von Ah Contracting

Composting Proposal and AEE

Final 29/08/2025

Contents

1. INTRODUCTION

von Ah Contracting Ltd is a company specialising in agricultural contracting, dairy grazing and growing forage feed, based in Kokatahi, Westland, New Zealand.

This resource consent application and Assessment of Environmental Effects (“AEE”) have been prepared under section 88 and Schedule 4 of the Resource Management Act 1991 (“RMA”).

von Ah Contracting Ltd seeks the granting of a resource consent to authorise the discharges to air, land and water associated with a proposed compost operation at the Duck Creek Farm property located in Kokatahi.

The von Ah Compost operation seeks to enhance and recycle waste organic material from suppliers in a controlled and managed way by using the Static Pile Windrow composting method. This document will seek to describe proposed activities and assess the potential environmental effects of these activities.

Compost is used as a soil conditioner/fertiliser in agriculture and horticulture to enhance soil health and promote plant growth. It provides an alternative to modern-day farming's reliance on synthetic fertiliser. Applying compost to land is proven to rebuild and enhance soil structure on diminished soils, leading to increased primary production.

1.2 The Applicant

von Ah Contracting Ltd

1.2.1 Address for Service

1047 Kaniere- Kowhitirangi Road

Kokatahi RD1

Hokitika 7881

2. DETAILS OF PROPOSAL & DESCRIPTION OF ACTIVITIES

2.1 Overview

von Ah Contracting Ltd seeks consents for discharge to land, air and water at the von Ah composting site at Duck Creek Farm, Kokatahi.

2.2 Location

The site where the activities will take place is located on Duck Creek Farm in Kokatahi.

Land location	Kokatahi
Legal description	Lot 2 DP574750
Zoning:	Rural
Site area	Yard 4,200m2, pond 840m3 capacity.
Irrigation area	30 ha of productive farmland.

The surrounding area is rural and set back from the road by 250m to minimise public visibility. The closest neighbour is 250 metres away, behind a stand of trees from the composting area. The setting is rural, and the odour discharges from the operation are expected to be in the scale and nature of other rural activities in the area, and with the controls laid out in the application and supporting management documents. To the best of our knowledge, the location is not within an area of significance for Māori.

