

## **SUBMISSION ON AN APPLICATION FOR RESOURCE CONSENT UNDER SECTION 95 (a) OF THE RESOURCE MANAGEMENT ACT 1991**

To: Environment Southland  
Cnr North Rd and Price St  
Waikiwi  
Invercargill 9810

Submitters name: Public Health South on behalf of Southern District Health Board

1. The application is by Kerr Inverurie Trust for a resource consent to construct an effluent storage pond, to discharge composted waste containing cattle hide and untreated wood chips and shavings, sawdust, straw, hay and balage to land and to discharge contaminants including odour to air for a period of 10 years. The proposal is a discretionary activity under Rule 32 (a) of the proposed Southland Land and Water Plan; a non-complying activity under Rule 34(b) of the proposed Southland Water and Land Plan; and a discretionary activity under Rule 5.5.2.12 of the Regional Air Plan.
2. This submission relates to the discharge of contaminants to air through the composting of waste from the extraction of gelatine from waste parts of cattle slaughtering (skutch) and the application of the composted material to land.
3. Public Health South notes the applicant proposes to run a composting facility which has the potential to cause offensive odour during the composting process and after it has been discharged to land. The application to discharge to air only considers the composting site and not the area in which the compost will be discharged to land.
4. Public Health South notes that ruminant animals (cows and sheep) are grazing on the land in which this composted material is being applied.
5. Public Health South has acknowledged that the terrain in which this activity is proposed is an environment which has intermittent (ephemeral) waterways during the event of heavy rain.
6. Public Health South has noted that the applicant has indicated in the application to discharge to air and that there are no recreational activities in the existing environment, however we note the Round the Mountain Cycle Trail runs through the property.
7. The Regional Air Quality Plan for Southland 1999

*"The purpose of this Plan is to control the discharge of contaminants to air as set out in Section 68 of the Resource Management Act 1991"*

Section 7.1 of this plan indicates that to assess odour it should consider the frequency of the odour, intensity of the odour, duration of the odour and the offensiveness of the odour, also known as FIDO factors.

There are two objectives in this plan to remedy or mitigate any adverse effects from odour discharges we will draw on:

### ***Objective 7.2.2 - protection of cultural and amenity values***

*To protect areas of cultural and amenity value from any adverse effects of odour discharges.*

8. The proposed Southland Water and Land plan (pSWLP)  
*"..... has been developed by Environment Southland under the Resource Management Act 1991 (RMA). This Plan is intended to provide direction and guidance regarding the sustainable use, development and protection of water and land resources in the Southland region. This Plan fits within, and is influenced by an RMA framework of national, regional and local policy documents".*

There are 18 objectives outlined in the pSWLP and attention is drawn to objectives 1, 8 and 13 outlined here for ease of reference:

**Objective 1**

*Land and water and associated ecosystems are managed as integrated natural resources, recognising the connectivity between surface water and groundwater, and between freshwater, land and the coast.*

**Objective 8**

*(a) The quality of water in aquifers that meet both the Drinking-Water Standards for New Zealand 2005 (revised 2008) and any freshwater objectives, including for connected surface waterbodies, established under Freshwater Management Unit processes is maintained; and Proposed Southland Water and Land Plan Page 23.*

*(b) The quality of water in aquifers that have been degraded by land use and discharge activities (with the exception of those aquifers where ambient water quality is naturally less than the Drinking-Water Standards for New Zealand 2005 (revised 2008)) is improved.*

**Objective 13**

*Enable the use and development of land and soils, provided:*

*(a) the quantity, quality and structure of soil resources are not irreversibly degraded through land use activities and discharges to land;*

*(b) the discharge of contaminants to land or water that have significant or cumulative effects on human health are avoided; and*

*(c) adverse effects on ecosystems (including diversity and integrity of habitats), amenity values, cultural values and historic heritage values are avoided, remedied or mitigated to ensure these values are maintained or enhanced.*

