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*under:* the Resource Management Act 1991

*in the matter of:* the proposed Canterbury Air Regional Plan

*and:* **Fonterra Co-operative Group Limited**  
*Submitter 63146*  
*Further submitter C15C/102825*

## Statement of evidence of Tim Keir

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## **STATEMENT OF EVIDENCE OF TIM KEIR**

- 1 My full name is Timothy Andrew Keir.
- 2 I am the General Manager of Operations – South Island for Fonterra Co-operative Group Limited (*Fonterra*). Within this role I am responsible for the performance of Fonterra’s manufacturing operations in the South Island.
- 3 I have been with Fonterra since December 1999, and through this time I have held various roles across manufacturing and milk collection.
- 4 I have a Bachelor of Technology (Environmental Engineering) (2000) and a Masters in Dairy Science and Technology (2002). Both of these qualifications are from Massey University.

### **SCOPE OF EVIDENCE**

- 5 My evidence relates to Fonterra’s milk processing operations in the Canterbury region. In my evidence I will provide:
  - 5.1 a description of Fonterra;
  - 5.2 an overview of Fonterra’s processing operations in the Canterbury region, along with growth expectations for these activities;
  - 5.3 a discussion of the key factors that are considered by Fonterra when developing a new site, and the circumstances within which they will be met;
  - 5.4 an overview of the proposed development at Studholme, with a focus on air quality and potential impacts; and
  - 5.5 a summary of the key issues and concerns that Fonterra has with the Proposed Canterbury Air Regional Plan (*pCARP*).

### **EXECUTIVE SUMMARY**

- 6 Fonterra supports the intent of the pCARP to manage the human influences on air quality in Canterbury so that adverse health and well-being are appropriately managed.
- 7 Fonterra and its shareholders are an integral part of the Canterbury environment. Fonterra has over 1,250 shareholder farmers in the Canterbury region, and five milk processing sites being Kaikoura, Culverden, Darfield, Clandeboye and Studholme. A large number of

people are directly employed by or rely on Fonterra, and it is a significant contributor to the wider economy.

- 8 Protecting Fonterra's assets in the Canterbury region from the effects of reverse sensitivity and resource constraints, along with enabling growth in processing activities at existing sites (such as that currently proposed for Studholme), or the development of new Greenfields sites, are key issues for Fonterra.
- 9 In simple terms, through the pCARP, Fonterra is seeking an objective, policy and rules framework that:
  - 9.1 recognises the investments and contributions made by existing industrial activities; and
  - 9.2 enables growth to occur if, and when, it is required in a sustainable manner.
- 10 This is in circumstances where Fonterra is very conscious of the effects of its operations and, as much as possible, plans the location and operation of its processing sites to minimise the potential for adverse effects.

## **FONTERRA CO-OPERATIVE GROUP LIMITED**

### **National operations**

- 11 Fonterra was established in 2001 when, with the passing of the Dairy Industry Restructuring Act 2001 (*DIRA*) and the voting by 84 percent of New Zealand dairy farmers, support was confirmed for the merger of the New Zealand Dairy Board, New Zealand Dairy Group and Kiwi Co-operative Dairies.
- 12 Fonterra is one of the top six dairy companies in the world by turnover, the leading exporter of dairy products, and is responsible for more than a third of international dairy trade. Fonterra is owned by more than 10,500 New Zealand dairy farmers who supply more than 15 billion litres of milk each year. Our global supply chain stretches from farms all over New Zealand to customers and consumers in more than 140 countries.
- 13 Fonterra is New Zealand's biggest company, and is a significant employer, with 11,000 New Zealand staff and a further 6,800 employees overseas. As many as 1 in 4 jobs in some rural areas are in the dairy farming and processing sectors. Fonterra owns 31 manufacturing sites within New Zealand
- 14 Fonterra processes 89 percent of New Zealand's total milk production. Last dairy season, Fonterra exported 2.2 million metric tonnes (*MT*) of dairy products to international markets.