See figures 1, 2 and 3 below

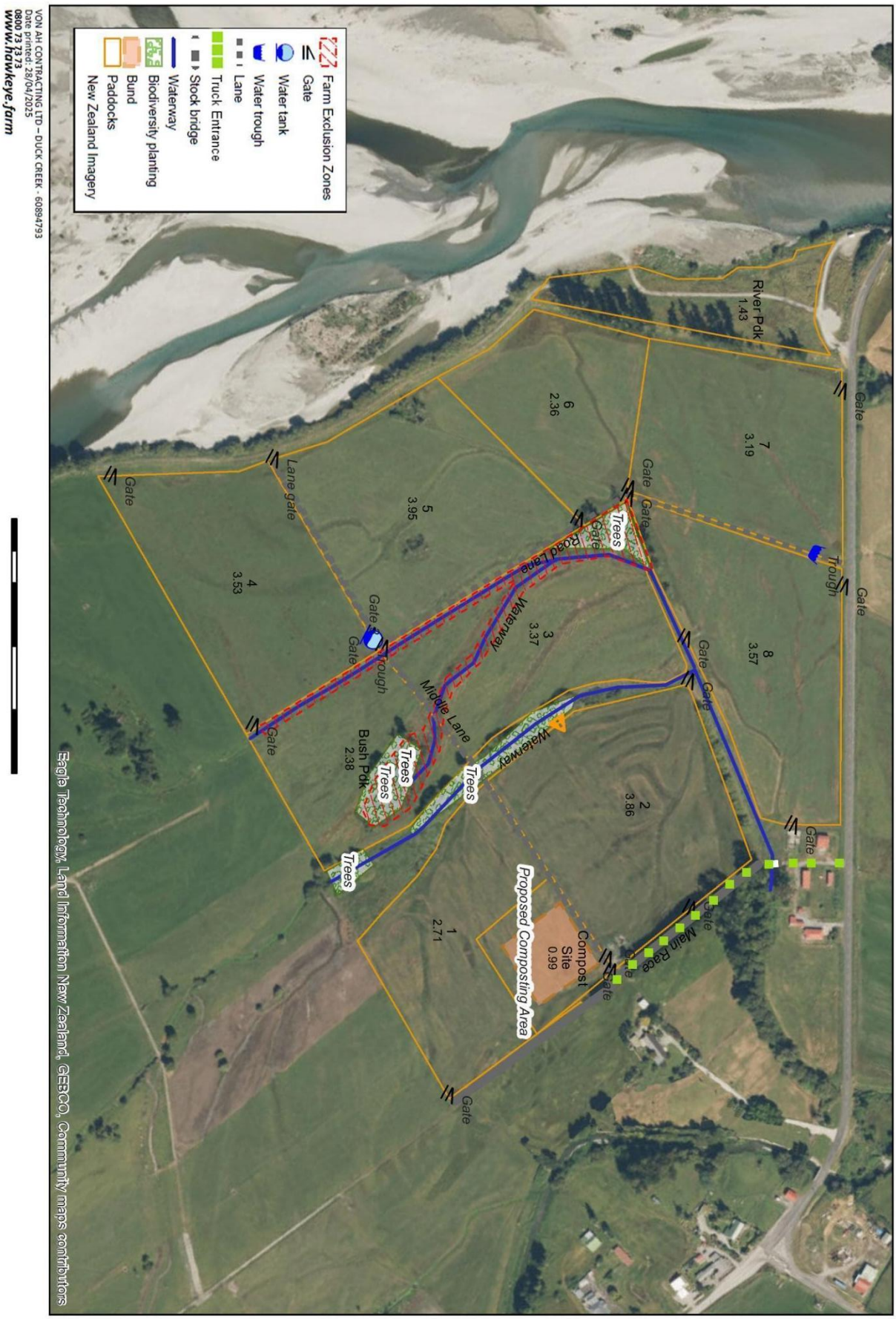


Figure 1: Proposed Site map

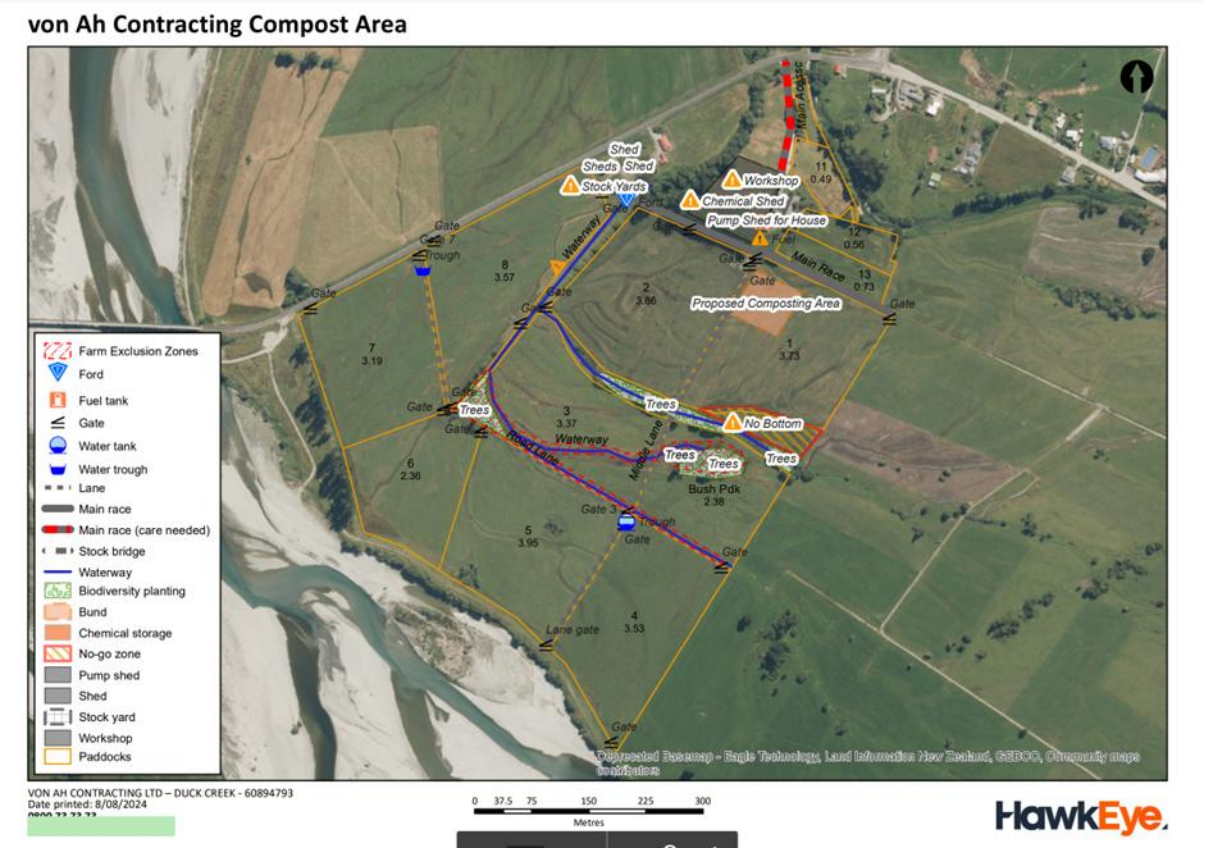


Figure 2 Overview of property boundary and proposed compost area

Figure 3 Ground level view of proposed location

2.3 Meteorology

2.3.1 Rainfall

With the location of the composting site on the West Coast, it is expected that there will be both high annual rainfall totals and high-intensity rainfall events.

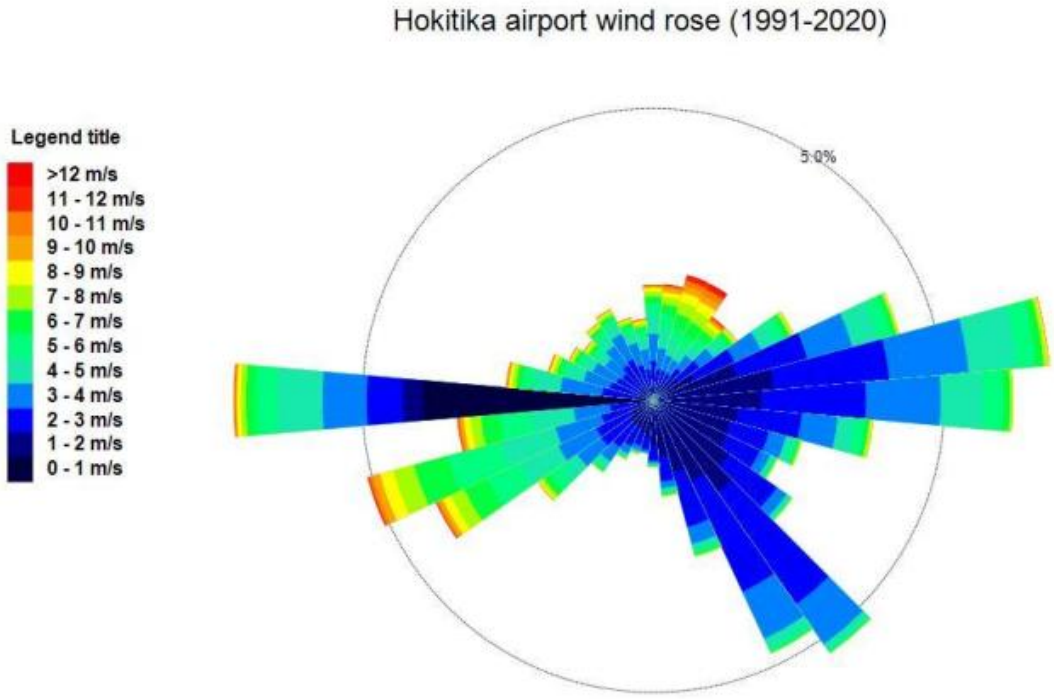
Data from a previous NIWA meteorological station at Kokatahi (station 3993) showed that the area received an average of 3,419 mm of rain per year (between 1981 and 1996), with a maximum recorded annual rainfall of 4,101 mm.

The collection and management of leachate and runoff from the composting yard are described in detail in the following sections of this application.

2.3.2 Wind

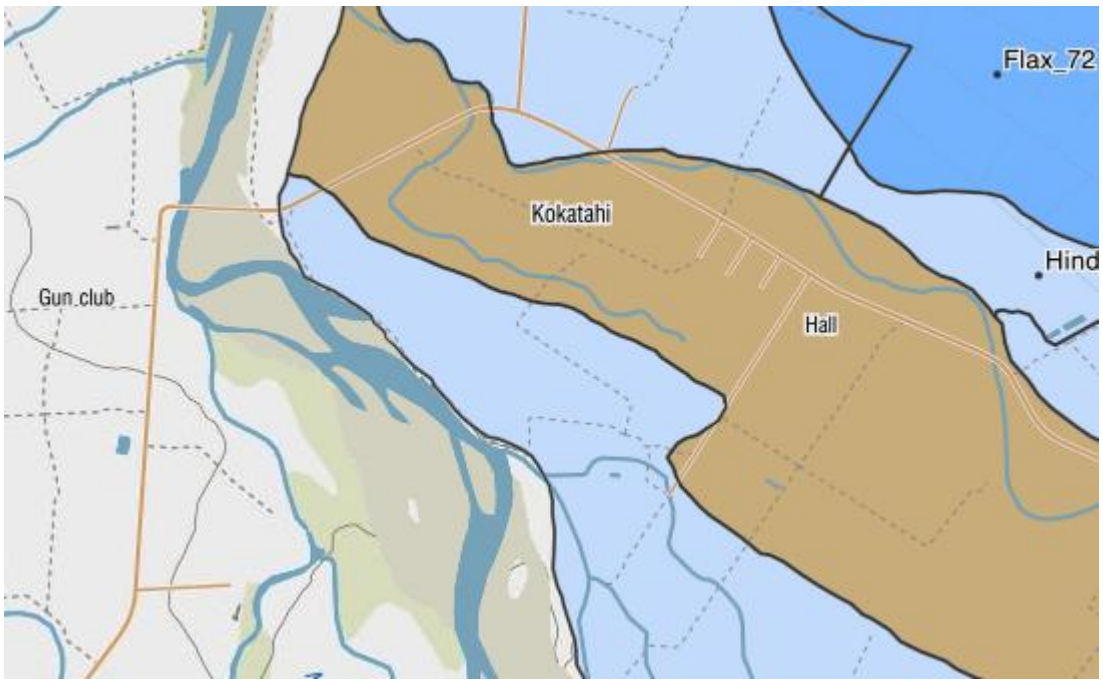
From the odour assessment report associated with von Ah Contracting Composting Proposal compiled by Mote Ltd in December 2024. A Windrose from the Hokitika airport and commentary of a Kokatahi meteorological dataset generated using Calmet modelling software were provided.

The output from this meteorological model identified that the prevailing winds in Kokatahi were predominantly south-westerly. While westerly winds were observed in Kokatahi, they were much less frequent than those in Hokitika, and the wind speed was also much lower. The impact of cold flow katabatic drainage under low wind conditions was also observed with predominantly light easterly/north-easterly winds dominating under atmospheric inversion conditions.



2.4 Soils and geology

Soils in the Kokatahi area are identified as Hinds and Karapoti, with both being moderately deep and imperfectly drained, with low nitrogen leaching susceptibility (source S-Maps Landcare Research).



3 DESCRIPTIONS OF ACTIVITY

The compost operation proposes to receive organic waste material and blend it with a carbon source (bark fines) to enhance and recycle waste organic material from suppliers in a controlled and managed way. The composting operation uses the Static Pile Windrow method. Below is a summary of the process.

Organic waste material (described in section 3.2) undergoes the following process:

1. Material collection, transportation and receipt at the yard and unloaded in the mixing bunker – volumes of organic waste material are recorded for invoicing and compliance purposes.

2. Dewatering, Mixing and Blending – raw material is blended with carbon material (ideally bark or woodchip) at a ratio of 1:1 or greater.