9. Biosecurity (Ruminant Protein) Regulations 1999

*"...to prohibit the feeding of ruminant protein in any form, composition, or admixture to ruminants because of the risk of amplifying and spreading transmissible spongiform encephalopathies by doing so...Consequently, to manage the risk to New Zealand of an outbreak of a transmissible spongiform encephalopathy... "*

**Fate of the leachate**

10. Contaminated and poorly managed water sources can contain chemical or microbiological hazards that can lead to sickness<sup>1</sup>. Leachate being irrigated to land has the potential of entering into an intermittent watercourse running through the property and adds an increased risk of infiltrating waterways during heavy rain events. As this soil type is fine textured and prone to waterlogging the risk of runoff is greater.
11. Uncontrolled leaching of the leachate into the groundwater can increase the risk of groundwater infiltration and runoff. It is noted in the application that the leachate is only rainwater, however analysis of the compost leachate provided by Sephira Environmental noted elevated levels of nitrogen, ammonia nitrogen, total phosphorous and chloride and they were above the ANZECC guidelines for 95% protection of aquatic systems.
12. It has been noted that there are buffer zones around the gullies and intermittent storm water flow of 20 meters. Continual monitoring of the overland flow to ensure no runoff is occurring is essential in ensuring the waterways are protected.

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<sup>1</sup> Ministry of Health. 2014. *Water Safety Plan Guide: Surface and groundwater sources, version 2, ref s1.1*. Wellington: Ministry of Health.

### ***Odour effects***

13. Odour can cause significant adverse effects on peoples' lives and can impact the places in which an individual works, lives and plays. Olfactory stimulation reaches the cerebral cortex through the thalamus creating an intense emotional or behavioural response to certain odours which can negatively impact an individuals' wellbeing.<sup>2</sup>
14. Public Health South is aware the previous processing of this skutch has historically created a nuisance in the Canterbury region dating back to 2011. Odour nuisances occurring from the composting of this product was noted by a Compliance Officer at Environment Canterbury to be offensive to the neighbouring properties over 1 km away, even after the compost had reached its final stage of decomposition and was comparable to the smell of rotting eggs or ammonia.
15. With the limited information provided by the applicant, our estimate of the buffer distance based on the Guidelines of the Australian State of Victoria's Environmental Protection Agency (Appendix 1), suggests that the maximum buffer distance of the Regional Air Quality Plan for Southland 1999 of 1km may not be sufficient to prevent nuisance odour complaints.
16. Public Health South had attended previous odour complaints relating to the skutch at another property owned by the applicant in Browns.
17. While it is noted that the surrounding dwellings are 1800 meters away and the highway is 1500 meters away from the composting site, it is unclear how far away the discharge of compost will be from these locations.
18. It is noted that the Round the Mountain Cycle Trail is 300 meters away from the composting site and the odour will affect the amenity value of this trail. Although the Cycle Trail was considered in the application to discharge to land it has been overlooked in the application for the discharge to air.
19. Applying the FIDO factors as set out in the Regional Air Quality Plan the potential for adverse effects of the odour is a likely occurrence to surrounding properties and the recreational areas.

### ***Animal protein used on land***

20. Bovine Spongiform Encephalopathy (Mad Cow Disease) is a post-translationally modified host protein derived from ruminant animals and is difficult to detect as it is not a toxin nor an organism<sup>3</sup>. Through the ingestion of contaminated meat via the host, the protein passes the blood-brain barrier and slowly converts the normal host cells to a non-degradable state impeding normal functions.
21. It has been noted that the land in which the compost and leachate will be discharged to will be used to graze cattle and sheep. This activity can increase the risk of Bovine Spongiform Encephalopathy therefore the Biosecurity (Ruminant Protein) Regulations 1999 should be applied.
22. Clause 17 (1)(d)(ii) of the Biosecurity (Ruminant Protein) Regulations 1999 states that ruminant animals must be prevented access to ruminant protein. However Section 17(A) allows the irrigation of pasture from a premises where ruminant protein is produced, rendered or stored, or utilised as long as the pasture is not visibly contaminated with the wastewater and any residues from the wastewater. If it is, the pasture must not be used for grazing ruminant animals or harvested for the purpose of feeding ruminants.
23. The submitter is neutral and neither supports or opposes this application. We are only concerned that adequate conditions relating to the management of the leachate are done so

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<sup>2</sup> Good Practice Guide for assessing and managing odour (Ministry for the Environment).

