



## **Introduction**

- 1 My name is Ricky Paul Larsen.
- 2 I am the General Manager of New Zealand Cherry Corp (**NZ Cherry Corp**) and have held this role for the last three years. I report to the Board of Directors and have responsibility for implementing the strategic direction of the company. This involves leading all the day to day operations of the business, meeting budgetary goals, and identifying / developing new business opportunities that meet the objectives of the overall Strategic Plan.
- 3 I hold a Dip. Meat Technology and MBA from Massey University. I have 40 years of experience in the Meat Industry, including most recently 10 years as General Manager, of Blue Sky, and prior to that 10 years as Plant Manager of Alliance group, Lorneville Plant.
- 4 In preparing this statement of evidence I have considered the following documents:
  - (a) the plan change request;
  - (b) section 42A report; and
  - (c) relevant submissions.

## **Scope of evidence**

- 5 I have prepared evidence in relation to:
  - (a) overview of NZ Cherry Corp;
  - (b) primary production activity in Ripponvale;
  - (c) current operation of the NZ Cherry Corp orchard; and
  - (d) the proposed cherry orchard extension.

## **Executive summary**

- 6 NZ Cherry Corp currently owns and operates the largest netted cherry orchard in New Zealand, comprising 32 hectares (28 hectares of planted trees) which works in conjunction with the Judare Orchard (owned by the Van der Velden family with 7 hectares of trees planted) located between State Highway 6 and Ripponvale Road. The orchard is supported by a state-of-the-art pack house located in Cromwell. NZ Cherry Corp supplies premium cherries to both the national and international market.

- 7 An extension to the cherry orchard is proposed through Plan Change 14 (**PC14**) to ensure the ongoing growth and development of the business. The size of this extension has been carefully considered, balancing site suitability and constraints, as well as business and economic considerations. The rural living development proposed through PC14 is important to facilitating the cherry orchard expansion, providing cash-flow to support the significant investment required, mitigate the risks of producing a crop that is highly susceptible to a range of climatic events, and sustain the business until the new trees become productive.
- 8 Horticulture involves a range of activities that give rise to a potential for adverse off-site effects and reverse sensitivity. NZ Cherry Corp, like many other horticultural operators, takes great care to limit these effects as far as possible. In relation to the cherry orchard extension, management measures will include installation of the lowest noise generating frost fans, and netting of the orchards to avoid the need for bird scaring devices and establishment of orchard boundary setbacks and greenbelts to minimise spray drift. We continue to consider further innovations to manage effects, including development of rain covers that would remove the need to use helicopters to dry fruit during summer.
- 9 The PC14 proposal also includes a range of measures within the rural living area to manage potential for adverse effects from the NZ Cherry Corp and other neighbouring activities, including heavily planted buffer strips, building setbacks and requirements for noise insulation of buildings. With these measures in place and with knowledge of the effects that arise from operation of the existing orchard, I have a high degree of confidence that effects will be negligible and that reverse sensitivity effects will not arise.

### **Overview of NZ Cherry Corp**

- 10 NZ Cherry Corp grew out of a 40-year friendship and partnership between Bob Robertson and Henry Van der Velden and their families. It now owns the largest netted cherry orchard in New Zealand and has been involved in growing, picking and exporting cherries since 2005. A state-of-the-art pack house to fulfil their vision of becoming a totally integrated business from the field to the marketplace was constructed in 2014 to help their brands become positioned at the top of the premium cherry market. The pack house is located in Cromwell township, approximately 5km from the orchard.
- 11 The NZ Cherry Corp team ensure all picking, packing and export processes are in place to ensure optimum quality management, full traceability and best food safety. NZCC is one of only a few New Zealand Grower / Packers that hold a number of enhanced Industry accreditations / certifications (including Global GAP, Growsafe, GRASP and MPI validated MAO Packhouse systems) as a demonstration of Sector food safety excellence to meet and surpass international and domestic customer

requirements. (NZCC is the main supplier to Progressive Supermarkets in New Zealand).

