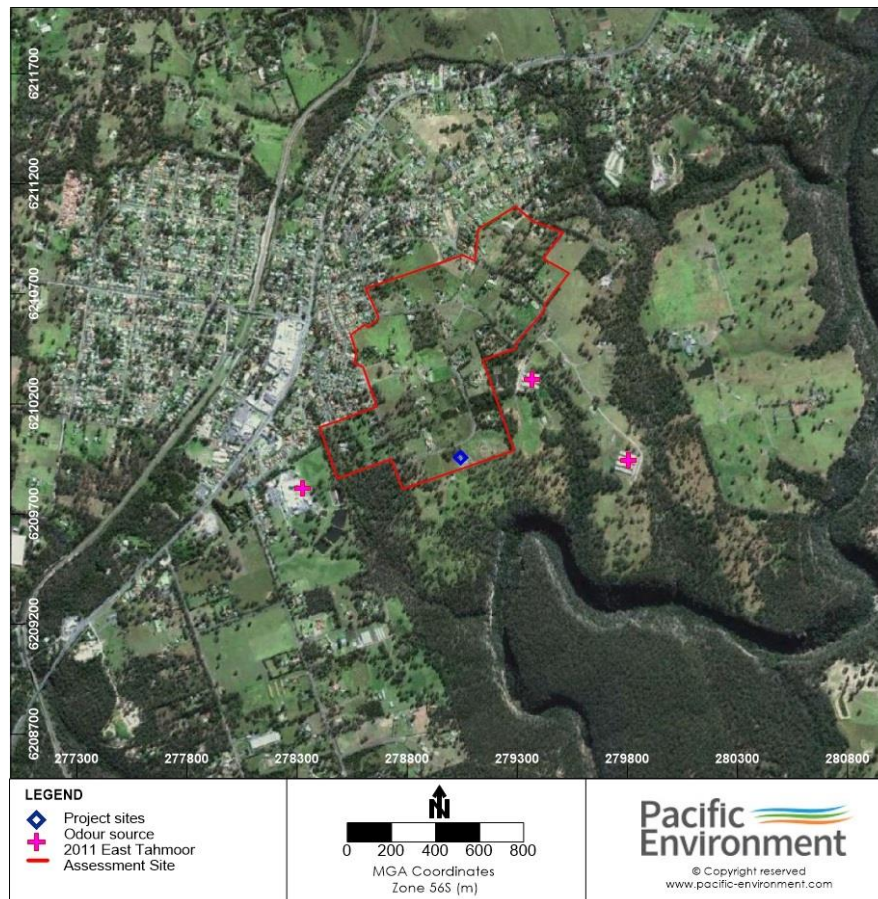


Figure 1: Area assessed in the East Tahmoor Odour Assessment and location of proposed development site (**PAEHolmes, 2011**)

The 2011 assessment identified three odour sources in the vicinity of the study area; the Ingham's turkey processing plant to the southwest of the proposed development site, and two Ingham's duck farms to the east.

The predicted odour contours for the turkey processing plant are shown below in **Figure 2**. The results show that odour from this source is predicted to be between 5 and 6 ou at 30 Greenacre Drive. The 2011 report noted that due to the nature of the assessment and availability of input data, the dispersion modelling for this source followed a conservative approach. Field odour surveys were performed in the area by PAEHolmes staff and the results found that the closest residents to the abattoir stated that odour was not an issue.