<sup>3</sup> Emerging Zoonoses and Pathogens of Public Health Significance – an Overview (C. Brown).

in a way to protect surrounding waterways and in best practice to prevent the spread of disease. The odour concerns surrounding this proposal will need to be managed in a way to prevent any adverse effects on surrounding properties and recreational areas.

24. The decision sought in the event that consents are granted, is the imposition of adequate conditions related to the mitigation of potential human health risks as described:
- (i) Ensure the pad in which the compost is stored on has surfaces with permeability of not more than 1x10<sup>-7</sup>m/s as stated in the consent guide for Composting Operations in New Zealand to prevent any uncontrolled leaching<sup>4</sup>.
  - (ii) Ensure management plans are implemented to prevent any adverse odour effects on neighbouring properties and recreational areas. Drawing on Appendix F of the Regional Air Quality Plan for Southland 1999 we suggest buffer distances of 1000 meters (Plants for processing animal or fish wastes and residues into fats, animal feed, fertilisers) to separate this activity from lived in areas or those frequented by the public<sup>5</sup> may not be enough and that 1500 – 2000 metres based on the Victoria EPA Guidelines (Appendix 1) may be more appropriate.
  - (iii) Ensure that following structure indicated in the application is followed to ensure compliance with the Biosecurity (Ruminant Protein) Regulations 1999 by keeping ruminant animals away from the site for 6 months after the compost has been applied to land.
  - (iv) Implement monitoring programmes of the compost composition, the leachate and odour assessment on a quarterly basis to ensure these meet the objectives detailed in the proposed Southland Water and Land Plan and the Regional Air Quality Plan for Southland 1999.
25. The limited time frame given to process this submission may cause restraints on the content submitted.
26. This submitter is not a trade competitor of the Applicant for the purposes of s.308 of the Act.
27. This submitter will wish to be heard in support of this submission.

Dated at Dunedin 19th day of March 2018

Signed



**Martine O'Shea**

**For and on behalf of** Public Health South, Southern District Health Board

**Address for service**

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<sup>4</sup> Consent Guide for Composting Operations in New Zealand.

<sup>5</sup> The Regional Air Quality Plan for Southland 1999.

## Appendix 1

Victorian EPA guidelines on ideal buffer zones for a composting facility

### CALCULATION OF MINIMUM BUFFER DISTANCE

To calculate the recommended minimum buffer distance, determine the process and feedstock ratings from the tables and hence the facility score:

$$\text{Process Rating} + \text{Feedstock Rating} = \text{Facility Score}$$

The minimum buffer distance for 1, 10 and 100 tonne per day plants can then be determined from the *Buffer Distance Chart*. (Interpolate for other plant capacities. Plant capacity is the average output of product at full rates.)

### FEEDSTOCK RATINGS

Feedstock composted*	Feedstock Rating
Animal excreta	6
Prescribed waste	5
Food processing waste	4
Municipal solid waste (garbage)	4
Sewage sludge (dewatered)	3
Hard green waste	2
Sewage sludge (> 7 year old)	1

\* Discuss wastes not listed with EPA.

### PROCESS RATINGS

Process type	Process Rating
Static pile /windrow	16
Windrow, turned	12
Vermiculture without pre-composting	9
Windrow, capable of continuous aeration	9
Roofed windrow, turned	9
Vermiculture with pre-composting	6
Roofed windrow, capable of continuous aeration	6
Indoor composting with odour control equipment (o.c.e.)	4
Solid phase anaerobic treatment, in-vessel with o.c.e.	2
In vessel aerobic composting with o.c.e.	1

### BUFFER DISTANCES FOR COMPOSTING AT 1, 10, & 100 TONNES PER DAY

