

**BEFORE THE CENTRAL HAWKE'S BAY DISTRICT COUNCIL**

220003

**IN THE MATTER OF**            the Resource Management Act 1991

**AND**                            An application by James Bridge for a resource consent to  
subdivide land at Pourerere (being Part of Lot 1 DP  
27067 and contained in Record of Title HBW3/400)

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**STATEMENT OF EVIDENCE OF STEPHEN PETER GOODMAN**

**28 June 2023**

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**MAY IT PLEASE THE COUNCIL**

1 My name is Stephen Peter Goodman

Qualifications – Diploma in Agriculture (1987), Diploma in Farm Management (1988), Bachelor of Commerce (1992), Certificate in Advanced Sustainable Nutrient Management (2015).

2 I have over 25 years of experience in the primary sector as an advisor working for corporates and now independently. Since 2009 I have been providing advisory services to farmers, growers, interested parties and institutions. Many years of experience has provided an in depth understanding of farm production, finance and resource management.

**Code of Conduct and Conflict of Interest Declaration**

3 I have read the Environment Court's Code of Conduct for Expert Witnesses 2023, and I agree to comply with it. I confirm that the issues addressed in this brief of evidence are within my area of expertise, except where I state I am relying on what I have been told by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

4 I have no commercial relationship with the applicant, save in my role as an expert in relation to this application.

***Introduction***

5 For this assignment I have reviewed the farm business before and after the proposed development. The farm was visited in October 2022 and a report was completed (refer attached). This determined that the development would have no significant impact on the wider community. The report did identify that the small 4.8% decrease in farm area resulted in marginal reduction in productive capacity of 4.5%. To determine the reduction in productive capacity, a typical sheep and cattle farming system was modelled with production that could be expected under average efficient management, before and after the change in land area. In both model's livestock carrying capacity was extended to just inside feed supply constraints. A land area decrease and consequential reduction in livestock was the only change to the before and after model. All other things remained equal.

6 The Farmax™ model of the whole farm was used to assess the change in production. There is no known margin of error when using exactly the same

modelled scenario and adjusting production for a change in land area in order to make a comparison.

*My evidence*

- 7 A technical memorandum written by Iain Grant of Landvision Limited (Landvision) for CHB district council reviewed my report and agreed with a small change in production. Landvision also agreed with the production constraints posed by the heavy class three soil that has a pan that inhibits drainage and therefore limits carrying capacity.
- 8 While the reduction in carrying capacity of circa 4 to 5% is small the Grant report is based on an assumption that the NPS-HPL does not allow even a minor loss of overall productive capacity. If that approach is taken, then, to maintain productive capacity after the subdivision, a significant amount of capital expenditure on drainage will be undertaken to increase the productive capacity on 40 hectares of the residual farm property.
- 9 Productive capacity in NZ pastoral farming systems, including this site, is limited by cold winter growing conditions. Production is limited further with poor drainage. Waterlogging reduces the strength of the soil, making it vulnerable to pugging and mud which leads to pasture damage that results in lost production and repair costs.

Unfavourable anaerobic conditions occur in waterlogged subsoils that leads to a buildup of toxic hydrogen sulphide and reduced iron and manganese. It can also cause reductions in potassium, chloride and magnesium in plants.

Ponding also occurs and pasture submerged for more than 4 days is likely to die off and reestablishment will occur through the seed bank in the soil. Pastures reestablishing in this way will not have a lot of bulk, or ability to be heavily stocked.

Weeds that are more suited to waterlogged situations take over and summer production is decreased because of reduced rooting depth of surviving pastures. Another costly outcome of waterlogging is that fodder conservation is delayed by several weeks resulting in poor quality fodder, less dense pastures and even more weed growth.

The various soil outcomes from poor drainage cause pasture loss and limit grass growth and utilisation. There are also additional costs in weed control, soil damage and pasture reestablishment.

- 10 I have mapped up to 46 ha of land for drainage and have remodelled the post subdivision scenario with 40 ha drainage as set out in the mapping attached. This development is to reduce pasture damage and increase pasture growth and utilisation by mitigating soil drainage constraints. An increase of 8 su's per ha as outlined in the Landvision report is adopted as a conservative expectation. This which equates to an additional 320 stock units (su) wintered. It is quite feasible that the drainage will allow production to increase to the top end of the range as outlined by Landvision of 26 su/ha, which will increase productive capacity.
- 11 18 su/ha (+8 su/ha) on the 40 ha with drainage development retains the properties existing productive capacity.
- 12 Other factors not modelled that will increase productive capacity further include the costs mitigated by drainage outlined in point 9 and production at the high end of the range at 26 su/ha.
- 13 There are environmental benefits with the drainage as it will reduce both sediment and phosphorus loss.
- 14 If this approach is taken, there will be no loss in overall productive capacity of the site.

Dated this 28th day of June 2023

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Steve Goodman