- 15 Fonterra has an annual turnover of approximately \$19 billion. Fonterra is committed to not only delivering strong financial results, but also operating sustainably and contributing to communities where we live and work. Fonterra aims to produce the most nutrient dense food with the least environmental impact. This involves using our resources responsibly across the dairy value chain and tracking our performance with regard to water, carbon, energy use and waste.

#### **Canterbury operations**

- 16 Five of Fonterra's ten South Island milk processing sites are located within the Canterbury region. This includes two of Fonterra's five nationally significant sites being Darfield and Clandeboye. Combined, Fonterra's Canterbury sites can process up to 20 million litres of milk per day and they employ almost 1,100 people.
- 17 Key details on each site, including processing capacity, products and employees are provided in **Table 1** below.

**Table 1: Overview of Fonterra's Canterbury Milk Processing Sites**

<b>Site Name, Location</b>	<b>Maximum Processing Capacity (Litres per day, peak period)</b>	<b>Products</b>	<b>Employees</b>
Kaikoura <i>Kaikoura</i>	240,000	Cheese	21
Culverden <i>Blacks Road, Culverden</i>	900,000	Reverse osmosis, milk transfer station	0, all employed via Clandeboye
Darfield <i>Main West Road, Darfield</i>	7.5 million	Milk powder	200
Clandeboye <i>Rolleston Road, Temuka</i>	12.4 million	Milk powder, butter, anhydrous milk fat (AMF), cheese, protein	825
Studholme	840,000	Milk powder	48

<b>Site Name, Location</b>	<b>Maximum Processing Capacity (Litres per day, peak period)</b>	<b>Products</b>	<b>Employees</b>
<i>State Highway 1, Waimate</i>			

- 18 Milk processed at Fonterra’s Canterbury processing sites is primarily sourced from shareholder farmers within the Canterbury, Marlborough and North Otago regions with milk being taken either directly or via a reverse osmosis plant (such as that located at Culverden) to the nearest processing site with available capacity.
- 19 With the combined national Fonterra tanker fleet travelling more than 1 billion kilometres per year, ensuring processing plants are optimally located is of critical importance from an efficiency perspective.
- 20 A map showing the location of Fonterra’s Canterbury sites (relative to population density) is set out in **Appendix A** (taken from **Mr Jason Pene’s** evidence).

### **MILK PROCESSING CAPACITY**

- 21 Milk production in the South Island has historically grown by about five percent per annum and nationally by three percent per annum. This growth equates to the need to build one new medium-sized dryer each year. Fonterra is constantly modelling and reviewing options to cater for increases in milk volumes, and this year, capacity is being built at the company’s Edendale, Lichfield and Pahiatua sites.
- 22 In terms of future growth (and the potential need to expand or develop new ‘greenfields’ operations in Canterbury), it is important to understand that the DIRA places an express statutory obligation on Fonterra to collect and process milk from:
- 22.1 farmers seeking to become a shareholding farmer; and
- 22.2 existing shareholders to increase the volume of milk they supply.
- 23 Accordingly, as milk supply grows, through either increased production at an existing farm or the conversion of other forms of agriculture to dairy, Fonterra is obliged to collect (subject to very

limited exceptions under DIRA), pay for and process that milk (assuming an application is made to it to do so).

- 24 Fonterra therefore places a significant emphasis on ensuring the relevant District and Regional planning regimes within the areas it operates are able to accommodate existing plant expansion and potential new 'greenfields' development. If the planning regime were such that expansion of 'greenfields' development were not possible then there is a significant risk that Fonterra would:
- 24.1 breach its obligations under DIRA; or
  - 24.2 be forced to develop in locations which are far less efficient from, for example, a transportation perspective.
- 25 In respect to how Fonterra development occurs, its current development strategy includes a strong preference for the expansion of existing processing sites, rather than new 'greenfield' sites. The development of an existing site enables more efficient use of existing infrastructure, including water supply, wastewater irrigation and transportation systems, and facilities and services such as administration and associated staffing. Sometimes expansion is also possible within the limits of existing resource consents.
- 26 New 'greenfield' developments will nevertheless be considered if, for example:
- 26.1 a milk supply catchment exists to support it;
  - 26.2 there is a clear shortage of processing capacity;
  - 26.3 a significant volume of milk is being transported to processing facilities outside the catchment; and
  - 26.4 a new site is required to reduce the risk to the wider business (i.e. in terms of having milk supply spread over a number of sites rather than a single site).
- 27 Accordingly, although throughout my evidence I discuss the five existing Fonterra sites in Canterbury and the potential expansion of those, it is important to remember that at some point in the future it may be more efficient, economic or preferable (for the reasons set out above) to build a new 'greenfields' milk processing site in the Canterbury region rather than continuing to build capacity at an existing site.