- 12 The high-tech grading and packing plant ensures minimum of fruit handling. There is also a strong focus placed on the cool-chain management and rapid passage through the picking and packing process. These systems and processes ensure fruit gets to market in optimum condition ensuring only the best quality for all our customers. Likewise, continued development of our marketing function has ensured we have built sustained relationships with customers around the globe.
- 13 The extension of the orchard proposed as part of PC14 will ensure the ongoing growth and development of NZ Cherry Corp, as it continues to progress as a leader in the New Zealand cherry industry.

#### **Land use in the Ripponvale area**

- 14 Land use in the Ripponvale area is comprised of a range of rural production and other uses. Rural production activities include orchards (predominantly cherries but also summerfruit – apricots, peaches, nectarines, plums, apples and pears, totalling 217ha according to Horticulture NZ data quoted within its submission (number 38)), viticulture (8ha), and pastoral farming, as well as packing and processing activities to support horticulture and viticulture. The summerfruit orchards service New Zealand domestic trade only, with no exporting. There are five reasonable sized roadside fruit shops in the area (Jones, Webbs, Jacksons, Freeway, and Damn Good Fruit). These summerfruit orchards would also supply some major New Zealand supermarket chains. There is only one large vineyard on Ripponvale Road (Serendipity). The majority of Cromwell based vineyards are clustered in Bannockburn, with a few larger operators located closer to the Cromwell end of Lake Dunstan (Wooing Tree, Scotts Base and Aurum Wines). Other land uses include the racecourse, airfield, and a number of rural residential properties.
- 15 There are five different activities that occupy the northern end of Ripponvale Road:
  - (a) four cherry orchards:
    - (i) NZ Cherry Corp / Judare: 35ha planted;
    - (ii) 'Off your Tree': 4ha;
    - (iii) 'Alco' (Smith family): approximately 2ha; and
    - (iv) 'Jakimm' (Jamieson family): approximately 8ha;
  - (b) the community managed racecourse which holds only two annual race meetings per year. This represents very infrequent use and apart from the

odd equestrian event and a couple of annual camping events the site is largely unused;

- (c) north end of the airfield, with one hanger on Ripponvale Road, and six others where the main aviation activity is controlled approximately 500m to the south;
- (d) three pastoral farming operations:
  - (i) the PC14 property: traditionally sheep, deer and beef farming and some minor orchards (apricots, peaches, nectarines and pears);
  - (ii) the Sanders property: very low, extensive stocking unit mainly grazing goats. No intensive farming activities like irrigation, cropping, topping etc. takes place; and
  - (iii) extensive high-country sheep station rising above the PC14 property western boundary up along the tops of the Pisa mountain range; and
- (e) Rockburn Wines: wine-making and bottling operation housed in the building previously used as a Meat works facility.

#### **Overview of qualities of Ripponvale area for cherry production**

- 16 Successful commercial growing of cherries requires very specific growing conditions. They require a temperate climate, with a mix of cold winters (to assist fruit set for the coming crop). The trees need approximately 1000 hours at a chilled temperature of below 7°C to maintain winter dormancy. Insufficient 'chilled units' can significantly cause delayed and prolonged bud burst. Cherries also require hot, dry summers to ensure full size growth, ripening and production of high sugar levels. The best sites need to be free-draining, cherries do not like wet feet so prefer rich, fertile, alluvial soils and not heavy, compacted soils. Sites are preferably protected from seasonal frosts, (particularly during spring and summer) and limited summer rainfall. Any moisture on the cherry surface causes osmotic fruit swelling, drawn in by high sugar content during ripening, swelling the skin and causing cracks, increasing susceptibility to pest and disease infiltration). Access to water for irrigation during summer fruit ripening and harvest is also critical for fruit maturity and maintenance of general tree health.
- 17 Ideal growing conditions would provide protections from:
  - (a) frost (particularly from bud burst through to mature ripe fruit);
  - (b) wind, (by shelter from natural landscape, wind breaks and netting);

- (c) protection from natural predators like birds (achieved by complete bird netting cover); and
  - (d) flat land to avoid health and safety risk when picking on ladders and for general tractor work (spraying, mulching, mowing etc).
- 18 Block size and shape also need to be considered, so tree rows align north/south for best access to direct sunlight, and square shape to optimise design of rows, access tracks and optimal bird netting cover design (a 'scatter' of smaller, mis-shaped blocks will require more costly side netting).
- 19 The 22ha orchard extension is ideally situated, taking all these factors into consideration. It sits directly beside the existing NZ Cherry Corp orchard and fits easily into our existing four-block layout and main arterial access track. It is sheltered from the predominant north/east winds by a natural hill landscape, but is positioned sufficiently east away from the Pisa Range foothills, which can create significantly more frost exposure as frosts roll down the hillside and into the western flatter areas of the PC14 property where rural lifestyle development is now proposed.

