



# Recommendation and decision on notification of resource consent application(s) under sections 95-95G of the Resource Management Act 1991 (RMA)

## Summary

I recommend the application is processed on a publicly notified basis. This is because:

- The discharge will contribute to a declining trend in groundwater quality in the Castlerock groundwater zone;
- The discharge will continue to contribute to increasing the nitrogen loading to the Oreti River and the New River Estuary;
- The effects of the proposed activities are not consistent with Council's policies relating to water quality; and
- Overall, the effects of the proposed discharge are expected to be more than minor.

I also recommend that notice is served on the parties identified as affected, predominantly due to the potential for odour effects.

## Recommendation and decision

### 10. Officer's recommendation

10.1	The application be processed non-notified	<input type="checkbox"/>
10.2	Public notification is required	<input checked="" type="checkbox"/>
10.3	The application be placed on hold while the applicant tries to obtain written approvals from the affected persons	<input type="checkbox"/>
10.4	Limited notification is required. Persons to be served notice are those listed in 8.2	<input type="checkbox"/>

Lauren Maciaszek  
Consents Officer

Date: 11 June 2019

### Decision under Delegated Authority

11.1	I agree with the recommendation	<input checked="" type="checkbox"/>
11.2	The application will be processed non-notified	<input type="checkbox"/>
11.3	The application will be publicly notified	<input checked="" type="checkbox"/>
11.4	The application shall be placed on hold while the applicant tries to obtain written approvals from the affected persons	<input type="checkbox"/>
11.5	The application will be limited notified. The parties to be served notice are those listed in section 8.2	<input type="checkbox"/>

This decision is made under delegated authority by:



Michael Durand  
**Consents Manager**

**Date:** 11/6/19

### The application

#### Particulars

Applicant:	Silver Fern Farms Ltd
Application reference:	APP-20191007
Site address or location:	2 Reid Macauley Road, Northern Southland
New consent(s) for new activity(ies) (s88)	<input type="checkbox"/>
New consent(s) for existing activity(ies) (s88)	<input checked="" type="checkbox"/>
Change to conditions of existing consent(s) (s127)	<input type="checkbox"/>

#### The proposal

Silver Fern Farms Ltd is applying to authorise the discharge of food processing wastewater to land and the incidental discharge of odours as a result of the wastewater discharge to land.

The application states that the processing period generally occurs around November to June, with the peak being in summer. The application does not propose to limit the discharge to any specific months of the year.

The wastewater is generated from the food processing operations and may also include cleaning substances used to clean surfaces. Blood is kept separate from the wastewater and solids are screened out, with both blood and solids being disposed of separately off-site. The proposed discharge is only of the screened wastewater.

There is a 49m<sup>3</sup> screen sump and four 22m<sup>3</sup> buffer tanks providing a total storage volume of 137m<sup>3</sup>. At peak operations this is approximately 75% of the wastewater produced in a day.

#### *Discharge method*

The application proposes to discharge the wastewater to land via a low pressure rotating boom travelling irrigator. The application states that of the four gears which can be used on the travelling irrigator, gears 4 and 5 are most frequently used and would result in a hydraulic loading (application depth) of 12-16mm. The maximum hydraulic loading which is proposed as a condition of consent is 20mm.

#### *Planning framework*

The proposed discharge of wastewater to land is a discretionary activity under Rule 16D of the Regional Water Plan.

The proposed discharge of wastewater to land is a discretionary activity under Rule 34(a) of the proposed Southland Water and Land Plan, as a Chartered Professional Engineer has inspected the wastewater system on site and concluded that it is suitable for continued use.

The proposed discharge of contaminants to air resulting from the discharge to land is a discretionary activity under Rule 5.5.5 of the Regional Air Plan (Stage 2). This rule is for all discharges to air from industrial or trade processes which are not specified in other rules in the plan. The discharge of wastewater to land is considered to be part of an industrial or trade process, which means that any odour resulting from the discharge requires consent under this rule.