- 28 In such circumstances, the operational requirements of a new facility would be dependent on it being located in (almost inevitably) a rural area where, for example:
- 28.1 it is within proximity to its product source (i.e. milk catchment) and destination (i.e. port) to create transport efficiencies;
  - 28.2 it has sufficient water takes and suitable land available for the discharge of wastewater;
  - 28.3 it is sufficiently isolated from neighbouring dwellings to avoid issues associated with nuisance effects (i.e. light spill, odour, visual amenity);
  - 28.4 there is a willing seller of the land purchased;
  - 28.5 the land is physically large enough to allow for multiple developments and on-site wastewater disposal with limited potential impact on neighbouring properties; and
  - 28.6 the land has resource consent for a sufficient volume of water that would allow for future development of the site, along with a reliable electricity supply.
- 29 In regard to the above, Fonterra is concerned that in setting provisions for the pCARP it is very easy to overlook the large number of other considerations that might need to be undertaken when considering a new 'greenfields' site. If the final provisions of the pCARP were such that large areas of rural land in Canterbury were not available for dairy processing (i.e. because of air discharge rules) then the opportunity for Fonterra to acquire a site that met all the other considerations would be even more limited.
- 30 In simple terms, Fonterra seeks that the pCARP enable industrial activity consistent with the activities undertaken by it. Unless there is a genuine reason for controlling air discharge effects (e.g. potentially more than minor adverse effects on people) then Fonterra seeks that further enablement be included in the pCARP.

## **STUDHOLME DEVELOPMENT**

### **Air Quality and Discharges**

- 31 **Mr Chilton**, in his evidence, provides a description of the existing Studholme site as a case study for Fonterra's operations and the potential implications of the pCARP on a proposed development of the site.
- 32 In brief, the key/principal emissions sources currently from the Studholme site include two coal-fired boilers, which have a

combined thermal output of 15 MW and the milk powder dryer (milk powder particulate matter).

- 33 The proposed development (for which resource consents have recently been applied for) will add two new 30 MT dryers, and increase the thermal output of the site's solid fuel burners to 115 MW. The new dryers and boilers will use baghouse filter systems to control particular emissions. As stated in **Mr Chilton's** evidence, the emissions controls associated with the new plant would effectively set current industry best practice.
- 34 The pCARP has key implications in relation to the Studholme site, and in particular Rule 7.18 which was relevant when considering future discharges to air, and specifically those associated with the consent application to expand the site over two stages. It is my understanding that given the compact nature of the Studholme site, there was potential that Fonterra's proposed discharges to air would not have met the requirements of Rule 7.18 (i.e. they would have been prohibited and no consent could be applied for). This discharge, as discussed by **Mr Chilton** would not have resulted in adverse effects.
- 35 In response to this proposed rule, Fonterra has proposed additional mitigation technology, such as increasing the height of the boiler stacks from 60 metres to 68 metres – even though this change is unlikely to materially benefit the surrounding environment and no people are expected to be exposed to a level of discharges where adverse effects might be anticipated.

#### **KEY ISSUES FOR PROCESSING IN THE CANTERBURY REGION**

- 36 The key issues facing Fonterra in relation to the pCARP are discussed comprehensively in the evidence of **Mr Jason Pene, Mr Roger Cudmore, Mr Richard Chilton, Mr Mike Copeland** and **Ms Justine Ashley**.
- 37 The purpose of the balance of my evidence is therefore to provide a brief introduction and high level overview of issues that I understand Fonterra will potentially face under the notified version of the pCARP. These include:
- 37.1 a lack of recognition of the significance of Fonterra's operations in Canterbury, and its contribution to the region's economic and social well-being;
  - 37.2 ambient versus localised air quality; and
  - 37.3 reverse sensitivity effects; and
  - 37.4 best practicable option.