3. Mesophilic Phase – Forming initial windrow with temperature increasing, approx. 2-7 days at 10-50°C.

4. Thermophilic Phase – prolonged period at high temperatures. Approx. 2 weeks to 2 months at 45-50°C, no turning required.

5. Curing/Maturation Phase – compost moved into large windrows for maturation and finishing. Approximately 3 to 9 months at 50-23°C, turn the pile every 2-4 weeks (temperature-dependent).

6. Screening – removal of rubbish contamination and gross solids (i.e. leftover un-broken-down woodchip), so product is ready for sale.

7. Storage/Sale – final stage where material is sold and removed off-site or is stored until it can be sold.

Each component received is described in section 3.2.2.

Leachate and runoff from the process are directed to the irrigation pond (or with clearwater diverted to wetland area), from where the collected leachate and runoff are applied to land. Further detail is provided in sections 3.1.2 and 3.1.1.

The compost flow model for the compost processing at the Kokatahi site is shown in Figure 4 below. This illustrates the flow of material through the site's processes.

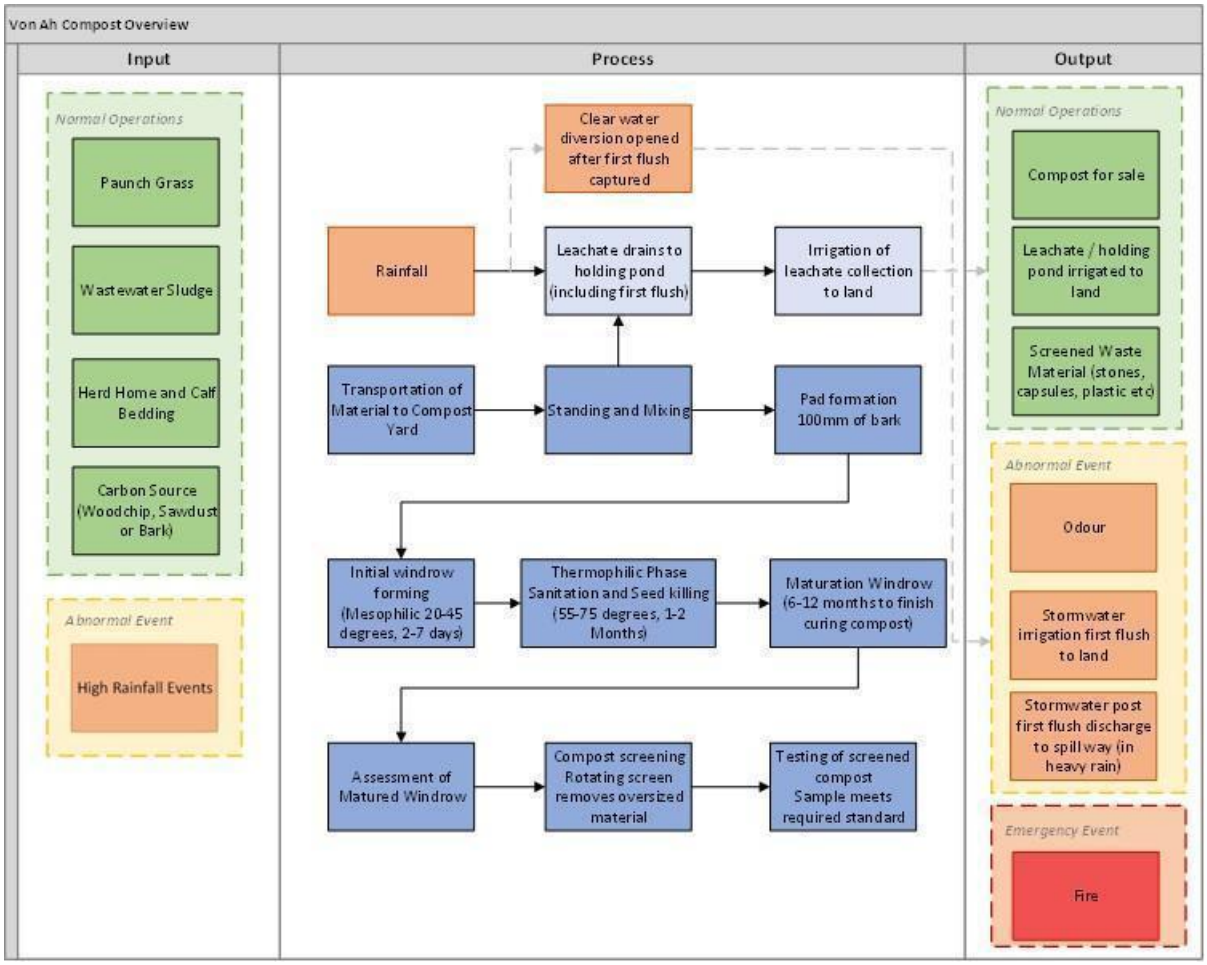


Figure 4 - Simplified process flow of the composting process at von Ah Composting Site.

3.1 Description of the Processes Involved in Composting

Composting is the controlled microbial transformation of organic materials under aerobic and thermophilic conditions into a soil conditioner and organic fertiliser.

Organic material is blended with carbon-rich products such as bark chip (or woodchip/sawdust), herd home and calf bedding, and Karbon King to achieve the required carbon-to-nitrogen ratios and then heaped into windrows using excavators. The composting process is carried out by a large number of microorganisms, and depending on the raw materials, can take a number of months.

Organic waste material is delivered to the compost facility and unloaded into the mixing bunker to ensure that any leachate is collected in the leachate collection system. All incoming organic waste material is recorded in the daily logbook in the loader and the Raw Materials Record Spreadsheet.

The organic waste material is mixed with a carbon source (ideally bark chips) at a ratio of at least 1:1 to ensure a suitable carbon-to-nitrogen ratio is achieved. The purposes for doing this are to:

1. De-water these solids further than mechanical dewatering/thickening.
2. Create a balanced carbon/nitrogen ratio; AND
3. Provide a suitable texture for efficient aeration and biological activity.

Should the mixing process be delayed, the raw material is sealed with a layer of cured compost or wood chips as a biofilter to prevent odours. Efforts should be made to ensure that different feedstocks are blended sufficiently in the mixing bunker before composting begins. If this is not achievable due to the timing of different feedstocks arriving on site, the material will be sufficiently blended upon further mixing when windrows are turned.

Before the solids-woodchip mixture is put on the compost pad, a 100mm thick bark base is put down to assist with the distribution of air into the pile and absorb any additional leachate. A front-end loader is used to move the mixture onto the compost pad to form a windrow. Each windrow is identified by a marker peg, which is retained for the duration of the curing process. Each windrow is sealed with a layer of cured compost or wood chips for insulation, maintaining heat in the pile as a biofilter to contain odours. A temperature of 50°C should ideally be attained within 3 days of placement on the bark base with a maximum delay of 7 days.

The composting process generates heat, and temperatures can be produced in excess of 60°C. Daily temperature readings shall be taken and recorded. Windrow temperature is managed by aeration through regularly turning the windrow from inside to out. Temperature management is the main process variable by which the compost process will be managed – pH, moisture content, and oxygen concentration measurements can be taken if compost performance falls outside of the prescribed operating conditions (i.e. temperature, odour and final results). Besides adequate mixing and recipe development to ensure correct carbon-to-nitrogen ratios and pH levels are achieved, temperature is the most important variable to control, as it drives moisture, oxygen, and pH performance in the piles.

During this phase, mesophilic bacteria begin to convert the organic waste material mixture from an ammonia-based product to a nitrate-based product, and they start generating heat at temperatures ranging from 20 to 50 degrees.

Above 55 degrees, the piles transition to the thermophilic phase. The internal high temperature of the piles kills pathogenic bacteria and weed seeds. The optimum moisture content for bacterial growth of a pile at the time of establishment is 60 - 65% (w/w) and a Carbon Nitrogen ratio of 25:1.

