

IN THE MATTER OF the Resource Management Act 1991

AND

IN THE MATTER OF resource consent applications by Rangitata Diversion Race Management Limited (RDRML) to the Canterbury Regional Council and Ashburton District Council for resource consents for the construction, operation and maintenance of the Klondyke Water Storage Facility, its associated water takes from and discharges to the Rangitata River, and all associated activities

TABLED AT HEARING

Application: ...RDRML...

...Joint Hearing...

Date: ...30 April 2018...

**STATEMENT OF EVIDENCE OF JOHN VAN POLANEN
FOR ASHBURTON LYNDBURST IRRIGATION LIMITED**

30 April 2018

Introduction

1. My name is John van Polanen and I am giving evidence on behalf of Ashburton Lyndhurst Irrigation Limited (ALIL). I stood down from the ALIL Board in October 2017 after fifteen years with the last ten years as Chair. I am currently the Chairman of Rangitata Diversion Race Management Limited and have been for the past five years.
2. I became a shareholder of ALIL in 1987 when I purchased 92 hectares (ha) at Winchmore. Today I farm 860ha of which 778ha is irrigated by ALIL water.

3. I have been asked to give this evidence in support of the Klondyke pond proposal on behalf of ALIL.
4. ALIL is a shareholder of RDRML and has an agreement to take up to 13,287 litres/sec of water from the Rangitata Diversion Race (RDR) during the irrigation season.
5. ALIL operates an irrigation scheme between the Rakaia and Ashburton Rivers. The ALIL scheme area is generally bounded by the RDR to the north, State Highway 1 to the south and the Ashburton River to the West. ALIL, as a shareholder of RDRML, sources water from the RDR which takes water from the Rangitata and Ashburton Rivers. Based on the most recent 2017/2018 irrigation season, the total area of ALIL scheme is approximately 31,600 ha. Within this scheme area, there is approximately 28,100 ha of irrigated land.
6. Prior to 2012 the ALIL scheme distributed water to its shareholders via a network of open races. Between 2012 and 2017, ALIL converted its open race distribution network into a piped distribution system. The piped network delivers water to ALIL's 230 shareholders under gravity created pressure. All the delivery points supply metered water at 40 metres pressure and the data from each site is telemetered and recorded by ALIL staff. This piping upgrade has resulted in water savings of 18% within the scheme delivery system which has allowed the irrigated area to increase.
7. Prior to the scheme upgrade approximately 40% of the irrigated area was under spray irrigation with the balance being in border dyke irrigation. Today all properties in the ALIL scheme are irrigated with more efficient spray irrigation.

8. The ALIL Scheme upgrade to pressurised piping and the on-farm change from border dyke irrigation to spray irrigation on my own properties has provided a number of benefits.

9. The benefits have been:

9.1 A combined reduction of water use in excess of 60%.

This is made up of an 18% reduction within the scheme delivery system and an on-farm reduction in water use. Ten years ago I was irrigating with a border dyke system and using, on average, approximately 800mm in an irrigation season. As a result of converting to spray irrigation, mainly pivot irrigation, I am now using, on average, 450mm in an irrigation season. This is a 45% reduction in annual water use.

9.2 A reduction in N loss to ground water of approximately 45%.

This is calculated through the Overseer programme due to the change to a more efficient irrigation system.

9.3 Increased pasture growth from 15 tonnes grass/ha to approximately 20 tonnes/ha.

The increase in pasture growth has been achieved through more efficient watering and the grass utilising the 45% N that was previously lost to ground water.

9.4 40% increase in productivity.

This is direct result of growing more grass and crop more efficiently.

I understand these benefits are common across most of the farms in the scheme area.

10. ALIL supports all aspects of the Klondyke Water Storage Facility proposal, but most particularly, the proposed Pond and the associated flood flow take from the Rangitata River. In this regard, ALIL sees significant on-farm benefits from having improved reliability of water during times of peak demand. ALIL sees the pond as the next phase in improving water reliability which will allow

shareholders to once again improve water use efficiency resulting in reduced N loss to ground water.