Overall, the application is a discretionary activity.

## Public notification consideration

### 1. Is notification mandatory?

<b>1.1</b> Has the applicant requested that the application be publicly notified? (s95(3)(a))	<input type="checkbox"/> Yes	Application must be publicly notified. Go to 10.2
	<input checked="" type="checkbox"/> No	Go to 1.2
<b>1.2</b> Was further information, or commissioning of a report, requested under s92?	<input checked="" type="checkbox"/> Yes	Go to 1.3
	<input type="checkbox"/> No	Go to step 2.1
<b>1.3</b> If yes, was the request refused, or did the applicant fail to respond or fail to provide the information by the deadline?	<input type="checkbox"/> Yes	Public notification is required by s95C. Go to 10.2
	<input checked="" type="checkbox"/> No	Go to step 2.1

### 2. Is notification precluded?

<b>2.1</b> Is each activity subject to a rule or NES that precludes public notification?	<input type="checkbox"/> Yes	Rule(s): enter rule Go to 4.1
	<input checked="" type="checkbox"/> No	Go to step 2.2
<b>2.2</b> Is each activity a controlled activity?	<input type="checkbox"/> Yes	Application must not be publically notified unless there are special circumstances. Go to 4.1
	<input checked="" type="checkbox"/> No	Go to 2.3
<b>2.3</b> Is each activity a residential activity and a discretionary activity or a restricted discretionary activity?	<input type="checkbox"/> Yes	Application must not be publically notified unless there are special circumstances. Go to 4.1
	<input checked="" type="checkbox"/> No	Got to 3.1

### 3. Is notification required?

<b>3.1</b> Are any of the activities subject to a rule or NES that requires notification?	<input type="checkbox"/> Yes	Application must be publicly notified. Go to 10.2
	<input checked="" type="checkbox"/> No	Go to 3.2
<b>3.2</b> Will the activity have, or is it likely to have, adverse effects on the environment that are more than minor? (see Note)	<input checked="" type="checkbox"/> Yes	Application must be publicly notified. Complete 3.3 and go to 10.2

**Note:** In forming this opinion (a) to (e) apply:

- (a) we must disregard any effects on persons who own or occupy the land on which the activity will occur or any land adjacent to that land (section 95D(a));
- (b) we may disregard an adverse effect of the activity if a rule or NES permits an activity with that effect (subject to Policy 36 of the pSWLP) (95D(b));
- (c) in the case of a restricted discretionary activity, we must disregard any adverse effects that do not relate to the matters over which the rule or NES restricts discretion (95D(c));
- (d) we must disregard trade competition and the effects of trade competition - 95D(d); and
- (e) we must disregard any effect on a person who has given written approval - 95D(e)

### 3.3 Reasons adverse effects on the environment are less than minor / minor / more than minor

#### ***The existing environment***

The processing plant is located at the south-western edge of Mossburn, and the proposed discharge area is approximately 300m east of the plant and directly south of Mossburn. The siting of the discharge area relative to the town and the processing plant is shown in Figure 2 below.



Figure 1: Map provided by applicant showing processing plant (purple) and discharge area (blue)

#### ***Contaminant pathways***

The predominant soil type within the discharge area is Oreti, which has a severe vulnerability to nutrient leaching. This corresponds to the Oxidising physiographic zone, which is characterised by flat, free-draining soils which allow water to leach down to groundwater. The groundwater in the Oxidising physiographic zone contains high levels of oxygen, which allows nitrogen to accumulate. These characteristics indicate that the key contaminant pathway for wastewater discharge is deep drainage to groundwater.

#### ***Groundwater quality***

The proposed discharge area is located above the Castlerock groundwater zone (as mapped in both the Regional Water Plan and the proposed Southland Water and Land Plan). The likely direction of shallow

groundwater movement has been identified as moving from north-west to south-east (parallel to the Oreti River and Murray Creek).

