
in the matter of: the Resource Management Act 1991

and: submissions and further submissions in relation to
proposed Variation 1 to the proposed Canterbury Land
and Water Regional Plan

and: **Central Plains Water Limited**
Submitter

Rebuttal evidence of Hamish Lowe

Dated: 8 September 2014

REFERENCE: JM Appleyard (jo.appleyard@chapmantripp.com)
BG Williams (ben.williams@chapmantripp.com)

Chapman Tripp
T: +64 3 353 4130
F: +64 3 365 4587

245 Blenheim Road
PO Box 2510, Christchurch 8140
New Zealand

www.chapmantripp.com
Auckland, Wellington,
Christchurch



REBUTTAL EVIDENCE OF HAMISH LOWE

INTRODUCTION

- 1 My name is Hamish Lowe.
- 2 My qualifications and experience are set out in my statement of evidence dated 29 August 2014.

SCOPE OF EVIDENCE

- 3 In this evidence of I comment on:
 - 3.1 the evidence of Mr Chris Hanson with regard to the MGM Project, annual nutrient budgets and the suitability of Overseer;
 - 3.2 the evidence of Dr Alison Dewes with regard to the suitability of Overseer; and
 - 3.3 the need for caution to adopting the view of Dr Dewes with regard to implementing BMP's and GMPs.
- 4 As with that evidence I confirm I have read the Environment Court practice note and have complied with it in preparing this rebuttal evidence.

MGM PROJECT

- 5 Mr Hansen in paragraph 12 briefly discusses the MGM Project. He notes that:

“The significance of the MGM Project results is that it will allow the farmer to assess and compare nitrogen and phosphorus losses under agreed GMP and will allow Council to have the ability to assess compliance at a farm scale and at a catchment scale.”
- 6 I believe that while the MGM Project will develop and identify Good Management Practices (GMP) that can be used, care is needed to ensure that compliance is treated cautiously. Not all GMP's identified in the MGM Project will be applicable on every farm, as their adoption will be dependent on the farm type, its management and obviously the characteristics of its resources, and in particular its soils. Consequently the ability to meet specific water quality targets will be variable, as stated in my evidence in chief.
- 7 As Overseer is an averaging model there is the possibility for considerable variation in predicted nutrient losses from year to year and between farms, with actual leaching being greater 50 % of the

time by virtue of being an average. Again, caution is needed when using predicted outputs for compliance purposes.

IMPLEMENTATION OF BMP

- 8 It appears that Dr Dewes has mixed the use of GMP and Best Management Practices (BMP) with regards as to how they are used in Overseer.
- 9 In paragraph 29, she states:
- “Good management practice: Overseer already assumes many good management practices are in place”.
- 10 She also states in paragraph 40 (b):
- “Ensuring all best management practices “assumed by Overseer” are actually implemented in their entirety.”
- 11 She then goes onto say in paragraph 77:
- “Overseer also assumes that best management practices are already in place,…”
- 12 I provide my view of GMP and BMPs in my evidence in chief in paragraphs 44 to 49. In my view Overseer utilises GMPs. These are practices that are achievable and typically practical for most farms. They are distinctly different to BMP which in some cases are not attainable for some farmers; for either technological, resource or financial reasons.
- 13 Dr Dewes appears to be adopting a stance where by all farms should be operating at a GMP level and should be implementing BMPs. While this would be great, the reality is that as in addition to often not being attainable, BMPs are evolving and will continue to do so over time. At the same time current BMPs will transition and become GMPs.
- 14 Variation 1 focuses on the implementation of GMP’s (directly through Policy 11.4.13(b)). As I noted in my evidence in chief there are likely to be many instances where farmers are currently not operating at GMP levels and time will be required to transition into a GMP. On the basis of that transition alone it is also likely there will be a reduction in N loss; the extent of which we will have a better idea of once the MGM project is complete.
- 15 Accordingly in my view the primary focus of Variation 1 should be GMP’s and not BMP’s as there are likely to be relatively limited

opportunities to achieve mass adoption of BMP based on existing and likely future farm systems and available technical expertise etc.

ANNUAL NUTRIENT BUDGETS

- 16 Paragraph 109 of Mr Hansen and section 5.0 Mr Keaney's evidence comment on the need to annually review nutrient budgets.
- 17 I agree with them that reviewing annual budgets without significant farm changes will not be beneficial. Utilising and inputting seasonal data, and then having it relate to annualised averaged data within Overseer will result in numbers that are not specifically related to that season, and in my view served little purpose. Without changing the farming system there is little purpose in annually reviewing a nutrient budget as it introduces work with no clear benefit.
- 18 The potential resourcing limitations within the industry, as discussed below, further support the need for greater clarity and consideration of the appropriateness of undertaking reviews.
- 19 I believe a solution for initiating reviews is the setting of threshold triggers for changes of key input parameters. If this threshold is exceeded for a nominated parameter then a review is required. This might be a change in stock numbers of 10 % or an increase in the area cropped by 15 %.

SUITABILITY OF OVERSEER

- 20 In the evidence of Dr Dewes (paragraph 30 and 83) and Mr Hansen (paragraph 99) state they support the use of Overseer. However, they acknowledge limitations with using Overseer (Dewes, paragraph 67 and Hansen paragraphs 44 and 49). The limitations are similar to that described in my evidence in chef.
- 21 Consequently, given these limitations it is appropriate to restate my concern about Overseer being used as an absolute model. It should not be used as a compliance tool whereby the outputs are assessed for compliance with a 'pre-determined' number.

Dated: 8 September 2014

Hamish Lowe