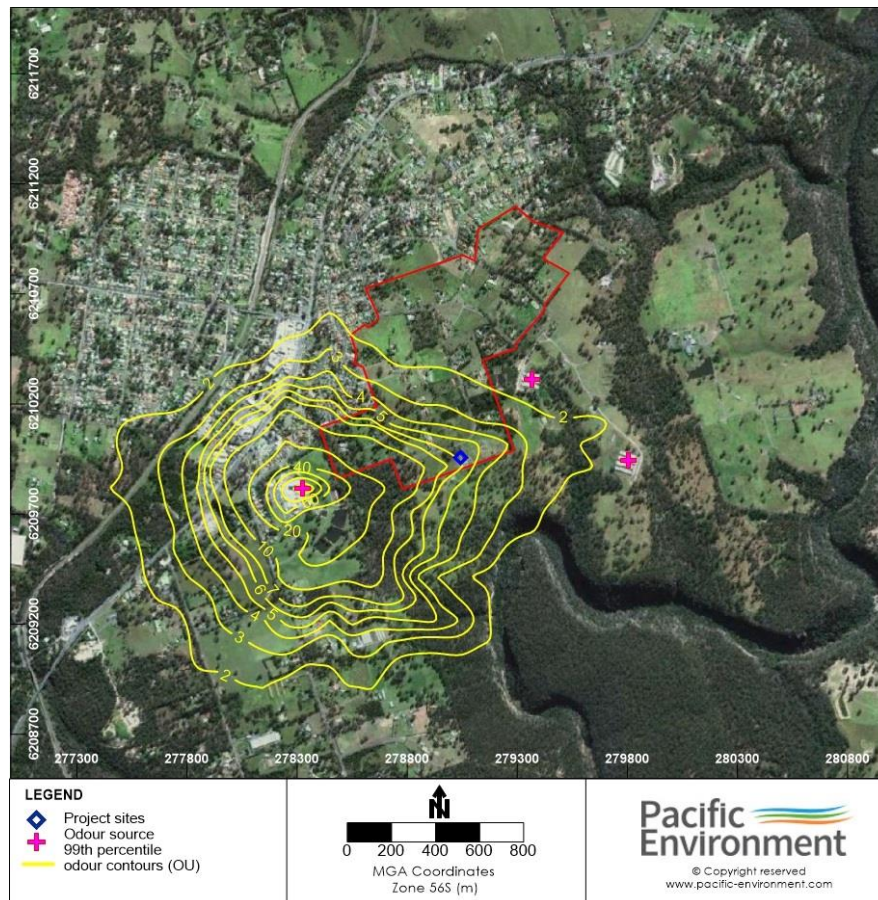


Figure 2: Modelled 99th percentile odour unit contours from Ingham's turkey processing plant (PAEHolmes, 2011)

The predicted odour contours for the two duck farms are shown in **Figure 3**. The results show that the proposed development site has been predicted to experience odour impacts of 2 ou which is below the most stringent criterion of 2 ou (PAEHolmes, 2011).