To enable bacteria to convert the biosolids mixture from an ammonia-based product to a nitrate-based product, the windrow is turned after 7 – 10 days when the temperature is greater than 50 degrees. Routine daily temperature readings are taken for the first 4 weeks to determine the level of activity and whether additional water or turning is required.

Records by marker peg number shall be maintained for temperature history, date of aeration/turning, and moisture addition.

Once the temperature of the windrows begins to decline to below 50 degrees, the bacterial flora in the pile changes from thermophilic back to mesophilic organisms. These organisms are typical solid inhabitants and operate at a lower temperature range to break down

complex carbon compounds, yielding the typical musty compost odour. As this transformation takes time, progress is recorded through temperature monitoring. This maturation phase typically takes 6-12 months.

To manage the maturation process, windrows are turned approximately 2 to 4 weeks for 6 to 8 turns to help release heat / add air to the pile, prevent anaerobic activity and continue thoroughly mixing materials. At each interval, the windrow is relocated to an adjoining vacant lot and progressively moved from the rear to the front of the facility. Any stockpiled mature compost should be turned every 4 to 6 months.

Turning and rotating windrows redistribute and break up lumps of remaining organic matter, ensuring a plentiful oxygen supply for the microorganisms. Turning from the inside out maximises the volume of air dispersed throughout the pile and prevents odour generation.

The rotational system of the maturing phase allows control over the conditions of the windrows. The rotation sequence and turning frequency can be modified to improve the maturity of the compost depending on temperature trends, moisture and results from the laboratory analysis.

Obtaining an analysis of the cured compost is essential for any public sales. Once the compost has cured, a sample must be taken for laboratory analysis and compared to the Physical, chemical and biological requirements for compost in NZS 4454:2005. If analysis determines a limit imbalance, the material shall be recycled through the curing process until the limits are met. Once analysis indicates limits are met, then the material is screened to a 20mm diameter and made available for sale.

Mature compost qualities:

• Earthy smell, moist and cool, friable texture

• Will not reheat when turned/ remixed or wetted

• Looks like dark soil with original wastes not identifiable.

Immature compost qualities:

• Sour or ammonia smell

• Significant heat is generated when compost is turned, or dry compost is wetted

• Light coloured and raw wastes (other than woodchips) are still identifiable.

3.1.1 Potential Problems during Composting Operations

Problems that could be encountered in a composting operation are well understood by site operators and include offensive odours and issues with attracting vermin (including insects and rodents, small animals, etc.). Unexpected temperature drops are key indications that there is a problem with the composting process and could be closely followed by odour generation and vermin attraction.

The key to maintaining correct temperatures (signifying that the composting process is correctly maintained) is to ensure that the initial waste input mix is correct, particularly in terms of moisture content (40 to 50 %) and that there is adequate airflow through the windrows. If odours are present, then the windrows are turned to improve aeration. If the wind is blowing in an unsuitable direction for turning, then they are capped with bark, which works as a biofilter to contain odour. In the event of a breakdown in the process, immediate steps are taken to measure moisture content, pH, and temperature, and the necessary action is taken as outlined in the Von Ah Compost Process document.

Neighbours are generally far enough away that the risk is negligible. However, good practice is required to provide "peace of mind" to neighbours.

"Vector attraction" problems (i.e. creating a pathway for pathogens between the compost and people, by way of animals), particularly the presence of insects, are generally associated with exposed wet wastes or ponding of stagnant water. Timely mixing of raw wastes and good control of water from drainage, runoff, and leaching will limit the opportunities for insect breeding and other vector attraction. Vermin traps can also be used as a backup measure.

3.1.2 Yard Construction and Leachate Collection System

The yard surface is shaped to ensure all leachate and stormwater runoff flows directly to the leachate collection system and leachate pond.

The yard surface is approximately 4,200m2. The yard is designed with a slope so that leachate will run off and into the leachate collection sump. It has been constructed by digging 250mm out of the paddock and building the base of the yard with 250mm of 40mm screened compacted gravel with 50mm of sand on top. A 30 µm liner was then placed over the entire yard to prevent any leachate from entering the groundwater. On top of the plastic liner, a further 50 mm of sand was placed, with a final 100mm of 40mm screened and compacted gravel placed on top. Surrounding the yard will be a 1.5m high bund around the compost yard that will be planted up in native trees to provide screening for dust and odour.

Within the yard surface, there is a concrete mixing bunker approximately 50 m2 that flows directly to the leachate collection sump. The leachate collection pond is constructed similarly to the yard surface with 50mm of compacted gravel and 50mm of compacted fines underneath a plastic liner. The leachate collection pond will provide storage for approximately 840m3 of liquid. An 80mm rainfall event will generate 336m3 of stormwater.

All leachate and stormwater from the yard and mixing bunker will flow to the leachate collection sump and into the leachate pond.

The normal operation of the leachate collection is a closed system with all run off entering the lined leachate pond, that will be pumped out weekly (or as needed) by a sucker truck and irrigated to land via travelling irrigator or applied directly to the windrows when additional moisture is needed. Six-monthly leachate samples will be collected, and volumes of leachate removed will be recorded.

In the case of a high rainfall forecast, the leachate pond will be sucked out and irrigated to land before the rainfall event. The leachate pond will then act as a first flush capture system to capture initial gross solids and leachate. Once the runoff begins to run clear, and

depending on the remaining forecast, the operation will bypass the leachate collection pond and discharge to the clearwater diversion drain by closing the outlet to the leachate pond and opening the clearwater diversion drain outlet. Using this approach, there will be minimal risk of high concentration runoff or gross solids to land or water, as the initial flush of these contaminants will be captured in the leachate collection system, and any additional clean rainwater can be discharged to land. Once the system is in the diversion configuration, any further runoff during the high rainfall event will likely be highly diluted from the high rainfall.

Consideration was given to whether the windrows need to be covered during high rainfall events to minimise runoff and any negative impacts on the composting process. With the compost windrows being triangular and capped with bark, rainwater tends to flow down the outside of the piles rather than wash completely through the piles. The depth that the rain penetrates can be seen when a compost pile is opened. The penetrated area of up to 20cm can be seen where the compost is dark brown in colour, and the dryer compost below is paler in comparison. Constructing the windrows in a shape that allows rainwater to run off the piles will minimise the amount of leachate being washed out during high rainfall events. Covering the windrows would likely only prevent a small amount of seepage, but in turn would hinder the composting process by restricting air circulation through the windrows.

Along the clean water diversion drainage system, native plants will be planted along 110m of the drain to filter out any gross solids or contaminants further. Native plants will consist of flaxes, rushes and sedges to act as an artificial wetland.

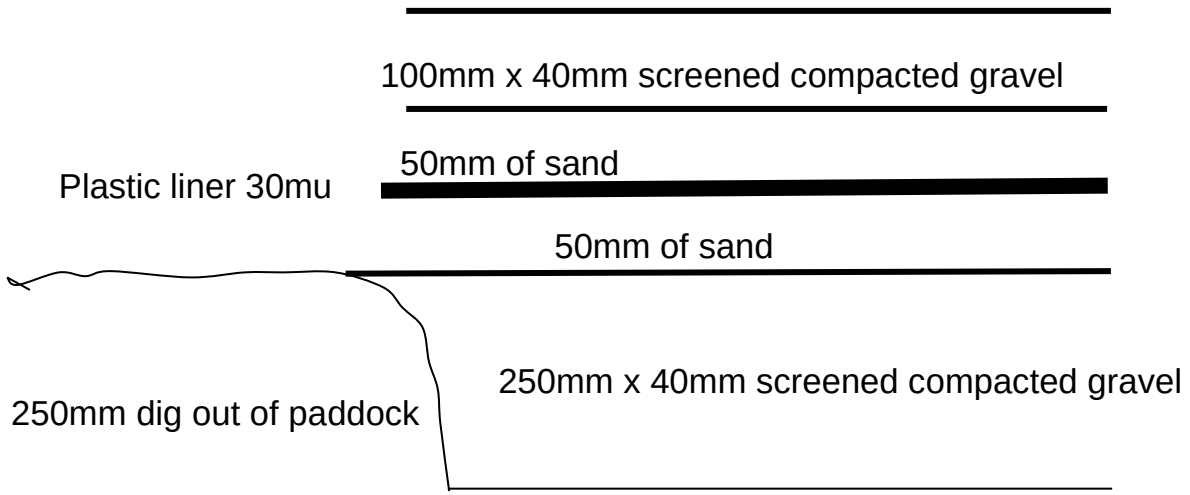


Figure 5. Compost pad profile diagram

Run-off from weather events will be collected in a pond to the north of the pads. This will be lined to reduce leachate reaching the groundwater.