### **Current operation of the NZ Cherry Corp orchard**

#### *Orchard plantings and production*

- 20 The orchards managed by NZ Cherry Corp are 35 ha (23,300 trees), comprised of the following plantings:
- (a) Judare (7ha of 4650 trees), planted in the late 1990s;
  - (b) NZ Cherry Corp blocks 1 + 2 (13.5ha = 9000 trees), planted in the early 2000's; and
  - (c) NZ Cherry Corp blocks 3 + 4 (14.5ha = 9650 trees), all planted by 2004.
- 21 There is a total of nine different varieties of trees which all mature and ripen at different stages in summer:
- (a) pre-Christmas: mostly NZ domestic supply varieties (approximately 8%);
  - (b) post-Christmas: early export supply (approximately 16%); and
  - (c) main export supply: later maturing varieties (approximately 76%).
- 22 NZ Cherry Corp produces approximately 500 metric tonnes (**mt**) of cherries each season (December/January). We employ six full-time equivalent employees and approximately six part-time employees on a permanent basis. During the length of the harvest season NZ Cherry Corp hires approximately 350 pickers (operating at

a daily peak of approximately 250) and approximately 120 packers at the Packhouse (at a daily peak of 75) to be able to secure the full season crop.

#### *Key market segments*

- 23 NZ Cherry Corp cherries are supplied to the following markets:
- (a) domestic NZ: mainly pre-Christmas (from the Judare orchard);
  - (b) East / South East Asia: a developed / high income market (Taiwan, Hong Kong, Singapore, Japan);
  - (c) South East Asia: an emerging market (Thailand, Vietnam, Malaysia, Indonesia);
  - (d) China: Wholesale/E-commerce;
  - (e) USA: Mainly smaller fruit; and
  - (f) fledging markets: in the developmental phase (Russia, India, Middle East, Europe, UK).

#### *Irrigation*

- 24 NZ Cherry Corp relies on water supply from the Ripponvale Irrigation Company (**RIC**), being the second largest shareholder within this scheme. Irrigation takes place as part of frost fighting during September and October and tree irrigation from November to mid-April. To address this, we have a 20 million litre holding dam centrally located in the orchard which is supplied directly from the Ripponvale irrigation race. NZ Cherry Corp traditionally has had sufficient availability of water from the RIC for frost fighting in spring and harvest tree irrigation in summer, although this has to be finely managed at peak periods between all RIC shareholders (e.g. run of heavy frosts in spring and in a run of extremely hot days in harvest during summer). The existing NZ Cherry Corp orchard does not have access to any ground water bores as a back-up.

#### *Bird protection*

- 25 NZ Cherry Corp is New Zealand's largest netted cherry orchard, where the total property is fully enclosed under one structure. This provides 100% protection from bird predators from October through to completion of harvest in early February. NZ Cherry Corp does not operate and has no need for any bird scaring devices.

#### *Frost protection*

- 26 Key frost mitigation techniques include:

- (a) under tree irrigation – provides 1°C to 2°C enhancement of temperature during a frost event;
  - (b) four wind machines – push any inversion (a warmer air layer) down to ground level, depending on frost conditions, potentially gaining 2°C to 3°C; and
  - (c) frost pots – only used in extremely cold frosts and only suitable in lower lying, cold spot areas of orchard. Used very infrequently.
- 27 Cromwell would normally expect approximately 10 to 20 frost events over September and October each season and can be for a duration as little as one hour, out to six to eight hours in a heavy frost.

