

Before the Independent Hearings Panel

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*under:* the Resource Management Act 1991

*in the matter of:* Submissions and further submissions in relation to the proposed Otago Regional Policy Statement (Freshwater parts)

*submitter:* **Fonterra Limited**  
Submitter ID FPI019

Statement of Evidence of Morgan Watt

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Dated: 28 June 2023

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Reference: B G Williams (ben.williams@chapmantripp.com)  
K I G Jacomb (Kirsty.jacomb@chapmantripp.com)

chapmantripp.com  
T +64 3 353 4130  
F +64 3 365 4587

PO Box 2510  
Christchurch 8140  
New Zealand

Auckland  
Wellington  
Christchurch



## STATEMENT OF EVIDENCE OF MORGAN WATT

### INTRODUCTION

- 1 My full name is Morgan Geoffrey Alexander Watt.
- 2 I am the Site Operations Manager for Fonterra Limited. As Site Operations Manager, my role is to ensure the day to day running of Fonterra site based at Stirling is in accordance with all of the policy and procedures set down both internally and externally.
- 3 I have been the Site Operations Manager for four years.
- 4 Prior to this I was Maintenance Manager for Stirling site responsible for the asset strategy deployment onsite.
- 5 In preparing my evidence I have reviewed:
  - 5.1 the evidence prepared by **Ms Suzanne O'Rourke, Ms Katherine McCusker, and Ms Susannah Tait;**
  - 5.2 the submission and further submission made by Fonterra in relation to the proposed Otago Regional Council Policy Statement (Freshwater parts);
  - 5.3 the section 42A report prepared on behalf of the Otago Regional Council.

### SCOPE OF EVIDENCE

- 6 In my evidence I will:
  - 6.1 provide an overview of Fonterra's operations at the Stirling manufacturing site;
  - 6.2 outline the current discharges from the Stirling site; and
  - 6.3 discuss the limitations regarding discharge methods at Stirling.

### FONTERRA'S STIRLING SITE

- 7 Fonterra's key manufacturing operation within the Otago region is the Stirling site located at the southern end of the Stirling Township (near Balclutha). The Stirling site has been operating for over 40 years and employs approximately 110 staff, including in driving, production, leadership, maintenance, administration and distribution roles.

- 8 The Stirling site processes up to 1.8 million litres of milk every day, and over 200 tonnes of cheese is made at the site daily. Peak processing at the site occurs between September and May with the site being closed for winter between June and August. Average wastewater volumes during peak processing range between 2,500 and 3,500 cubic metres per day.
- 9 The site is the largest cheese producer in Australasia and can process ten 20kg blocks of cheese per minute. Cheese production at the site has continued to grow with an increase in production of 23% over the last four years. Some 90% of the cheese made at Stirling is exported to key markets including South Korea and Japan, and the remaining 10% is consumed within New Zealand.
- 10 The Stirling site plays an active role in supporting community activities and events. Last year the site donated \$20,000 to an upgrade of the Balclutha playground which included construction of a Fonterra branded milk tanker as one of the pieces of play equipment. Further support is given through donations to the local women's rugby team, the local food banks, men's mental health and breast cancer. The site is involved with local events such as the planting of wetlands and picking up rubbish in the area, all as part of its stewardship role within the community.
- 11 The main part of the Stirling site, which is located on the north side of Mount Wallace Road, contains a cheese plant, whey processing plant, wastewater treatment plant and associated infrastructure, parking and other facilities. On the corner of St John and Baker Streets, and to the southwest of the main site and to the south of the main south railway line, is a dairy tanker depot and a fuel station. The reinstatement value of the facilities at Stirling is approximately \$235 million.

#### **DISCHARGES FROM THE STIRLING SITE**

- 12 Fonterra holds a number of resource consents authorising activities at the Stirling site issued by Otago Regional Council and Clutha District Council.
- 13 Consents issued by Otago Regional Council provide for activities including the take and use of water and discharges to air, water and land.

- 14 Current discharge consents held with Otago Regional Council that are relevant to the Freshwater parts of the PORPS are as follows:

<b>Otago Regional Council</b>		
<b>Consent</b>	<b>Activity</b>	<b>Expires</b>
2007.636.V1	Discharge to water	31 May 2043
RM11.095.01	Discharge cooling water	22 April 2046
RM19.165.02	Discharge to land (dairy liquids)	27 November 2039
2002.118	Take & use water	1 September 2037
2007.254.V2	Discharge whey to land	30 Jan 2033

- 15 Fonterra also discharges stormwater via a constructed wetland built for stormwater treatment to a local waterway. This discharge is a permitted activity and therefore does not require resource consent.
- 16 The take and use water consent (2002.118) authorises Fonterra to take and use up to 3,000 cubic metres of water per day from five points of take at the Matau Branch of the Clutha River / Mata-au for the purpose of manufacturing dairy products.
- 17 I now turn to briefly discuss the discharge consents.