3.1.3 Irrigation

Stormwater will be generated during and immediately after rain events. It is also likely that there may be some drainage (leachate) from the windrows and storage piles onsite for a period once the rain has stopped, as they slowly release moisture. Once collected through the system, the discharge of collected runoff and leachate occurs to land via sucking out the pond and discharging to land via travelling irrigator or muck spreader, or apply it back over the windrows when additional moisture is needed.

The specific management of the leachate collection system includes:

- The yard is sealed, and all run-off flows to the collection system and pond
- The leachate collection system is regularly pumped out and irrigated to land to prevent odour build-up and maximise storage capacity (at least weekly)
- The leachate collection pond is pumped out before any high rainfall event to maximise first flush capture
- Records of volume and discharge locations are recorded for each irrigation event
- The management of the irrigation process to ensure that the application does not result in adverse effects.
- The leachate collection pond is sampled twice per year to estimate loadings

Leachate and runoff captured in the leachate collections system, including first flush capture in high rainfall events, are sucked out of the leachate collection pond by a sucker truck and irrigated to land via travelling irrigator.

There are numerous hazards associated with the irrigation of leachate and runoff to land, these include:

- Spray drift from irrigations
- Odour discharges if irrigation is conducted when wind is blowing directly to a nearby house.
- Ponding and surface drainage to local waterways could impact freshwater ecosystems.
- Excessive nitrogen loadings

Irrigation will be conducted across the 30Ha Duck Creek Farm property. Each discharge event will be recorded to include volume and location of the discharge event. Before each discharge event, operators will check wind direction to ensure it is not blowing towards neighbours, causing potential odour or spray drift issues.

Irrigation application rate is controlled to make sure each discharge event does not result in an application of greater than 20mm in depth. Operators will also ensure no ponding or runoff to surface water ways occur as a result of irrigation by leaving a buffer of no closer than 20m to any water way.

von Ah Contracting has multiple other land areas that can be used to apply leachate on, as a contingency if Duck Creek becomes saturated. These areas are located within 20km of Duck Creek.

Controls for these activities are recorded in the Compost Management Plan (Appendix A) and Compost Process document (Appendix B)
Maintenance of irrigators and sucker truck will be managed as part of the ongoing operational requirements of von Ah Contracting Ltd.

Figure 6: Proposed irrigation Area

3.1.4 Site Management

The proposed von Ah Compost operation will be managed by two supporting documents: The von Ah Compost Management Plan (CMP) (Appendix A), which will cover the site's commitment to meeting all compliance obligations and manage the following:

- Composting discharges to land, air, and water;
- The activities and operations within the composting site;
- The controls to mitigate potential contaminants or adverse effects from the composting site; and
- Identifying and implementing opportunities for improving composting management.
- Incident response and notification

The second document is the von Ah Compost Process (Appendix B), which is a procedural manual that will be used for training and daily operation to cover:

- Operational standards

- Hazards
- Additional information to assist with day-to-day operations

3.2 Organic Material Inputs and Capacity

3.2.1 Volume of waste stream material proposed onsite

It is expected that the operation will receive 5-6 truck movements per week, but this may change as sources of materials change.

Description	**Frequency**	**Amount per year - Estimated** **T/annum**	**Receiving area**
Paunch	Daily during the season	500	Mixing Bunker
Bark Chip	Weekly	3000	Storage Area
Sawdust	Weekly	(supplementary to bark chip)	Storage Area
Old baleage and Silage	Occasionally	(supplementary to bark chip)	Mixing Bunker
Used herd home and calf bedding (Woodchip and manure)	Monthly/seasonal	(supplementary to bark chip)	Storage Area
Abattoir DAF Sludge/wastewater solids	Weekly in season	500	Mixing Bunker
Karbon King (coal ash)	Weekly	50	Mixing Bunker
Moss Fines	Monthly	100	Storage Area

3.2.2 Description of Material

3.2.2.1 Paunch Grass

Paunch Grass is grass from the gut of animals, which is recovered at the abattoir during slaughter. This material still contains nutrients and beneficial organic matter, making it ideal for vermiculture and composting, and is a more suitable disposal option than landfilling. Can contain small amounts of animal protein

3.2.2.2 Bark Chip

The preferred source of carbon is sourced from local mills. It provides good carbon content, a dark colour, and good structural pore size. It is also used as a biofilter to cap the windrows.

3.2.2.3 Sawdust

Additional carbon source

3.2.2.4 Old Baleage and Silage

Additional carbon source and nutrient source

3.2.2.5 Used herd home and calf bedding

Additional carbon source and nutrient source, mostly consisting of wood chips and animal manure

3.2.2.6 Abattoir DAF Sludge / wastewater solids

Dissolved air flotation sludges are comprised mainly of fine wastewater solids material, including fats and oils from meat processing wastewater treatment systems. Also consisting of solids from stockyard holding areas. Wastewater solids are materials screened out at the start of the wastewater treatment process. Included can be small amounts of hair, animal protein and manure.

3.2.2.7 Karbon King

Ash from dairy company boilers

Test Results

Sample Name	N Total Nitrogen %	P Phosphorus %	K Potassium %	S Sulfur %	Ca Calcium %	Mg Magnesium %	Na Sodium %	Fe Iron ppm
Fly Ash - Small	0.23	0.05	0.19	2.19	10.89	2.48	1.69	79,591
Fly Ash - Large	0.19	0.04	0.09	0.16	8.17	1.81	0.59	53,603

Test Results

Sample Name	Zn Zinc ppm	Cu Copper ppm	Mn Manganese ppm	B Boron ppm	Co Cobalt ppm	Mo Molybdenum ppm	Se Selenium ppm	As Arsenic ppm
Fly Ash - Small	50	24	1,299	1,804	9	2	<5	33.8
Fly Ash - Large	9	18	1,087	975	11	11	<5	3.5

Test Results

Sample Name	Cd Cadmium ppm	Cr Chromium ppm	Hg Mercury ppm	Ni Nickel ppm	Pb Lead ppm	TC Total Carbon %	DM Dry Matter %
Fly Ash - Small	<1	13	0.3	29	18.2	5.0	75.1
Fly Ash - Large	<1	257	<0.1	112	0.4	4.6	83.5

This material will be used in the compost. Typically is has a pH of 10-12. As there is no reference to this type of material in the Composting Standards, the operation proposes to use 5% in the making of the compost initially. Using the ash at this rate would ensure we stay well below the limits for heavy metals set out in the NZS4454:2005 Composts, Soil Conditioners and Mulches Standards.

After trials, testing and the levels have been established at 5%, we would like the flexibility to increase the amount of ash added. Always staying within the heavy metal limits.

The Composting Standards use the levels in the NZWWA Guidelines for Safe Application of Biosolids to Land in New Zealand 2003 (Grade A, after 31/12/12).

3.2.2.8 Moss Fines

By-product of sphagnum moss processing. Aids in moisture retention but adds little structural or nutrient benefits.

3.3 Site Access

3.3.1. General (8.9.1ODP)

1. Image of the vehicle crossing from the carriageway of the road to the boundary of the site.

Image of the vehicle crossing from the road

2. The access has been designed, constructed and maintained to be used in all weathers. Slope has been designed to allow for stormwater and detritus to run off the road. The access has been in suitable operation for the past five years, receiving heavy farm machinery, trucks and vehicles as part of an agricultural contracting business. In the proposed activity, the access will receive vehicle loadings.

