

## **Summary of Canterbury Landscapes Evidence for Hearing**

The key findings of my evidence are as follows

The closest dwellings to the CLS site are approximately 820m to the northwest, 1000m to the west and 1000m to the northeast.

The CLS site is located within a 278 ha property and is surrounded on three sides by a mature plantation of pine trees.

The prevailing wind in the area is from the northeast, although winds from the southwesterly quarter, which blow towards the houses to the northeast of the site are also relatively common.

The site is located in a rural area and as such there are other sources of odour and dust in the area, such as silage, manure spreading, unsealed roads and cultivation of paddocks.

When I visited the site in October 2017 I identified that the most likely sources of odour on the site were; the standing water that was in close proximity to some older piles of compost in the northeastern area of the site, that CLS advised me had become anaerobic, and the disturbance of these anaerobic piles.

Whilst on site my general impression of the odours was of a generally low level of inoffensive odour which smelt similar to silage, manure and compost. In places I noticed stronger intermittent odours which smelt of sulphur near the standing water and an odour similar to tar near the mushroom compost. I considered that these stronger odours had the potential to be offensive and objectionable if they were undiluted by dispersion in the air and were regularly detectable at a dwelling due to their character.

I did not detect any offensive or objectionable odours from any other areas of the site, including where actively composting piles were being turned.

Some submitters described odours from CLS as being putrid, rancid, of an intensity that would induce nausea, and more offensive than pig or chicken manure. I note that none of the odour surveys carried out by Beca, CLS or ECan, either before or after the changes were made to CLS's operation, recorded odours downwind of the site that could be described as such, nor did they record any such odours on site. At most, the odour surveys recorded odours that were intermittent and not offensive beyond the boundary of the site and no more than distinct and unpleasant in close proximity to compost piles being disturbed on the site. This is consistent with my experience of the site.

CLS investigated the sources of the odours described in the submissions and complaints and determined that the most likely cause of odours was the compost which had become anaerobic during the winter and the standing water close to these piles, which is also consistent with my experience.

CLS removed the anaerobic material from the site during November and December last year and has changed their operations to prevent compost piles becoming anaerobic in the future. I am confident that the major sources of odour on the site have now been removed and that the procedures that CLS has implemented and which are incorporated into their management plan for the site, will prevent a recurrence of past events.

Some of the submissions also raised concerns about the health effects of bioaerosols that may be generated from the composting process. I prepared a letter to ECan in which I summarised the

findings of published papers and made an assessment of the likely effects on neighbours of the site. A copy of this letter is attached to my evidence as Attachment 5. My assessment found that the risk of adverse health effects on neighbours of the site resulting from the discharge of bioaerosols from the site is negligible, which is consistent with the opinion expressed by Mr Cudmore in his report prepared for ECan.

Since the consent applications were lodged, complaints of offensive odour have continued to be made by members of the public. During this time my colleague Ms Dyer and ECan officers have carried out proactive odour surveys of the site, as well as responding to these complaints.

<sup>has done</sup>  
Ms Dyer will explain the outcomes of the odour surveys in detail in her evidence, but in my opinion, the results of the surveys and the lack of events that have been recorded by ECan as causing an offensive odour, especially since CLS made the changes to their operation and removed the piles of anaerobic compost, demonstrate that composting can be carried out on site without generating offensive or objectionable odours beyond the boundary of the site.

CLS has prepared a compost management plan which includes a description of the composting procedures that are followed on site and the methods which are used to prevent the generation of offensive or objectionable odour and dust along with procedures for responding to complaints and keeping the neighbours informed of activities on the site. The CMP has been prepared in accordance with the requirements of the CARP and the Ministry for the Environment GPGs for managing odour and dust.

In my opinion, the changes made to the way the site is managed have reduced the risk of offensive and objectionable odours being generated from the site in the future. Providing the compost is manufactured in accordance with the NZ Composting Standard and the CMP, using the raw materials described, no other potentially odorous materials are stored on site, the compost piles are kept above the water level on the site and the proposed conditions are adhered to, the risk of odours and dust generated on site causing offensive and objectionable effects is low and that any adverse effects should be less than minor.

I support the overall conclusions of the section 42A report prepared by Ms Wadworth of ECan and the supporting report prepared by Mr Cudmore of Golders. I also support the conditions proposed by Mr Loe.

In response to the written evidence provided by Mr Millar, the odour surveys carried out by my Beca colleagues and ECan officers were undertaken in accordance with the methodology specified by the CARP and the Ministry for the Environment. Odours by their nature, move with the wind and are often only able to be detected intermittently, ie they come and go. Therefore it is possible that at a particular time someone may detect an odour downwind of a source but shortly after someone else at the same location may not. This variability in detection makes it necessary for the odour surveys to be carried out using the prescribed methods which require the observer to stay in the same location for 10 minutes at a time and the observations of odour recorded every 10 seconds. This methodology allows for the variability in odour concentrations to be taken into account and gives sufficient time for an observer to catch the intermittent puffs of odour that may occur. I therefore am not surprised that Mr Millar may have detected a smell when the Beca observer did not.

In response to the Oxford Ohoka Community Board it is important to note that just because odour or dust are noticed beyond the boundary of a property does not mean that there is necessarily an offensive or objectionable effect. For odour or dust to be assessed as creating an offensive or objectionable effect the FIDOL factors must be considered, which I discussed in my evidence.

The Community Board raises concerns regarding dust from the site. From my observations of the <sup>equations</sup> site, the distance between the site and the closest houses, the presence of the large stand of trees,

the nature of the operations on the site and the control methods used, it is my opinion that there is negligible risk of dust generated at the site creating any adverse effects beyond the boundary of the property.

I also note that CLS has prepared a compost management plan for the site which incorporates methods for managing dust and odour from the site and which is in accordance with the requirements for dust and odour management plans in the CARP and the MfE guidance documents.