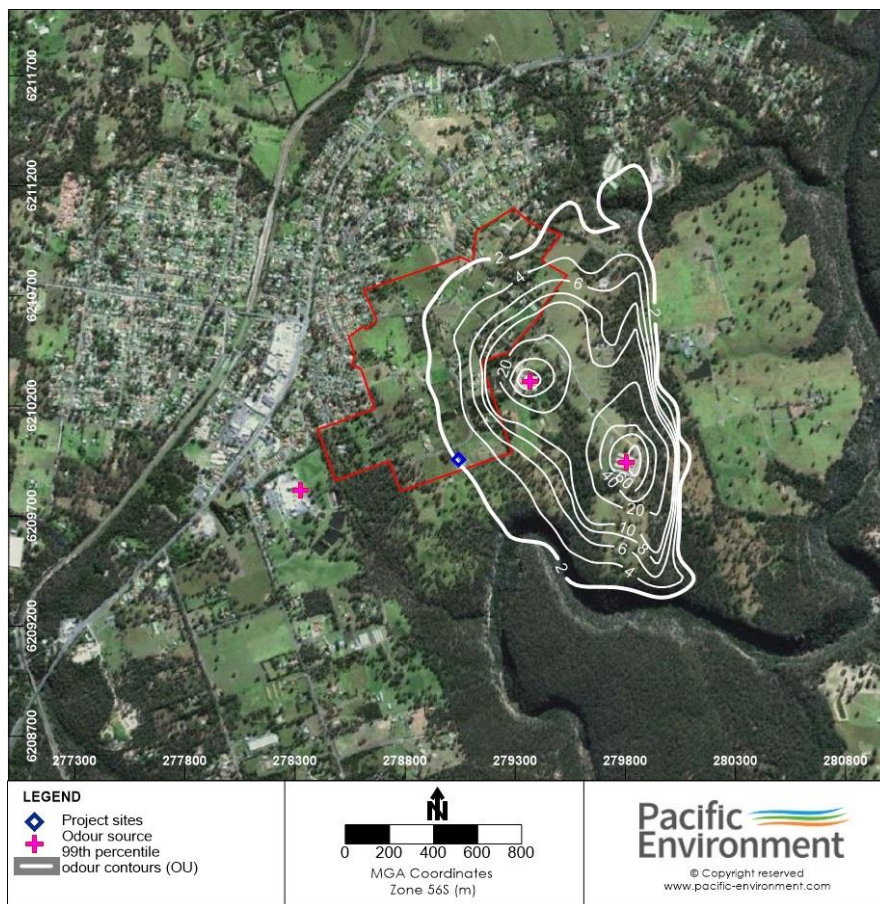


Figure 3: Modelled 99th percentile odour unit contours from nearby duck farms (PAEHolmes, 2011)

3 Other potential odour sources

Additional inspection indicates that there are a further two potential odour sources in the vicinity of the proposed development site. These are the poultry farm located at 40 Koorana Road, Picton and Wollondilly Abattoir located at 48-70 Koorana Road, Picton. Both sources are approximately 1.5 km to the northeast of the proposed development site.

In September 2017, Pacific Environment prepared an odour assessment for a subdivision project to the north of 42 and 60 Greenacre Drive and within 700 m of the poultry farm and abattoir on Koorana Road (**Pacific Environment, 2017a**).

This report included a qualitative assessment of the two odour sources based on available data. Following the submission of this report to Council, a subsequent assessment was prepared which included dispersion modelling of the Koorana Road poultry farm only. This was prepared in response to legal proceedings no. 17/212204 (**Pacific Environment, 2017b**). The revised assessment was submitted to Wollondilly Shire Council with no further comment received.

The proposed development site at 30 Greenacre Drive is more than double the distance (approximately 1.5 km) away from the sites assessed as part of the legal proceedings described above. Given that these sites were deemed to be below the most stringent odour criterion of 2 OU, the odour impact at the proposed development site at 30 Greenacre Drive would also likely be well below this assessment criterion.

4 Existing environment

4.1 Local wind data

Odour impacts at the proposed development site will be influenced by local meteorology. Meteorological conditions, such as wind speed, wind direction and atmospheric turbulence influence how often receptors are likely to be downwind of an odour source as well as how well the odour disperses in the atmosphere.

Windroses for the East Tahmoor project (as shown in **Figure 4**) as extracted from the CALMET meteorological model were provided in the 2011 PAEHolmes report. The windroses indicate that on an annual basis winds from the west south-west are most prominent. During summer the wind distribution pattern is fairly similar for all directions from the north-northeast to the southwest. In autumn, spring and winter the dominant wind directions are from the west and west south-west.

The duck farms are located to the east of the proposed development site and therefore not located upwind of the dominant westerly wind direction as shown in **Figure 4**. The turkey farm is located to the southwest of the proposed development site and therefore may be within the direction of the dominant westerly wind directions.