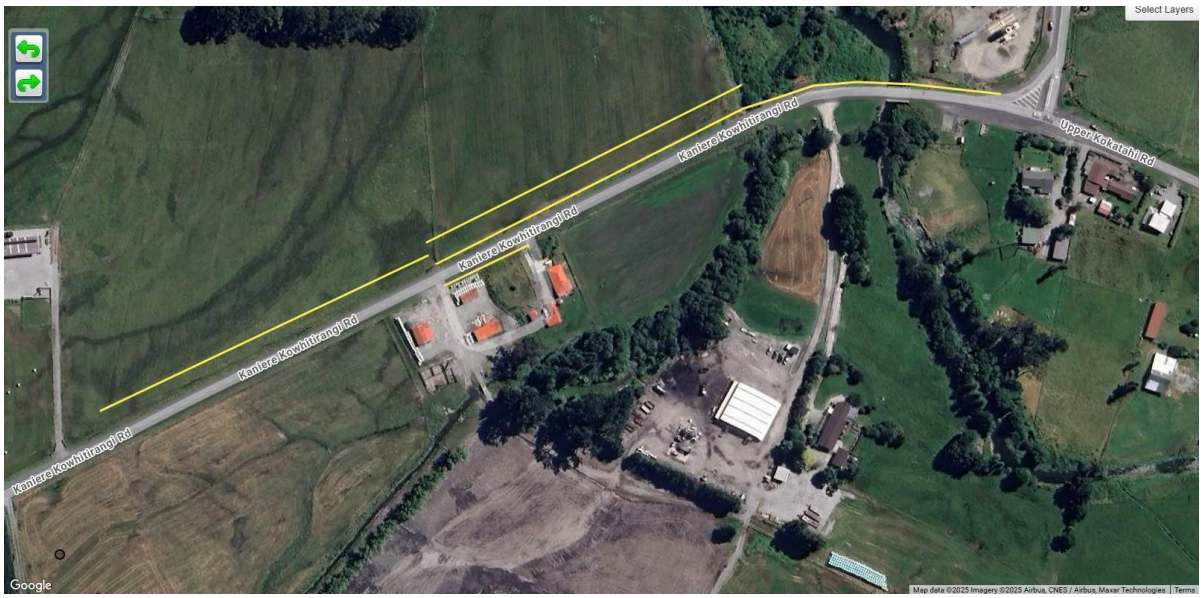
Image of a section of the access

3. This proposed activity is on a rural site where no footpaths or right-of-way exist.

3.3.2 Access to a State Highway (8.9.2 ODP)

The proposed activity site is located on Kaniere-Kowhitirangi Rd, which is not a State Highway.

8.9.1 ODP Property Access Performance Criteria



Map of Kaniere-Kowhitirangi Road showing access

1. Yellow line access to nearest neighbour 54m
2. Yellow line access to nearest intersection 357m
3. Yellow lines access to 210m in both directions

Image of 3.5m from inside access to road

Looking over 210m left down Kaniere-Kowhitirangi Road

Image of 3.5m from inside access to road

Looking over 210m right down Kaniere-Kowhitirangi Road

3.3.4 Access to roads other than State Highways (8.9.3 ODP)

1. Access strap 8m width in rural zone

Image of access off Kaniere-Kowhitirangi Road

Image of measuring of access at 8m wide

3.4 Traffic Movements and Parking (8.1.0 OPD)

As the composting operation will operate in conjunction to the existing agricultural contracting business on the neighbouring property which shares a boundary and is also owned by the applicants. All workers vehicles and machinery are at present parked on this property at 1047 Kaniere-Kowhitirangi Road. If this were to change in the future, there is existing space located off the access on Kaniere-Kowhitirangi Road with a large, gravelled area containing sheds and free space for vehicle parking.

Arieal image of access off Kaniere-Kowhitirangi Road

As the composting operation will operate in conjunction to the existing agricultural contracting business there will be no additional workers vehicles movements starting and finishing work.

Estimated truck moments per week for delivery of materials to make the compost and for taking the compost to customers, 5 to 6 truckloads per week.

4. ACTIVITY STATUS OF THE PROPOSAL

4.1 West Coast Regional Council

4.1.1 Regional Land and Water Plan

RULE 85 - This activity is a **Restricted Discretionary Activity** under Rule 85 of the Regional Land and Water Plan

Does not comply with all conditions of a permitted activity, in WCRC Rule 85, shown below

Rule 85. Composting

The discharge of any contaminants into or onto land in connection with composting operations on production land or for or from domestic composting operations, is a **permitted activity**, provided all of the following conditions are met:

(a) There is no contamination of groundwater, water bodies, or coastal water; and
(b) Subject to condition (c), the discharge consists only of biodegradable wastes from that property;
(c) The discharge does not contain:
    i) Any hazardous substance or container used to store hazardous substances; or
    ii) Any offal or carcasses; or
    iii) Any septage or sludge; or
    iv) Any agricultural effluent or sludge; and
(d) There is no windblown litter from the subject property.

Explanation
This Rule applies to composting on production land and in residential areas, provided that the discharge only contains wastes generated on that property. For the purposes of this Rule, 'composting operations' refers to operations where material is collected and brought together for the purposes of making compost.

Due to the material for the proposed operation not coming from the property and organic waste material being sourced from various locations/activities, it fails to meet section (b) of the rule, along with failing to meet the conditions of section (c)

Rule 81 - The overflow of water to the clear water diversion drain meets the **Permitted Activity** threshold of Rule 81 of the Regional Land and Water Plan. As it won't contain any animal waste once the pond captures the first flush from the yard.

Rule 81. Discharge of stormwater runoff

The discharge of collected stormwater runoff into or onto land is a **permitted activity** provided that all of the following conditions are met:

(a) The discharge does not cause or exacerbate erosion, scouring, land instability, sedimentation or ponding beyond the boundary of the subject property; and
(b) The discharge does not contain any human or animal or wastes; and
(c) Where the discharge into or onto land enters water, it does not increase the flow to the extent that it exceeds the carrying capacity of existing drainage infrastructure; and
(d) If the discharge originates from an area where hazardous substances are stored or used:
    i) Hazardous substances cannot enter the stormwater system; or
    ii) There is an interceptor in place to collect all stormwater that contains hazardous substances and beyond trace concentrations these hazardous substances are contained on-site until removed to an approved disposal facility for the type of hazardous substance concerned.

Cross-reference: Point-source stormwater or runoff containing sediment from earthworks that flows or is discharged to land or enters a waterbody is dealt with under the permitted earthworks rules (Rule 3). Stormwater discharges directly into water are dealt with under Rule 64.

4.1.2 Regional Air Quality Plan

This activity is a **Discretionary Activity** under Rule 16 of the Regional Air Quality Plan as it is listed as an activity in the advisory notes.

10.6 DISCRETIONARY ACTIVITIES

RULE 16 GENERAL DISCRETIONARY ACTIVITIES

Any discharge of contaminants into air from:

1. any industrial or trade premises that is not specifically provided for by any rule within this Plan; or
2. any source (whether moveable or not), which does not comply with any condition of a permitted activity rule or any of the standards and terms of a controlled activity rule within this Plan, but which is not prohibited;

is a **discretionary activity.**

Applying for a Resource Consent

An application for a resource consent under Rule 16 shall be made on the prescribed form, and shall include the matters set out in Chapter 11 of this Plan. *See Chapter 11*

Advisory Note:

Discharges of contaminants into air from commercial, industrial or trade premises which are not specifically provided for by any rule within this Plan, and are therefore discretionary activities requiring a resource consent include, but are not restricted to, discharges associated with the following:

- Landfills;
- Composting operations on industrial or trade premises;
- Septage or sludge management processes;
- Municipal sewage treatment processes;
- Combustion of treated wood in a purpose-built incinerator;
- Hazardous and medical waste incinerators;
- Manufacture of concrete products;
- Manufacture of rubber goods;
- Galvanising of steel;
- Manufacture of milk powder;
- Manufacture of fertiliser;
- Gravel crushing facilities;
- Rendering plants;
- Tanneries and skin or hide processing plants;
- Asphalt plants;
- Fumigation processes.

4.2 Westland District Council

This activity is a **Discretionary Activity** under section 6.5 of the Westland District Council plan as it is listed in Odorous Activities specified in Appendix G of the plan.]

