

Before the Independent Hearing Commissioners  
Appointed by the Taranaki Regional Council

Under the Resource Management Act 1991

In the matter of a resource consent for air discharge relating to the poultry farm  
operation at 58 Airport Drive, New Plymouth (5262-3.0)

---

**Summary Statement and Rebuttal Evidence of Deborah Anne Ryan**

14 February 2022

---

**Applicant's solicitor:**

Alex Booker  
Anderson Lloyd  
Level 3, 70 Gloucester Street, Christchurch 8013  
PO Box 13831, Armagh, Christchurch 8141  
DX Box WX10009  
p + 64 3 379 0037  
alex.booker@al.nz

**anderson  
lloyd.**

- 1 My full name is Deborah Anne Ryan. I prepared a statement of evidence (Evidence) dated 28 January 2022 on air quality matters in the role of peer reviewer for Airport Farm Trust (AFT). My qualifications and experience are set out in that statement.
- 2 I repeat the confirmation given in that statement that I have read and agree to comply with the Code of Conduct for Expert Witnesses in the Environment Court.

### **Summary**

- 3 In my Evidence, I provided comment on the Tonkin and Taylor (T+T) Assessment and the additional information prepared by Mr Pene presented in his evidence. From my consideration of the information, I concluded that for the existing operation and discharge configuration, based on my consideration of the FIDOL factors, there was potential for chronic odour effects to be experienced off-site, particularly under low wind speeds blowing from the south-to-south-east, which are relatively frequent.
- 4 In my view, however, there was no evidence of widespread significant odour impacts in the surrounding community. My experience being that if there were such impacts there would have been complaints lodged with the TRC prior to the notification of this Application.
- 5 I therefore concluded that the AFT proposal to upgrade the ventilation system, and to make other changes to the operation, would significantly reduce the likelihood (frequency, intensity and duration) of detectable off-site odours. I concluded that residual odour beyond the boundary will likely be at an acceptable level for the receiving environment. This is principally because dispersion and dilution via tall roof mounted stacks would reduce the impacts likely to be associated with the current side wall ventilation. The effect of the stacks in reducing odour impacts will be further enhanced with the operational changes and ventilation system design. There is agreement among the air quality experts on this matter.
- 6 The further information provided by Mr Pene in relation to the dispersion modelling confirms the likelihood that the effects of odour, after the proposed upgrades, will be at an acceptable level.

### **Matters raised in evidence on behalf of other parties**

- 7 Mr Van Kekem<sup>1</sup> notes the recommendations in the Odour GPG<sup>2</sup> that community consultation and odour annoyance surveys are ranked highly as assessment

---

<sup>1</sup> Paragraph 3.4

<sup>2</sup> Ministry for the Environment, Good Practice Guide for Assessing and Managing Odour, 2016 (Odour GPG)

tools. In my experience, except for large scale industrial sources near urban areas, these methods are infrequently used for odour assessments. Complaints and compliance are a primary indicator of effects for existing activities. As I stated in my Evidence, if there is a widespread significant odour impact complaints would be expected.

- 8 In my experience, historical compliance and good practice design, operation and management, risk and contingency are also important considerations that feed in to a FIDOL assessment to assess the likelihood of adverse effects of odour. Given the AFT proposal is for an upgraded operation, air dispersion modelling and experience with a similar system elsewhere are very relevant and historical performance less so, although historical performance provides a baseline. I cannot recall having seen odour diaries as an assessment method as part of an application for consent.
- 9 My experience with odour diaries is that they are typically used in evidence for enforcement; or where there is a compliance issue that the community, the consent holder and the council are working to resolve. In my experience odour diaries need a good understanding of the operations, in order to interpret the data and identify issues, or are useful to help establish a chronic odour impact for enforcement. I note, as discussed by Mr Pene, that the Brown's odour diary did not correlate with times when odour would be coming from AFT.
- 10 I note Mr Van Kekam states<sup>3</sup> that "the absence of complaints from historical operations at an existing site can provide a relatively strong level of evidential basis that an existing operation is not resulting in adverse odour effects.' He then provides the usual qualifiers on circumstances where complaint data may have limitations including a reluctance or lack of knowledge about who to complain to. As noted by Mr Bedford, in the Supplementary Officer Report (11<sup>th</sup> February 2022), the submitter group has been strongly encouraged to complain to the Taranaki Regional Council (TRC), but in the main have chosen not to.
- 11 Mr Van Kekam described the odour impacts reported by neighbours during interviews. I note that Glenis McDonald's observations align with my opinion that it is likely that there has been a chronic odour impact at the McDonald property. It appears, as noted by Mr Backshall, that residents may have become sensitised and he expects that sensitisation is a factor in the community response<sup>4</sup>. As noted by Mr Van Kekam<sup>5</sup>, there is disparity between the resident's observations of off-

---

<sup>3</sup> Paragraph 3.8

<sup>4</sup> Paragraph 4.46

<sup>5</sup> Paragraph 6.10

site odour and the investigations made by TRC, and the observations presented by the other experts.