*Use of helicopters for drying fruit*

- 28 Helicopters are only used for fruit drying during harvest from mid-December to end of January. Frequency could be from zero to ten rain events annually. Helicopters do not fly at night in the dark and are usually called out at first light at dawn before sunlight and heat can affect the fruit, and can be for a duration from 30 minutes up to at most two hours. The basic purpose of this exercise is to hydraulically remove excess water from the surface of the cherry to avoid fruit swelling and consequential skin cracking.

*Orchard maintenance activities*

- 29 General tasks such as mowing, mulching, pruning, and fertiliser application occur periodically, without any undue influence beyond the boundary.
- 30 A key task which occurs throughout the year is spraying. No spraying takes place at night, instead during the day, provided there is no wind. All orchard boundaries have side nets and access tracks which cover the majority of the spray drift area and it is unlikely that drift exceeds 10m beyond our boundary.

*Harvest activities*

- 31 Harvest takes place from mid-December to late January. Although there are a number of pickers within the orchard during this time, the only detectable effect at the boundary will be some minor quad bike movement collecting the cherry bins, and packhouse truck delivery via the access on the state highway. Harvest picking only takes place in sunlight hours, as pickers require full sunlight to be able to fully judge fruit colour and readiness.

## **The cherry orchard extension**

### *The proposed extension*

- 32 As part of the PC14 proposal, 29 hectares of land has been set aside for horticultural development, to be comprised of:
- (a) 22 hectares planted in cherries, approximately 14,650 trees; and
  - (b) a four hectare area of land set aside for seasonal worker accommodation. In addition to housing seasonal cherry pickers in December/January, it is contemplated that the accommodation could be utilised by smaller numbers of seasonal stonefruit workers (January-February) and those employed to pick and prune grapes (May-June) in the area. Accommodation for 60 workers has already been established. Further expansion of this will require resource consent.
- 33 The orchard extension will produce approximately 300mt of additional cherries on full maturity. It will require another three or four part time orchard tree care assistances, 150 extra seasonal pickers and 75 additional packing staff.
- 34 The timetable for planting and production within the orchard extension is:
- (a) stage 1: 3ha planted 2018 (2000 trees) fully productive 2025;
  - (b) stage 2: 10ha planted 2021 (6660 trees) fully productive 2027; and
  - (c) stage 3: 9ha planted 2022 (5250 trees) fully productive 2028.

### *Operation and effects*

- 35 The expanded orchard area would largely operate in the same way as the existing orchard. Of particular note:
- (a) frost protection would be achieved through installation of four new 5-blade frost fans. This model has been chosen because it generates the lowest noise; and
  - (b) it is expected that spray drift will be largely contained within the boundary of the orchard.
- 36 Rural living development is proposed on areas of the PC14 site adjacent to the orchard extension. A range of measures are proposed to ensure appropriate separation of activities and management of effects, including requirements for heavily planted landscape areas between the orchard and rural lifestyle properties, and requirements for acoustic insulation of dwellings. With these measures in place and with knowledge of the effects that arise from operation of the existing orchard,

I have a high degree of confidence that effects will be negligible and that reverse sensitivity effects will not arise.

*Scale of the extension*

- 37 The capital cost of the extension is in the order of \$5 million. A significant part of this cost (approximately 30%) is construction of the netting, which is scheduled to occur in 2024.
- 38 Given the significance of this investment the merits, scale, location and economic viability of the extension have been carefully considered. A summary of relevant considerations is set out below:

*Site constraints*

- 39 Availability of water:
- (a) Shannon Farm holds a groundwater permit and shares in the Ripponvale Irrigation Company Limited (**RICL**). This supply has been traditionally used for servicing the past pastoral farming and smaller Summerfruit Leyser Orchards. The water requirements and supply profiles for these past operations are a very different proposition to using the water for a new cherry orchard operation, however.
  - (b) The 22ha orchard extension will source its water supply from the existing groundwater permit. Independent experts (Waterforce) inform us that this bore will have sufficient water supply for irrigation and frost fighting on the proposed new 22ha cherry orchard, when supplemented by 20,000m<sup>3</sup> of water storage to improve reliability.
  - (c) There is an additional 213,000 m<sup>3</sup> per annum Ripponvale Irrigation Company quota allocated to Shannon Farm, however this represents less than 30% of water available from the groundwater permit. Extending the cherry orchards beyond our proposed 22ha in reliance on that water supply must be cautiously considered from a practical operating perspective and especially given uncertain, sometimes extreme, climatic conditions.
  - (d) The existing NZCC orchard relies solely on its RICL allocation, and given we are situated at the very end of the Ripponvale supply race we know that this struggles at peak seasonal periods (especially in a run of heavy frost days or run of extremely hot days during Summer, where all orchards down the line are attempting to extract maximum water take) and has to be finely managed to get by. In addition to concerns regarding the quantity of water available, there have been occasions in the past where the water becomes contaminated with run off from the ground above the RIC water race,