APPENDIX G - ODOROUS ACTIVIITES

- Abattoirs
- Composting plants
- Effluent treatment plants
- Fish farming
- Fitch farming
- Mushroom farming
- Piggeries
- Poultry farming
- Rabbit farming
- Rendering plants
- Tanning

5. ASSESSMENT OF ENVIRONMENTAL EFFECTS

In addition to the application being made in the prescribed forms and manner, Section 88 of the RMA also requires that every application for consent includes an assessment of the effects of the activity on the environment as set out in Schedule 4 of the RMA.

5.1 Effects of Air Discharges

The process of composting organic wastes can create odour and dust discharges that can be unpleasant when experienced at nearby dwellings, reducing the amenity and enjoyment of private properties. High risk activities for the compost yard are turning windrows and irrigating leachate, as well as abnormal events such as receiving highly odorous material or issues in the composting process (piles going anaerobic). All these risks are identified and managed in the Compost Management Plan and in the Compost Process document.

In addition to high-risk activities, certain wind conditions could increase the risk profile of discharges to air on nearby receptors. Cold air drainage phenomena and south westerly winds towards neighbours pose the most risk. Cold air drainage is likely to be less of an issue as the flow of these light winds from the east and northeast is likely to be carrying odour away from neighbours. The south westerly winds pose a higher risk, but can be managed by observing good management practice and observing wind direction before turning windrows. Other measures to minimise odour and dust risk include: the compost yard will have native plants, trees and other vegetation planted around the bund wall to provide screening for dust and odour.

By following good management practices in the Compost Management Plan and Compost Process document, it is considered that the effects of discharges to air are entirely contained within the site and can be avoided, remedied or mitigated to the extent that they are less than minor.

5.2 Effects from Stormwater and Leachate Discharges (Land and Water)

The potential and/or likely environmental impacts arising from composting production are considered to be both well anticipated and understood. Environmental effects which are relevant to the consents sought from the West Coast Regional Council and that may be expected to arise from this activity, primarily relate to the potential discharge of leachate and /or stormwater to land and water. With the stacked controls outlined in this application; leachate collection system, lining of the yard, first flush capture, irrigation controls, clearwater diversion drain, planting up drain, leachate monitoring, discharge records etc. it is expected that the effects to land and water from the proposed activity can be avoided, remedied or mitigated to the extent that they are less than minor.

6 ASSESSMENT OF ALTERNATIVES

6.1 Alternative Location and Methods

Section 1 (b) of the Fourth Schedule of the Resource Section 1 (b) of the Fourth Schedule of the Resource Management Act, 1991 requires that “where it is likely that an activity will result in significant adverse effect on the environment, that the applicant provide a description of any possible alternative locations or methods for undertaking the activity.”

6.1.1 Alternative Location

Improvements in the management practices employed at the VAC site will continue to develop and improve, demonstrating that well-managed and operated compost facilities can present a sustainable and environmentally acceptable method for managing a range of unwanted organic waste streams. The Resource Management Act, 1991 requires that "where it is likely that an activity will result in a significant adverse effect on the environment, the applicant provides a description of any possible alternative locations or methods for undertaking the activity”. Effects associated with the operation of the Kokatahi facility are considered to be both well anticipated and understood. Well-managed and operated composting facilities have demonstrably resulted in effects that can be considered no more than minor in nature, and for these reasons, it is not considered necessary to consider further alternate locations.

6.1.2 Alternative methods

The utilisation of organic waste streams for the production of compost represents a simple, yet innovative method of reusing a waste stream that might otherwise require safe residual methods, such as landfilling. Whilst methods such as landfilling represent an alternate method for dealing with a range of unwanted organic waste streams, the production of compost represents a sustainable and regenerative waste treatment, rather than a waste disposal option.

6.1.3 Options Assessment

To discharge run-off and leachate from composting operations, the following options have been considered by the applicant.

6.1.3.1 Total Containment with No Discharge

Holding ponds could be constructed with contained water being irrigated back over the composting pads. VAC believes this to be impractical due to stormwater volumes that would need to be discharged.

6.1.3.2 Containment, Irrigation and Clear Water Diversion

Containment and irrigation of the land of leachate and run-off with a clear water diversion post first flush capture in high rainfall events.

6.1.3.3 Recommended Option

It is recommended that the containment and irrigation of leachate and run-off with a clear water diversion post, first flush capture in high rainfall events, be the recommended option.

7 STATUTORY CONSIDERATIONS

The Resource Management Act 1771 (RMA) provides a framework within which consents for various aspects of the operation must be obtained. It explicitly outlines the requirements of the applicant in lodging their application and the process by which the consent authority shall make a decision. The process is generally subject to Part II of the Act as outlined below. This section of the AEE for the project briefly outlines the statutory background to the consent process and details the planning documents, which, in combination with the RMA, assist in determining the consent requirements for the project.

Schedule 4 of the RMA requires that an assessment of the activity against the matters set out in Part 2 and any relevant provisions of a document referred to in Section 104 of the RMA is provided when applying for resource consent for any activity. These matters are assessed as follows.

7.1 Part 2 of the RMA (Purpose and Principles)

The purpose of the RMA is to promote the sustainable management of natural and physical resources. All policies, plans and resource consents are subject to this principle.

The RMA defines sustainable management as:

“managing the use, development and protection of natural and physical resources in a way or at a rate, which enables people and communities to provide their social, economic and cultural wellbeing and for their health and safety while –

(a) Sustaining the potential of natural and physical resources (excluding minerals) to meet

the reasonably foreseeable needs of future generations; and

(b) Safeguarding the life-supporting capacity of air, water, soil and ecosystems; and

(c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.”

Whilst the effects of waste are dealt with within the ambit of the RMA, the Act itself does not specifically deal with waste generation per se. This said, increasing public concern for the environment, coupled with a general recognition by regulators and the public for the need to incorporate where practicable, a waste management hierarchy based on reduce, reuse, recovery and recycling, means that there is a recognised need to promote and endorse a range of environmentally sound and acceptable methods for the management of solid and liquid wastes.

Composting production and its necessary supporting activities (leachate irrigation) represent a simple, sustainable and innovative method for dealing with a range of unwanted organic waste streams that might otherwise require less desirable residual disposal methods, such

as landfilling. This is considered a sustainable use of natural resources and a sustainable management method.

By ensuring the potential effects of the activities are avoided, remedied and mitigated as presented in the AEE, it is considered that the activities are entirely consistent with the purposes and principles of the RMA.

The RMA also lists several matters of “National Importance” which must be recognised in decisions affecting the management, use, development and protection of natural and physical resources. Such matters include:

“(a) The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, lakes and rivers… and the protection of them from inappropriate subdivision, use and development.

(b) The protection of outstanding natural features and landscapes from inappropriate subdivision, use and development.

(c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna.

(d) The maintenance and enhancement of public access to and along the coastal marine area, lakes and rivers.

(e) The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, wahi tapu and other taonga.”

There are no matters of national importance under Section 6 of the RMA that will be affected by the proposal. The proposal is also consistent with the requirements of Section 7 of the RMA, with particular regard given to Kaitiakitanga and the ethic of stewardship, and the efficient use of natural resources, by composting and reusing nutrients as opposed to landfilling the waste streams involved. Regarding Section 6, the proposed activity is not inconsistent with the principles of the Treaty of Waitangi.

Overall, the activity is considered to be consistent with Part 2 of the RMA, given the proposed mitigation measures and reflecting the significant improvements made to operations over the course of this application.

7.2 Section 104(1)(b) of the RMA

In accordance with Schedule 4 of the RMA, an assessment of the activity against the relevant provisions of a document referred to in 104(1)(b) of the RMA must be included in an application for resource consent. Documentation in this section is noted as being:

(i) a National Environmental Standard;

(ii) (ii) other regulations;

(iii) (iii) a National Policy Statement;

(iv) (iv) a New Zealand Coastal Policy Statement;

(v) (v) a Regional Policy Statement or Proposed Regional Policy Statement;

(vi) (vi) a plan or proposed plan.

Under the RMA, regional plans need to give effect to NPSs, NESs and RPSs. For an application of this scale, an assessment of the application against the regional plans is adequate as these plans ultimately give effect to the higher order statutory instruments.