11. Typically, on farm practice has seen farmers irrigate close to field capacity so as to build a buffer in the soil for periods when evapotranspiration will exceed water available for irrigation. On average, ALIL shareholders have a water allocation of 3.9 mm/day while evapotranspiration rates can be up to 7mm/day. The advantage with storage is that the shareholders can maintain soil moisture levels within the optimum range as we know the storage is always there and we do not have to build the buffer to compensate for high evapotranspiration rates. This reduces the risk of nitrogen leaching in a rainfall event as farmers will irrigate 'just in time' rather than 'just in case'.
12. ALIL also understands that the proposed 10 cumec flood flow take from the Rangitata River will mean that a smaller pond can be built if only the irrigation schemes associated with the RDR decide to invest in the proposal. A smaller pond will, I understand, be significantly cheaper to construct, which is clearly attractive for ALIL and also have a smaller environmental footprint. If other irrigators, presently outside of the RDR scheme wish to purchase an allocation from the Pond, then the proposed flood flow take will, I understand, allow more to benefit from the Pond.
13. ALIL is aware that it is likely that the RDR will face further restrictions from the Ashburton River for most of the irrigation season within fifteen years. This is due to the raising of the minimum flow level. ALIL is expecting an approximately 15% reduction in water availability for ALIL shareholders during peak irrigation demand periods.
14. I have attended presentations by NIWA staff outlining the predicted climate change in the next two to three decades. These climate changes are expected to reduce water availability from the rivers in some months where RDRML extracts irrigation water and we will also see an increase in evapotranspiration which will increase irrigation demand.

15. With climate change and the loss of Ashburton River water on the horizon, it is essential to be able to store water so ALIL shareholders are better able to plan for the future. ALIL designed the new piping network with extra capacity so it could distribute stored water when evapotranspiration rates are high. This is critical to ensuring that the irrigated farms can confidently offer product to the market.

16. There are two key points for ALIL supporting a large district storage pond instead of in scheme or on farm storage:

16.1 ALIL has relatively few on farm ponds and, in fact, some ponds have been filled in. Shareholders receive their water under pressure and if they put it into an on farm pond they would require pumping and electricity to pressurise the stored water to enable irrigation.

16.2 Land values within the ALIL scheme range from \$45,000 to \$60,000/ha. This value is a reflection of the highly productive soils within the scheme area. The land for the Klondyke proposal is \$27,000/ha. Within scheme storage ponds are likely to be a maximum of 3 metres deep whereas the pond for the proposed Klondyke storage is to be much deeper. This means that Klondyke storage will have a smaller footprint and be built on less productive land.

17. Reliability

I understand that there has been some discussion at the hearing regarding the statement made by Mr Veendrick that the water supplied by the RDR (via the two irrigation schemes) is 99% reliable. I am not a hydrological expert and so I do not propose to comment on that calculation. I can, however, confirm that the existing level of reliability that my farm secures is not optimal and reliability will further decrease with the absence of Ashburton River water. I can recall periods on my farms when irrigation restrictions have resulted in lower production and/or increased expenses so it is difficult to relate the 99% reliability figure to what I see on-farm. I accept, however, that reliability can be calculated in several different ways. I believe that more important than the

reliability of RDR being able to supply the contracted irrigation flow is the ability of irrigation companies to supply sufficient water to shareholders to meet agronomic requirements. With shareholders within ALIL having an average contracted flow of 3.9mm and evapotranspiration at times reaching 7mm there is only one way that this shortfall can be met and this is through stored water.

18. In summary, storage will provide ALIL shareholders with the security that water will be available to their farm when agronomically required, which will give them more certainty of investment to their farms. Matching irrigation to soil water requirements will help to lower N loss to ground water. Shareholders will be better able to predict pasture production and crop yields and give them the confidence to grow more valuable crops such as vegetable. Storage will replace the water lost from the Ashburton River and help offset the demands from climate change.
19. ALIL supports the pond and asks that the hearing panel grant consent to the project.

John van Polanen

April 30 2018