There is only a small amount of data on groundwater quality in the vicinity of the discharge area, with three deep bores (more than 30m deep) showing nitrate levels of 1.32-2.65mg/L. The application identifies that Council's monitoring bore in the Castlerock groundwater zone (downgradient of the proposed discharge area) showed a clear increasing trend in groundwater nitrate concentrations between 2002 and 2016.

*Surface water quality*

The applicant has provided information on water quality in the Oreti River and the New River Estuary, which is detailed and referenced in the further information response provided. The application states that the concentration of Nitrate and Ammonia are within the A or B bands under the National Objectives Framework, and summarises water quality data which shows either decreasing levels of Nitrate Nitrite Nitrogen (NNN) or indeterminate trends at Council's monitoring sites from 2012-2016. The long-term trend (1989-2014) shows a statistically significant increase in NNN at the Wallacetown monitoring site.

The applicant has detailed research which identified that an appropriate mean annual Total Nitrogen concentration for the estuary is likely to be around 0.07mg/L. In contrast, actual Total Nitrogen concentrations are estimated to be between 0.34mg/L (summer) and 1.05mg/L (winter).

### ***Adverse effects of the proposed activities on the environment***

The key effects of the proposed discharge to land on water quality are summarised below:

- The storage available will hold approximately 75% of the daily volume of wastewater produced when the plant is operating at full capacity. This means that if the plant is operating when conditions are not suitable for discharge, the applicant will not be able to defer the discharge.
- The proposed use of the travelling irrigator at high depths (up to 20mm) increases the risk for nutrients present in the discharge or already present in the soil to be flushed below the root zone.
- The proposed nitrogen loading rate of 250kg/ha is higher than good management practice of 150kgN/ha/year considered to be acceptable as a nitrogen loading rate from discharges. The high loading rate increases the risk of nitrogen leaching to groundwater as it is not taken up by pasture. The application identified that after volatilisation occurs during discharge and based on the nitrogen removed by the cut and carry operation on the discharge area, the proposed 250kg/ha/year loading rate would result in an excess of 61.5-110.5kgN/ha/year being applied.
- The applicant used a mass balance assessment to assess effects on local groundwater quality. It identified that the best case scenario which can be expected is an increase of 2.7mgN/L in groundwater, with the likely average being an increase of 3.9mgN/L.
- The applicant has identified that the annual average nitrogen excess in the proposed discharge is 2,958kgN/year (87kgN/ha/year), and that this equates to a 0.17mg/L increase in groundwater nitrate concentration on an aquifer scale.
- The application estimates that of the nitrogen that reaches groundwater, 1,770kg is expected to be discharged to the Oreti River. Assuming 50% attenuation in-stream (including uptake by periphyton and macrophytes, which can become prolific and cause nuisance effects in-stream when high nutrient levels occur), the applicant has identified that the downstream dissolved inorganic nitrogen (DIN) concentrations resulting from the proposed discharge will be between 0.001-0.005mg/L.
- The nitrogen lost to water as a result of the discharge is conservatively estimated by the applicant as contributing 0.04-0.05% of the cumulative nitrogen load to the New River Estuary.

Council's Air Quality Scientist has agreed that the proposed mitigation measures are appropriate, and concluded that he does not expect significant odour issues to result from the proposed discharge. Further detail relating to specific affected parties is considered in section 8.2 below.

### ***Adverse effects that have been disregarded***

Consideration has been given to section 95D, which requires that specified effects must be disregarded. Effects on specific parties, including adjacent owners or occupiers, are considered specifically in section 8.2 below.

### ***Planning provisions (policies and objectives) relevant to adverse effects***

The key objectives and policies from Council's regional plans which relate to the potential adverse effects of the proposed discharge are detailed below. The relevant operative plan is the Regional Water Plan, and the relevant proposed plan is the decisions version of the proposed Southland Water and Land Plan which was notified on 4 April 2018.