Section 104 sets out the matters to which the consent authority must have regard when considering an application for a resource consent. In summary, the following have to be taken into account:

• Any actual and potential effects on the environment.

• Any national or regional policy statements.

• Any objectives, policies or rules in any plan.

Regard must be had to the relevant statutory documents of the WCRC, which will be taken into account.

7.2.1 Waste Management and Minimisation Strategy

This activity complies with the objective set out in section 4.2 of the Regional Waste Strategy for the West Coast, which states:

Objective:
- To maximise the quantity of organic material diverted from the waste stream via composting or other appropriate technologies.

7.2.2 Regional Air Quality Plan

This activity is supported by method 6.5.4 and policy 6.4.1, which promote composting.

8.5.4 The Council will educate and promote alternatives to burning of domestic rubbish, such as composting.	*Policy 8.4.1*

7.2.3 Westland District Plan

This activity aligns with objectives (3.2 - 3.5, 3.7 - 3.11, & 3.13) in the plan as the composting operation will provide a sustainable service in the Westland district, that will recycle valuable nutrient material and divert it away from landfill, while conducting the operation in a manner

and location that will avoid or mitigate any adverse environmental, landscape or cultural impacts.

> The Council wishes to encourage local efforts to enhance the clean, green image of Westland. Initiatives to reduce, reuse or recycle waste for example will be supported. Reduction and reuse are most effective as they avoid having to deal with unnecessary waste. Provision of recycling facilities at major refuse sites will be supported where the material is self-sorted and can be put to good use.

With regards to the policies in the plan, policy 4.4 Amenity is the most relevant due to the potential impacts of the activity on neighbours. As stated previously, with the controls provided for in the compost management plan and process document to sufficiently avoid or mitigate any impacts, it is expected that effects from the activity will be less than minor and, on the scale and nature of odours already present in the rural environment. In addition to this, the activity aligns with policy 4.6, which calls for a reduction in the quantities of waste produced in Westland, and energy efficiency shall be encouraged, and 4.7 by providing a service to regeneratively enhance the quality of the land by sustainably recycling nutrients.

7.2.4 Proposed Te Tai o Poutini Plan

This activity will occur in the General Rural Zone as it requires a rural (or non-residential zone) to be conducted. The proposed plan does not specifically refer to compost as an odorous activity. With the location of the activity, it is assessed that the activity is covered under the rural industry rules in the general rural section. The proposed activity does not go against any objectives or policies in the proposed plan.

8 NOTIFICATION ASSESSMENT

The Resource Management Act 1771 (RMA) provides a framework within which consents for various aspects of the operation must be obtained. It explicitly outlines the requirements for the applicant to lodge their application and the process by which the consent authority will make a decision.

In light of the support and approval of the neighbours, VAC requests that the application be processed on a non-notified basis in accordance with sections 95A – 95E of the RMA.

9 PROPOSED CONDITIONS

Proposed resource consent conditions:

1. The discharge to air shall not cause an odour which is offensive or objectionable beyond the boundary of the property on which this consent is exercised.
2. The raw materials used in the manufacture of compost shall be limited to the items listed in Table 2 below:

Feedstock	Annual limit (tonnes)
Paunch	500
Bark	2500
Sawdust	100
Old bailage/silage	200
Herd home/Calf bedding	200
Daf wastewater sludge	500
Karbon King	50
Moss fines	100

3. The amount of raw material received on the site to produce compost shall not exceed 4150 tonnes per year.
4. Notwithstanding Conditions 2 and 3 above, the applicant may apply to the West Coast Regional Council to amend the volumes in Table 2 or include a new feedstock, subject to the approval of the West Coast Regional Council. The matters to be considered by the West Coast Regional Council include:

    i. The change in volume of material processed ii. The feedstocks already authorised
    iii. The risk category associated with any new feedstock iv. The impact of the new feedstock on the potential for odour generation
    v. The current levels of compliance of the facility

5. The Consent Holder shall ensure that where possible, compost operations (such as turning of windrows) is undertaken at times which are least likely to cause objectionable odour effects on neighbours, with consideration given to wind speed and direction.
6. Prior to first exercise of this consent, the Consent Holder shall install and maintain a data logging weather station in an unobstructed central location on the site to record weather conditions on-site and for the purposes of assessing the need for mitigation measures and to inform the CSMP review.
7. The Consent Holder shall ensure that the compost windrow temperature is greater than or equal to 55 degrees Celsius for a minimum of 15 consecutive days. Records of daily temperature measurements during the first 4 weeks of windrow forming must be recorded and shall be made available to the West Coast Regional Council, Attention: Senior Consents Officer upon request.
8. During the maturation phase the Consent Holder shall measure the temperature, twice weekly. This information shall be made available to the West Coast Regional Council, Attention: Senior Consents Officer upon request.

9. The compost yard and leachate collection system must be inspected weekly and maintained to ensure no discharges to land or water are present.
10. Irrigation to land of leachate and runoff from the leachate collection pond shall comply with:
    a. Volume and location of discharge events recorded
    b. Application depth must not exceed 20mm per irrigation event
    c. Irrigation will not result in surface ponding or drainage to surface water bodies
    d. The leachate collection pond is to be emptied weekly
    e. In the event of a heavy rainfall forecast, the leachate collection pond must be emptied.
    f. No irrigation events are to occur if wind is blowing in the direction of nearby residential properties
11. The clearwater diversion drain must be inspected following each diversion event to ensure no contaminants are discharged to land or water.
12. Twice annually samples must be collected from the leachate collection pond and analysed for total nitrogen.
13. The Consent Holder shall maintain records of any odour or dust complaints received and provide these to the West Coast Regional Council, Attention: Senior Consents Officer on request.
14. The complaint records required by Condition (14) of this resource consent shall include:

    a. Name and location/address and telephone number of complainant when odour/dust is detected (if provided);
    b. Date and time of the odour/dust detection;
    c. Weather conditions, including wind direction and speed at the composting facility when odour/dust detected;
    d. Strength of the odour complained of;
    e. Any possible cause for the odour complained of; and
    f. Any corrective action taken.
15. Within the first 6 months of the excise of this consent, the Consent Holder shall prepare and submit to the West Coast Regional Council, Attention: Senior Consents Officer, a Composting Site Management Plan (CSMP) for certification that it complies with the requirements of this consent. The composting operation shall be managed in accordance with this plan, and a copy shall be always held onsite by the operator.

    The plan shall include, but not be limited to, the following:

    a. describing measures to be undertaken to achieve compliance with the conditions of this consent;
    b. a detailed description of the compost operation, including hours of operation;
    c. acceptable raw material, unacceptable raw material, site access and security; and
    d. a description of activities that may generate odour, and measures in place to avoid, remedy or mitigate those discharges; and

e. a description of how the leachate and stormwater collection system will operate, including when and how collected leachate will be pumped onsite back over the windrows and/or off site for disposal to land; and
f. the means of receiving, recording in writing, and dealing with any complaints; and
g. a list of site management structure and responsibilities; and
h. a list of after hours contact details in case of any emergency of problems; and
i. contingency plans in the event of system malfunctions or breakdowns; and
j. procedures for effective pasteurisation of compost in accordance with Appendix K of New Zealand Standard 4454:2005; and

16. The CSMP shall be reviewed once every two years, and updated as required, and the outcome of the review and any update, shall be provided in writing to the West Coast Regional Council, Attention: Senior Consents Officer by 1 July. The Officer will advise the Consent Holder in writing if any aspects of the CSMP are considered to be inconsistent with the provisions of this consent. At all times, the Consent Holder shall ensure that the West Coast Regional Council has a copy of the most recent version of the CSMP

10 CONCLUSION

This application for the proposed composting operation at Duck Creek Farm by Von Ah Contracting Limited has demonstrated that risks and potential impacts of this operation have been identified and extensive mitigation controls developed to ensure this activity will not result in adverse impacts to the community, air, land or water.

The proposed activity to compost organic waste material to enhance and recycle waste organic in a controlled, sustainable and managed way will provide a valuable service in the local area and will help to divert waste from landfill.

It is requested that a consent term of 15 years is provided for this activity.