38 Each of these issues is discussed briefly below.

**Recognition of Regionally Significant Industries**

39 As set out by **Mr Mike Copeland** Fonterra forms a significant part of the Canterbury economy. Fonterra's five existing plants are very important to the local communities near the plant sites (e.g. Timaru, Darfield, Waimate and Kaikoura) and metropolitan Christchurch.

40 Unnecessary restrictions placed on the operation or expansion of Fonterra's Canterbury milk processing plants, will impact negatively not just on Fonterra and its shareholder farm suppliers but also other businesses and residents throughout the Canterbury region.

**Ambient versus Localised Air quality**

41 The Proposed Plan does not distinguish between localised and ambient air quality, and therefore fails to recognise the location of the discharging activity and the level of population exposure to that discharge.

42 All five of Fonterra's Canterbury-based milk processing sites are located within relatively isolated rural areas which are characterised by very low population densities, and few, if any, adjacent sensitive activities. New developments would also be located in rural low-density environment.

43 Fonterra's discharges will impact on localised air quality, but have an insignificant influence on ambient air quality within the wider regional airshed.

**Reverse Sensitivity**

44 Fonterra has submitted that policies 6.7 and 6.8 in the pCARP do not accurately reflect the concept of reverse sensitivity or case law surrounding this issue - nor do they give effect to the Canterbury Regional Policy Statement ("RPS").

45 Policy 6.7 requires an existing and lawfully established discharger to reduce their effects or "relocate" should the surrounding environment become more sensitive.

46 Fonterra's Canterbury-based processing sites are all located in rural environments, and well away from densely populated environments. They reflect a significant level of investment.

47 Against that background, Fonterra ultimately has little control over the activities that locate beyond its boundary, and must rely on district councils to protect that site from reverse sensitivity effects through appropriate zoning and/or setbacks from boundaries or limitations on subdivision and minimum lot sizes. Fonterra is therefore concerned that pCARP fails to protect existing and lawfully

established discharging activities by requiring the discharging activity to reduce its effects or relocate should the environment surrounding it become more sensitive through, for example, urban growth or subdivision.

- 48 For example, a neighbour could subdivide or undertake a new sensitive activity on their land. As currently worded under Policy 6.7, at the time of consenting, Fonterra would have to reduce its adverse effects to meet the amenity requirements of these new activities or relocate.
- 49 Fonterra considers the economic cost of achieving this or relocating in these circumstances is not reasonable and the pCARP fails to recognise the value of existing investment or the contribution made by the activity to the economic and social well-being of the region. It is simply not possible for some industrial operations to relocate. And on the back of the adoption of the pCARP as it now stands, there would unlikely be any place in the Canterbury region that Fonterra could possibly relocate to.

#### **Best Practicable Option**

- 50 Fonterra is generally supportive of the use of Best Practicable Option as a means of managing air quality effects. For new sites (such as Darfield and Studholme) Fonterra has employed what it regards to be best practicable option technology.
- 51 Fonterra is at all times looking at ways to improve its environmental performance and when the appropriate opportunity arises it actively looks to upgrade existing plant and equipment to reflect current best practice. Given the significant investment involved (and potential disruption to manufacturing) these upgrades will typically occur at the end of asset life or when other upgrades are undertaken (to minimise the extent of any disruption).
- 52 Although the timing of upgrades is an important consideration, Fonterra is supportive of the use of best practicable option in the pCARP.

#### **CONCLUSION**

- 53 Fonterra is supportive of the need to manage the human influences on air quality in Canterbury so that adverse health and well-being are appropriately managed.
- 54 Fonterra is concerned to ensure that the changes proposed in Fonterra's submission are made to ensure that the current and future benefits of Fonterra's milk processing operations in Canterbury can continue to be realised.