The key objectives and policies from the relevant plans are shown below:

#### **Regional Water Plan:**

Objective 2 requires that water quality is managed so that there is no reduction in the quality of the water in any surface water body, beyond that of January 2010. Objective 8 requires that groundwater quality is maintained, or improved to ensure compliance with drinking water standards. Policy 25 is specific to effects on groundwater quality, with the requirement that adverse effects from discharges are avoided, remedied, or mitigated so that there is no deterioration in groundwater quality after reasonable mixing. Policy 31C requires that discharges to land are managed to avoid, remedy, or mitigate adverse effects.

**Proposed Southland Water and Land Plan:**

Objective 6 requires that there is no reduction in the overall quality of freshwater, and that surface water quality is maintained, or is otherwise improved where it has been degraded. Objective 8 requires that groundwater quality is maintained where it meets drinking water standards, and improved where it does not. Policy 10 relates to the Oxidising physiographic zone and requires the implementation of good management practices to manage adverse effects on water quality from contaminants transported via deep drainage, and that particular regard is given to adverse effects on water quality from contaminants transported via deep drainage. Policy 16A requires that adverse environmental effects are minimised by requiring the adoption of the best practicable option to manage the treatment and discharge of contaminants derived from industrial and trade processes.

**Regional Air Plan (Stage 2):**

Policy 7.3.1 requires that the impact on the health of people and communities from offensive or objectionable odours is avoided, remedied, or mitigated. Policy 7.3.2 requires that the impact of offensive or objectionable odours on areas of cultural or amenity value is avoided, remedied, or mitigated.

**Conclusion: *significance of adverse effects on the environment***

The objectives and policies relating to water quality above show that a decrease in water quality as a result of the discharge is unacceptable.

The use of deferred storage to ensure that wastewater or effluent is not discharged under inappropriate conditions is considered to be a good management practice, but is typically a minimum requirement for discharge activities in general, including discharges of farm dairy effluent to land. The application has not specifically addressed whether using additional storage as a mitigation measure would be a feasible option (particularly due to the potential for odour issues to arise), but I do not consider that having minimal storage can be readily accepted as the best practicable option. Other good management practices for discharges to land would typically include discharge at low depths (less than 10mm), and ensuring that the discharge area is appropriately sized so that loading rates do not exceed 150kgN/ha/year.

Overall, having considered the potential effects in relation to the direction of Council's planning documents, I consider that adverse effects of the proposed discharge on water quality are likely to be more than minor due to the combination of:

- The mass balance assessment showing that groundwater nitrate levels will increase;
- The low storage volume not being consistent with good management practice;
- The discharge being at high depths (up to 20mm) and a high loading rate of up to 250kg/ha/year not being consistent with good management practice;
- The discharge occurring under unsuitable conditions, and flushing nutrients to groundwater through induced drainage; and
- The potential for effects on surface water, including through cumulative effects, through interaction between groundwater and surface water downgradient of the discharge.

**Affected Parties and Limited Notification**

## 6. Statutory Acknowledgement Areas

<b>6.1</b>	<b>Is the activity on or adjacent to, or may it affect, a statutory acknowledgement area?</b>	<input checked="" type="checkbox"/> Yes	Go to 6.2
		<input type="checkbox"/> No	Go to 7.1
<b>6.2</b>	<b>Are the adverse effects on Te Rūnanga o Ngāi Tahu minor or more than minor?</b>	<input checked="" type="checkbox"/> Yes	Include TRONT in 8.2 and go to 6.3
		<input type="checkbox"/> No	Go to 6.3

### 6.3 Reasons why adverse effects on Te Rūnanga o Ngāi Tahu are less than minor, minor or more than minor:

The applicant has provided information which shows that the Oreti River (a statutory acknowledgement area) and New River Estuary (part of the Coastal Marine Area, which is also a Statutory Acknowledgement Area) will be affected by the proposed discharge to land.