discolouring water to the point where it blocks sprinkler heads and pump filters and can become a concern with contact with fruit. The reliability of water supply must be carefully considered given the specific demands of cherries and the significant losses that would occur if supply was interrupted.

- (e) Extending our orchard operation from the existing 35ha out to 57ha, means it becomes even more important that we need to ensure we have a 'back up', contingency supply of irrigation water to ensure we can reliably service a significantly enlarged orchard operation. You would never increase the size of an enlarging orchard to its absolute legal limit of irrigation water take (which at best would be in the order of 4 hectares when storage can be utilised, based on the advice of Waterforce). In addition, current calculations of water demand are based on a 22 hectare planted area, on the basis that up to 4 hectares is currently reserved to advance workers' accommodation. Where that full area is not ultimately required for accommodation, additional planting may utilise this area and make further demands on the available water.
  - (f) Based on the independent advice received, NZ Cherry Corp has concluded that a larger orchard could not be serviced with the current water supply/consents. Water is a key constraint for all high value productive uses, and in this location the opportunity to increase allocation is understood to be low.
- 40 Climatic suitability: Exposure to the frost streams that roll down off the Pisa mountain range damages fruit, resulting in significant losses. Historically, exposure to these Pisa Mountain sourced frost streams have been bad enough to significantly reduce the summerfruit crops within the Shannon Farm summerfruit orchards. This occurred last spring where all the fruit from one of the apricot orchards was lost.
- 41 Soils: The 22ha orchard extension is placed in an area where the predominant soil type is 'Waenga' (Waen\_5a3) - topsoil depth of 20 to 50cm, with shallow sandy loam beneath which are 'moderately well drained, allowing for good tree root moisture retention (especially in the heat of summer) and a 'moderate permeability profile'. Soils to the west are 'Ripponvale' type (Ripp\_2a1) - shallower topsoil 0 to 45cm, well drained sandy loam underneath resulting in a 'rapid permeability profile' (Appendix L of the submitted PC14 Application, prepared by 'Landcare Soil Research'). As soils become thinner, this impacts on irrigation loss through rapid drainage as the soil water holding is lower and the stony texture can heat up the soil. Whilst all soils are suitable for orchard development, the location of the cherry orchard extension utilises the better soils on the site.

- 42 Operational requirements: The cherry orchard needs to be located on flat land for operational and health and safety reasons, such as use of ladders and machinery. The sloping portions of the PC14 site are accordingly unsuitable for the orchard from an operational perspective.