#### **Discharges to water**

- 18 Fonterra's wastewater discharge consent (2007.636.V1) authorises the discharge of up to 3,700 cubic metres per day of wastewater to the Matau Branch of the Clutha River/Mata-Au for the purpose of operating the Stirling cheese factory. The wastewater discharges is only to consist of:
- 18.1 membrane bioreactor treated wastewater;
  - 18.2 clean in place flushes;
  - 18.3 wash water;
  - 18.4 extra boiler condensate return;
  - 18.5 water treatment plant back wash water; and
  - 18.6 excess reverse osmosis permeate water.
- 19 The consent includes a number of conditions relating to performance monitoring, including taking ongoing quarterly samples which are

analysed for various contaminants and the results provided to the Regional Council.

- 20 Wastewater from the Stirling site has been discharged to the Clutha River since 1982. In 1990, the discharge regime was changed so that whey was removed from the discharge and spray irrigated to pasture. The installation of a whey protein concentrate plant in 1997 further changed the process whereby the whey could be processed on site and used in a variety of products. These changes have resulted in an ongoing reduction of the waste volumes required to be discharged from the site and is consistent with Fonterra's ongoing commitment to reduce the discharges from its site operations.
- 21 In 2007, Fonterra proposed an upgrade to its wastewater treatment system to enable further treatment of its dairy processing wastewater prior to discharge to the Clutha River. There were six options investigated as alternative approaches to wastewater treatment each requiring an assessment of their merits and issues. Following this process, it was decided that a new biological wastewater treatment system was the preferred option for the Stirling site. Resource consent was granted for the system in May 2007 and the subsequent upgrade to the Stirling wastewater treatment facility cost approximately \$10 million.
- 22 The biological wastewater treatment system was selected as it produces high quality wastewater, has a small footprint and meets the river water quality requirements (Australian and New Zealand Environment and Conservation Council 2000 or 'ANZECC'). This system involves wastewater being pre-treated in the Dissolved Air Flotation (DAF) unit, and then further treated in a biological treatment system designed to remove phosphorus, biological oxygen demands (BOD) nitrogen and *Escherichia coli* (E. Coli). The maximum volume of wastewater able to be discharged from the site is limited to 3,700 cubic metres per day.
- 23 Ongoing monitoring and maintenance of the system includes real time monitoring of key parameters in the wastewater system. Maintenance includes cleaning of the membranes which concentrate the solids prior to discharge of treated wastewater. Each membrane costs approximately \$100,000 to replace with two being replaced this year and ongoing replacements planned in coming years.
- 24 Other processes include solids removal. This includes fats and proteins from the primary system and activated sludge from the secondary system. These solids are discharged to third party land as a fertiliser. Fonterra also holds RM11.095.01 which authorises the discharge of cooling water from the Stirling factory into a roadside drain where contaminants may enter water.

### **Discharges to land**

- 25 Fonterra holds two consents to discharge to land from Stirling.
- 26 RM19165.02 authorises the discharge of dairy liquid sludge to various properties throughout Otago. Dairy sludge is the by-products that are removed from the wastewater during the treatment process before the wastewater is discharged to the river. These by-products are in a more solid form, for example, fat and protein.
- 27 2007.254.V2 authorises the discharge of whey to land throughout the Otago Region for the purpose of by-product disposal and fertiliser application. Whey disposal to land is salt whey that cannot be processed due to the salt content of the whey. Pursuant to the consent, the salt whey is watered down and spread on land.

### **LIMITATIONS REGARDING DISCHARGE METHODS AT STIRLING**

- 28 The Stirling site continues to investigate options that reduce wastewater discharge volumes. However, the discharge of wastewater to water is an important part of the current operation of the Stirling site.
- 29 Any change to the discharge activity would need to address the following limitations:
- Topographical considerations - much of the surrounding land is steep hillside meaning irrigation activities are difficult;
  - Land constraints – Fonterra would require 370 ha of total land to treat 3,700m<sup>3</sup> of wastewater per day. There would be considerable time and cost associated with acquiring further land for this purpose. The land currently used for irrigation of Fonterra’s discharge is not owned by Fonterra; and
  - Soil limitations – the surrounding soils are subject to wet conditions meaning they are unsuitable for irrigation for around 50% of the season.

### **CONCLUSION**

- 30 Fonterra’s Stirling site holds a number of resource consents authorising discharges to land and to water.
- 31 There are a number of limitations regarding discharge methods at Stirling that mean it is not always practical (or better for the environment) to discharge to land rather than water.

- 32 Fonterra has made significant investment into its wastewater disposal system at Stirling. The wastewater discharged to the Clutha River is of high quality and it is important to Fonterra that the PORPS-FW provides a pathway for the consideration of ongoing wastewater and stormwater discharges to water from the site.

Dated: 28 June 2023

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Morgan Watt