## 8. Are any people adversely affected?

<b>8.1</b>	<b>Are the adverse effects on a person minor or more than minor (but not less than minor)?</b>	<input checked="" type="checkbox"/> Yes	Go to 8.2
		<input type="checkbox"/> No	Go to 8.3

### 8.2 Person(s) considered to be adversely affected (complete and go to 8.3)

Person	Effect on person (see Note)	Reasons why effect is minor or more than minor	Has written approval been provided?
Te Runanga o Ngai Tahu	Effects on cultural and spiritual values for Oreti River	Significance of the effects are unknown	No
Te Ao Marama on behalf of local runanga	Effects on cultural and spiritual values for Oreti River, and mahinga kai	Significance of the effects on local runanga are unknown	No
Invercargill City Council	Impact on water quality upstream of registered drinking water take	Proposed discharge will contribute 0.001-0.005mg/L of dissolved inorganic N to Oreti River	No
Brian & Josephine Healy	Potential for odour effects under some wind conditions	Own a residential building within 200m of the proposed discharge area	No
David & Leanne Stalker	Potential for odour effects under some wind conditions	Own a residential building within 200m of the proposed discharge area	No
Owen & Beverley Duthie	Potential for odour effects under some wind conditions	Own a residential building within 200m of the proposed discharge area	No
Thomas & Vicki Law	Potential for odour effects under some wind conditions	Own a commercial building (accommodation) within 200m of the proposed discharge area	No
William & Jennifer	Potential for odour effects	Own a residential building	No



Pearson	under some wind conditions	within 200m of the proposed discharge area	
Gavin & Christine Binnie	Potential for odour effects under some wind conditions	Own a commercial building within 200m of the proposed discharge area	No
David Rutland	Potential for odour effects under some wind conditions	Own a residential building within 200m of the proposed discharge area	No
Fraser & Moira Anderson	Potential for odour effects under some wind conditions	Own a residential building within 200m of the proposed discharge area	No
Tanya Day	Potential for odour effects under some wind conditions	Own a residential building within 200m of the proposed discharge area	No
Whakamatau Ltd	Potential for odour effects under some wind conditions	Own a commercial building within 200m of the proposed discharge area	No
Northern Southland Transport	Potential for odour effects under some wind conditions	Own a commercial building within 200m of the proposed discharge area	No

Odour effects on specific parties have been considered by Council's Air Quality Scientist. While significant odour issues are not expected, there may be the potential for effects to be minor or more than minor in relation to individual properties.

Council's Air Quality Scientist has advised that parties within 200m of the proposed discharge area could potentially experience odour issues under the right wind conditions. For this reason, I recommend that the owners (identified above) of buildings in Mossburn township within 200m of the proposed discharge area are identified as affected parties due to the potential for odour effects to occur. This includes commercial buildings, as they are likely to be staffed continuously during working hours and odour may have an effect on the operating staff. This is consistent with the direction of Policy 7.3.1, which requires that the impact on the health of people and communities from offensive or objectionable odours is avoided, remedied, or mitigated.

I consider it appropriate to send notice to the affected parties identified above to ensure that they are aware that the application has been publicly notified.

### **8.3 Reasons why no other person is considered to be adversely affected**

I do not consider that the owners of adjoining rural land will be affected, as the nature of the land use means that any neighbouring property owners will be present close to the discharge area less often than those in residential or commercial buildings. Any odour effects on rural neighbours are expected to be less than minor. There are no other public buildings or areas within 200m of the proposed discharge area.

There are no other registered drinking water takes down-gradient in the Castlerock groundwater zone, or from the Oreti River other than the take at Branxholme by the Invercargill City Council.

## **9. Special Circumstances – Limited Notification**

**9.1 Are there special circumstances that warrant limited notification of any other persons?**  Yes Application must be limited notified to those persons and any other affected persons. Go

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No to 9.2  
Go to 10

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