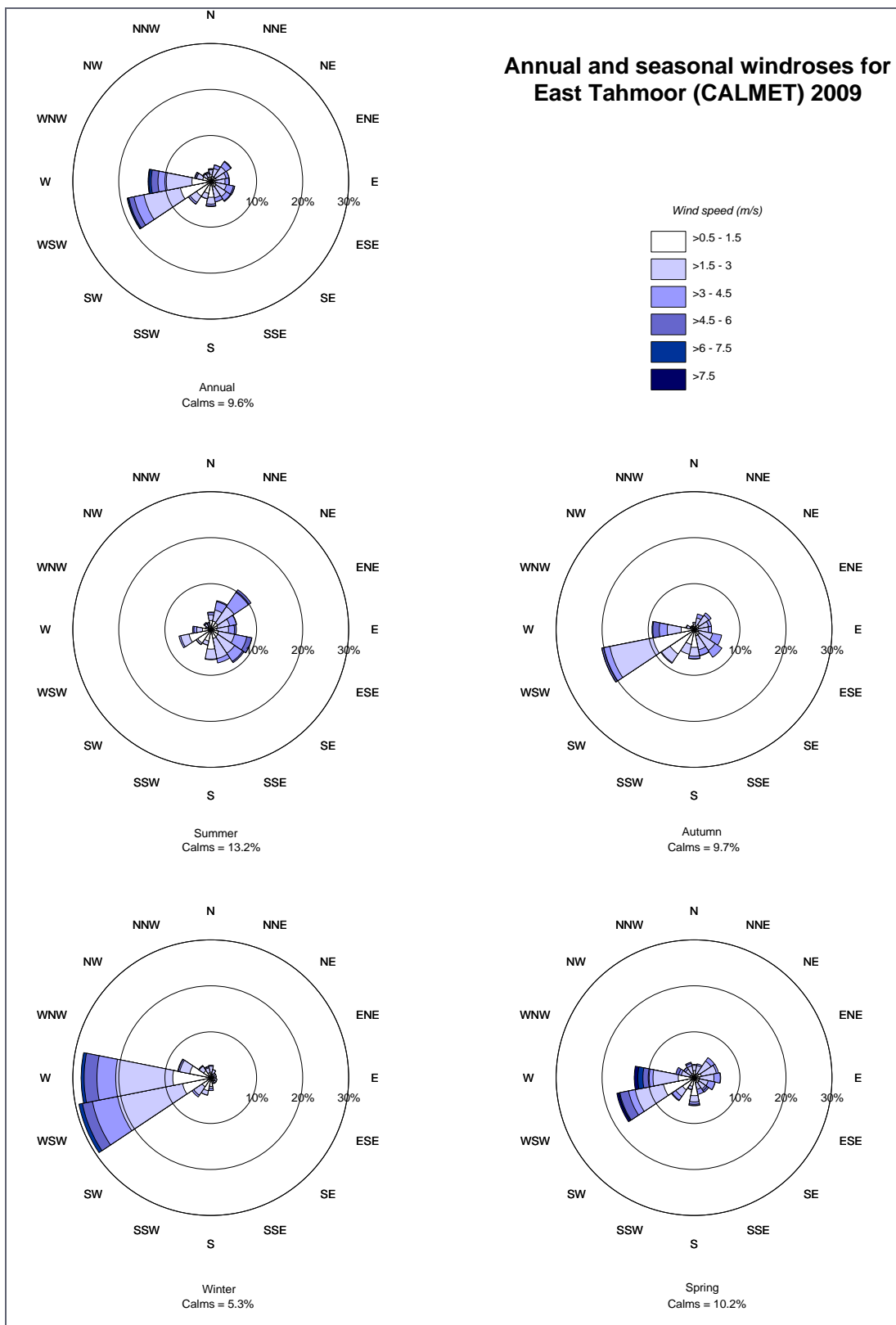


Figure 4: Annual and seasonal windroses for East Tahmoor (CALMET) (PAEHolmes, 2011)

5 Recommendations/mitigation measures

The 2011 PAEHolmes report presented a number of recommendations and measures for mitigating odour within the East Tahmoor study area and these have been reproduced below.

The following are considered good practice development controls to manage the potential for odour impacts on the proposed development site. Potential options applicable to both existing sources and potential future sources on the site are listed below for further consideration:

- Orientate buildings to provide adequate air flow, i.e. no dead end courtyards, long narrow spaces, or areas where air may stagnate. Design buildings to encourage air flow.
- Ensure that air intake to buildings is not from the direction of odour sources.
- Consider ventilation and air conditioning and design buildings so living and work areas of buildings do not face odorous sources.
- Build continuous dense landscaping around the subdivided lots to assist in reducing odour by increasing dispersion.
- Consider removing development restrictions if an odour source ceases operation and has no prospect of restarting.
- Establish a communication strategy so that individuals living or working at the proposed development site are kept informed about the operation of odour generating facilities and are consulted about aspects of these operations likely to result in odour.
- Investigate the practicality of ensuring those residing at the proposed development site have air-conditioning or other measures to reduce the impacts of odour emissions.