*Business/economic considerations*

- 43 Market opportunity: Currently domestic and global cherry fruit demand exceeds New Zealand fruit supply. The New Zealand cherry industry has doubled its annual production in the last five years and with planned new orchard developments is expected to double again in a further six to eight years' time.
- 44 Efficiencies arising from location adjacent to the existing orchard: Locating this new extension directly beside the existing NZ Cherry Corp orchard provides efficiency in access for general operations (central access lane will continue directly to the west and provide easy access for all enlarged orchard operational activities) and management/utilisation of staff and equipment.
- 45 Utilisation of the pack house and the existing investment in that infrastructure: The pack house currently operates seven to eight weeks of the year, for eight to ten hours per day during harvest. Fruit from the 22ha extension will increase the packhouse utilisation to two shifts of 8 – 10 hours during the harvest, effectively utilising 100% of seasonal NZ Cherry Corp packing capacity. Further expansion of the orchard would require development of additional pack house capacity. NZ Cherry Corp has assessed this to be cost prohibitive.
- 46 Contribution to business overhead costs and profitability: Growing annual production from approximately 500mt up to 850mt by 2028 with the enlarged orchard can be managed with the same management/marketing team thereby reducing per kilogram overhead costs and generating significant cost efficiency through economy of scale. This additional fruit will add approximately \$5M extra revenue annually and potentially double company profitability. Expansion beyond the level proposed would require additional management/marketing support, and some of these efficiencies would begin to erode.
- 47 Development of worker accommodation: One of the widely acknowledged constraints for horticulture is access to seasonal labour, and as NZ Cherry Corp's operation grows, so too does this challenge. A key contributor to this restraint is access to suitable season worker accommodation, at a justifiable capital cost. Recent growth of residential development within the wider Cromwell township / basin has seen seasonal accommodation facilities close and the land used for property development. Further adding to this dilemma is a community driven restriction and ultimately ban, on freedom camping (particularly around Lake Dunstan). NZ Cherry Corp's proposal includes making a significant investment in an onsite solution. Initial development of accommodation for 60 workers has

already occurred, and the intention is to increase the scale of this development to meet worker demand from the existing orchard and the extension, noting that this will be subject to further resource consent processes. Accommodating these people away from the Cromwell township takes some of the concerns out of the local township, while continuing to benefit from the retail spending on food and other essential services. As indicated above, the accommodation will also support other horticultural and viticultural operations which can utilise the workers' accommodation outside of the cherry picking season.

- 48 Funding: The capital cost of orchard development is significant, and these costs must be carried through the delay of seven years until plantings become fully productive. NZ Cherry Corp is in a strong investment position given the factors above regarding operational efficiencies, but funding an expansion greater than that proposed would be challenging. In order to fund the expansion, NZ Cherry Corp requires additional income streams, particularly in the period until the orchard extension becomes productive. The remainder of the PC14 site provides income potential, which has been balanced against capital funding required for the expansion.
- 49 Product and reputation risks: NZ Cherry Corp has a reputation for delivering high quality / premium fruit to our discerning customers, and as operations grow bigger it becomes more difficult to manage and supervise a significantly enlarged operation. Having observed companies that have fallen into the trap of growing too big, most would commonly accept, with the benefit of hindsight, can come at a cost to quality and standards, as a direct result of trying to control a bigger operation.
- 50 Diversification considerations: Other summerfruit developments are marginal in this location and do not deliver sufficient return on investment.

### **Orchard operation advancements/developments**

#### *Rain covers*

- 51 NZ Cherry Corp is putting considerable time, resource and investment in developing an effective 'rain cover' design that can be built at a justifiable capital cost. There are current overseas rain cover designs available, but at a capital cost that cannot support the investment. New designs, materials, drainage techniques and construction methods are under consideration. NZ Cherry Corp is planning a trial plot within the next two seasons. Once developed and constructed, this will solve the impact of rain events during harvest and consequential fruit cracking and loss of crop yield / profitability. Helicopters will not be required as a drying technique if this project is successful.

### *Lower Noise Frost Fans*

- 52 New five-blade frost fans are available and will be installed in the orchard extension. This will significantly reduce the impact of noise for the new property development and existing neighbours.

### *Research and Development*

- 53 Research and development of robotics in horticulture: Tertiary, R&D and Private Enterprise Organisations are actively exploring the development and introduction of robotics in horticulture.
- 54 Key opportunities include:
- (a) fruit scanning during crop spraying, ensuring spray is only directed at fruit, reducing spray volume and minimising spray drift;
  - (b) fruit picking – less people / less noise / lower cost; and
  - (c) soil mapping – to drive more efficient fertiliser application, directing fertiliser only where it is needed.
- 55 Tree and fruit scanning can also be used to collect data on harvest timing, growth rate, fruit yield, fruit readiness for picking, disease identification (ensuring only spraying when there is a genuine need), tree health assessment, and assist with packhouse efficiency by only picking fruit of the correct size, shape, colour and discarding defective fruit, and assist with information for pruning, pollination, bud count and fruit counts, for better orchard planning and management.

### **Ricky Paul Larsen**

13 May 2020