Dated: 18 September 2015

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Tim Keir

# Appendix A

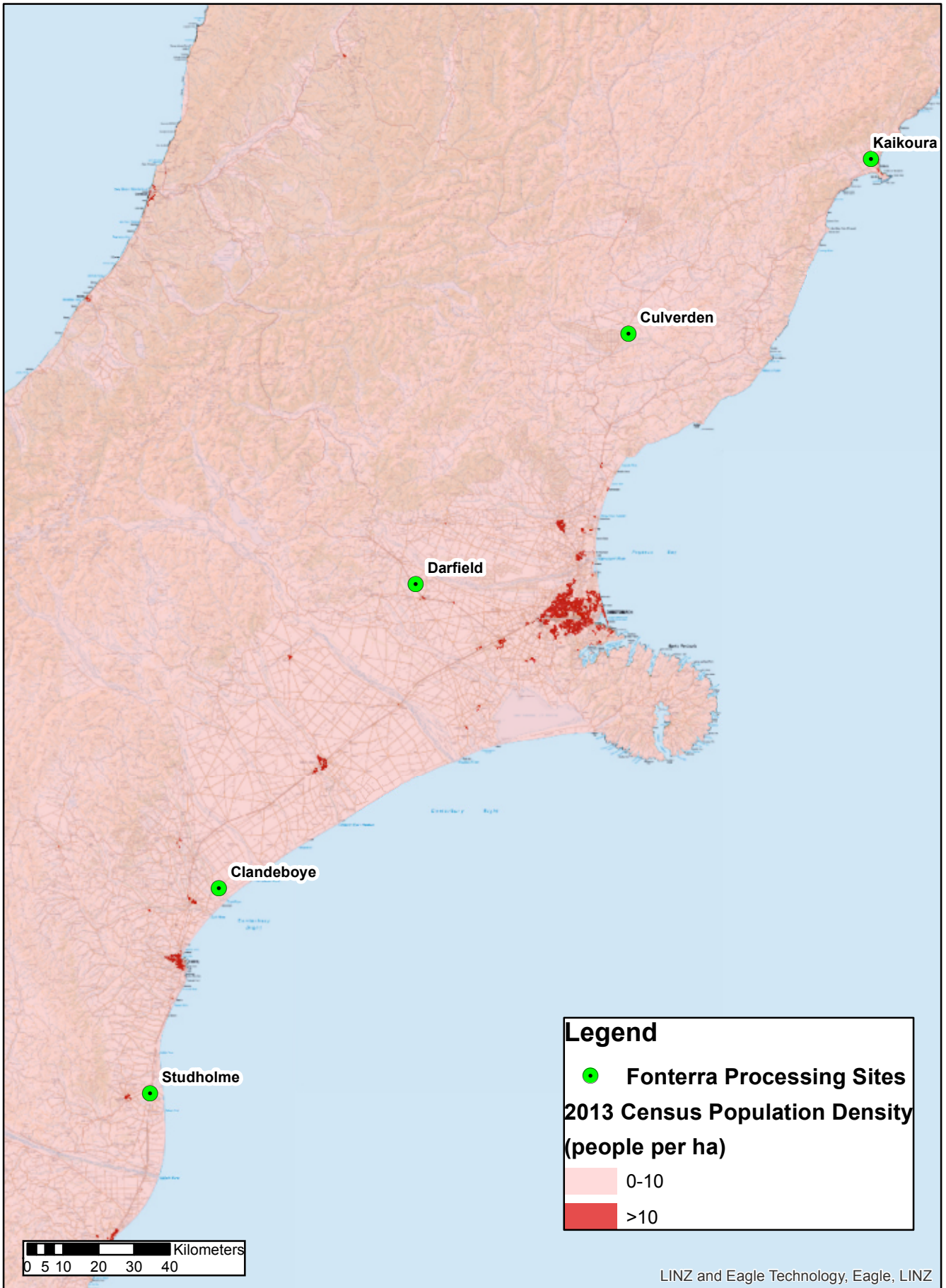


Figure A1: Fonterra Processing Site Locations and 2013 Census Population Densities by Meshblock

Source: Stats NZ