- 12 Mr Van Kekam considers that thermal buoyancy could be resulting in higher odour concentrations beyond the site boundaries than observed on-site, which would correlate to an increasingly negative hedonic tone downwind. In my opinion, given the horizontal momentum associated with the discharges, it is unlikely that stronger odour would be detected off-site for the horizontal fan discharges for most conditions. That is, I could smell a distinct odour (intensity of 3) very intermittently when standing closer than 10 metres to one of the fans at the peak of the growing cycle. When the odour was distinct, I considered that the odour mildly unpleasant. In general, I would not expect that the odour I observed could be stronger or more unpleasant at a greater distance downwind because of dilution.
- 13 I acknowledge that there are times when more odour will be generated than when I was on-site, for example during bird capture and shed clean out, but these events are intermittent and relatively short lived. And in my opinion, AFT's management and operational procedures ensure that the potential for odour from these activities is minimised to the greatest extent practicable, and that residual intermittent odour is in keeping with other rural activities.
- 14 In my opinion, the mitigation measures proposed by AFT will effectively alleviate the chronic odour impact. As one example, the tall stacks will greatly enhance dispersion under calm and low wind speed conditions, which would currently correlate to a plume experienced at ground level that could last for extended periods.
- 15 All the experts agree that the proposals will reduce odour, as was demonstrated by the dispersion modelling presented in evidence by Mr Pene. I agree with Mr Pene that the dispersion modelling has conservatively estimated the benefits for odour reduction from the AFT upgrades, and that additional factors not considered in the modelling will further reduce the quantum of the predicted odour impacts. In particular, the effect of the DACs balanced ventilation at reducing odour emission rates by optimising ventilation, resulting in lower flowrates and a lower efflux of odour, also commensurate with lower ammonia levels as demonstrated by the chicken feet pad numbers as achieved at Midhurst and as described by Mr Whiting.
- 16 Mr Van Kekam<sup>6</sup> has quoted his experience with the use air dispersion modelling to determine the peak off-site 1-hour average 99.5%ile odour concentrations (expressed as odour units per cubic metre of air (OU)). He states that these peak concentrations are often compared against a 5 OU criteria for rural dwelling receptors. I understand that Mr Pene's modelling, which is conservative for AFT's

---

<sup>6</sup> Paragraph 8.6

operations, demonstrates compliance with the relevant OU criteria. This modelling assessment, therefore, provides an evidential basis that the proposed measures will be sufficient to reduce odour to an acceptable level, which was the main area of expressed uncertainty and disagreement amongst the experts.

- 17 Mr Van Kekam notes<sup>7</sup> the water misting systems for dust control and considers that the efficiency of these misting systems and ability to control dust emissions from the fans should be presented and the residual potential for off-site effects assessed. In my view, this is unnecessary because, in my understanding, the misting systems go beyond generally accepted good practice for the industry. And for reasons cited by Mr Bedford in the Supplementary Officer Report, the potential for dust discharges via the roof mounted fans is considerably lower than at present. As stated by Mr Bedford, there is no justification for considering a condition relating to PM<sub>10</sub> from the Farm.
- 18 Regarding the potential for health effects cited by Glenis McDonald, I agree with Mr Pene and Mr Bedford regarding the low likelihood that adverse health effects would normally be associated with the observed air quality in the vicinity of the Farm, in particular the measured ammonia. Mr Backshall also notes<sup>8</sup> the 100 fold difference in the odour threshold for ammonia as compared to the health impact criterion. In any case, the ammonia concentrations will reduce with the balanced ventilation system as described by Mr Whiting.
- 19 I am in general agreement with the proposed conditions for the consent, with the provisos as indicated by Mr Pene and Mr McDean. I note that the concerns raised by Mr Van Kekam in relation to potential for effects from the free range areas are addressed via his proposed conditions, which are accepted by AFT.

## **Conclusion**

- 20 In my opinion, the AFT site is well run and has adopted good practice and is adopting emerging best practice management and control system for broiler farm operations.
- 21 While there is a strong likelihood that when considering the FIDOL factors, chronic odour effects have occurred in the past, in my opinion the proposed upgrades and the dispersion modelling assessment provide a reasonable basis to demonstrate that the potential off-site odour and dust effects from the proposed free range broiler chicken farm will be at an acceptable level for the environment.

---

<sup>7</sup> Paragraph 8.18

<sup>8</sup> Paragraph, 4.59