5.1 Alternative measures

It is noted that in situations similar to this, when land used for residential purposes encroaches on existing odour sources, some local councils have placed encumbrances on the title of odour affected lots in the form of Section 149, part 5 certificates. Such a certificate highlights (in the contract for the sale of land) to any prospective purchaser that the land may be affected by offensive odour. The form of the certificate would normally contain a plain English paragraph describing the source, nature and extent of the odour, and often a diagram. It is believed that individuals that are particularly sensitive to odour may avoid such land, and as the NSW EPA criteria are designed to protect sensitive receptors, it is less likely that dissatisfaction and odour issues would arise for future owners of the project land. Legislation requires such certificates to be made known to prospective purchasers, hence reducing the potential scope for complaint.

The Section 149, part 5 certificate may for example state the following:

ODOUR INUNDATION

"This land is in close proximity to active duck sheds and from time to time residents of this site may experience odour from the operation of these duck sheds. You are further advised that the sheds have no intention to cease operation at this stage."

Such measures have historically been applied favourably by Camden Council (for example) to good effect.

6 Conclusion

Wollondilly Shire Council has requested that an odour assessment report be completed for the proposed residential development at 30 Greenacre Drive, Tahmoor, NSW.

In 2011 Pacific Environment (then PAEHolmes) completed an odour impact assessment for the area which includes the land on which the proposed development is located. The study included emissions estimation and dispersion modelling of three poultry operations and their predicted impact on the East Tahmoor urban release area. The odour contours for that study have been analysed in relation to the location of the proposed development site.

The model results for the turkey processing plant show that odour is predicted to be between 5 and 6 ou at 30 Greenacre Drive. The 2011 report noted that due to the nature of the assessment and availability of input data, the dispersion modelling for this source followed a conservative approach. Field odour surveys were performed in the area by PAEHolmes staff and the results found that the closest residents to the abattoir stated that odour was not an issue.

The model results from the two duck farms showed that odour was predicted at 2 ou which is below the most stringent criterion at the proposed development site.

The poultry farm and abattoir located at Koorana Road, approximately 1.5 km from the proposed development site, are not likely to pose an issue in terms of odour.

Windroses produced in the original 2011 study showed that the dominant wind directions would advert odour from the duck farms away from the proposed development site but potentially towards the site in the case of the turkey farm.

Even if the turkey farm is operating at levels assumed in the 2011 assessment, given the conservative nature of the assessment, the potential for odour impacts at 30 Greenacre Drive would be considered to be low.

It should also be noted that given the distance and nature of the developments (i.e. residential), the proposed development site is not anticipated to adversely affect the environment of the poultry farms in any way.

Notwithstanding the above, this letter has provided some odour mitigation measures which are considered good practice development controls to manage the potential for odour impacts on the proposed development site in the event that the proposed developments and the surrounding odour sources may coexist. Whilst these mitigation measures may not be considered a requirement for operation, they have been provided here for information.

References

- Pacific Environment (2017a)
42 and 60 Greenacre Drive, Tahmoor – Odour Impact Assessment. Prepared for Precise Planning. August 2017.
- Pacific Environment (2017b)
78/80 River Road, Tahmoor – Odour Impact Assessment for Proceedings No. 17/212204. Prepared for Wollondilly Shire. December 2017.
- PAEHolmes (2011)
Odour Assessment for Odourous Operations Near the Proposed East Tahmoor Residential Rezoning, Tahmoor, NSW. Final Report. Prepared for Wollondilly Shire Council. November 2011.
- Wollondilly Shire Council (2016a)
Odour Buffer Area Map - East Tahmoor. <http://www.wollondilly.nsw.gov.au/assets/PDF/Planning-and-Development/Guidelines-Controls/Fact-Sheets/Odour-Buffer-Area-Map-East-Tahmoor.pdf>. Accessed 12/10/16.
- Wollondilly Shire Council (2016b)
FACT SHEET - Development in Odour Buffer Areas. <http://www.wollondilly.nsw.gov.au/assets/PDF/Planning-and-Development/Guidelines-Controls/Fact-Sheets/Fact-sheet-Odour-Buffer-Area.pdf>. Accessed 12/10/16.