

BEFORE

Canterbury Regional Council

IN THE MATTER OF

Proposed Variation 2 to the Canterbury Land and
Water Regional Plan

**STATEMENT OF EVIDENCE OF LYNN TORGERSON
ON BEHALF OF THE UPPER HINDS PLAINS LAND USER GROUP**

Dated 15 May 2015

1. INTRODUCTION

- 1.1 My name is Lynn Torgerson and I am an Environmental Engineer with Pattle Delamore Partners Ltd. I hold a Bachelor of Science in Civil and Environmental Engineering from the University of Wisconsin (Madison) USA (1988). From 1988 to 1998, I worked for the Wisconsin Department of Natural Resources as a Water Regulation Engineer. My duties involved the review, analysis and design of surface water resources projects, including flood management projects. In 1999, I was an Investigating Officer for the Canterbury Regional Council. From 1999 to 2005, I was a Hydrology Lecturer for the Natural Resources Engineering Group at Lincoln University. My lecture topics included hydrology and fluid mechanics, as well as wastewater management. I have been employed with Pattle Delamore Partners (PDP) since 2006 working on the design, analysis and consenting of surface and groundwater related projects.
- 1.2 I have been involved in the preparation of numerous resource consent applications, including the assessment of the relevant planning matters and the assessment of environmental effects for groundwater and surface water projects in Canterbury.
- 1.3 I have read the Environment Court Code of Conduct for Expert Witnesses contained in the practice notes date 1 December 2014 and have complied with it when presenting this evidence. This evidence is within my area of expertise, expert where I state that I am relying on facts or information provided by another person. I have not knowingly omitted facts or information that might alter or detract from the opinions I express.

2. SCOPE OF EVIDENCE

- 2.1 I have been engaged by the Upper Hinds Plains Land User Group (UHPLUG) to prepare and present this evidence. The evidence I will present deals with the specific policies and rules set out in proposed Variation 2 to the Proposed Land and Water Regional Plan (PLWRP) which are of concern to UHPLUG. My evidence proposes changes to selected Policies and Rules which may assist the panel.

- 2.2 I have read the planning report prepared by the Reporting Officers for the Canterbury Regional Council under section 42A of the Resource Management Act 1991 (RMA) and where appropriate, I have commented on it below.
- 2.3 My evidence is also based on contributions and evidence provided by Mr Michael Salvesen, Chairman of the UHPLUG.
- 2.4 My evidence focusses on:
- (a) Relationship between the Upper and Lower Hinds/Hekeao Plains catchments, and consideration of more relevant contaminants likely to pose risks to surface water quality;
 - (b) The link between the National Policy Statement for Freshwater (NPS) and setting appropriate limits and the management practices;
 - (c) A possible approach to deal with nitrogen loss in the Upper Plains catchment within the plan policy and rules that provides clarity and certainty to land users, while still giving effect to the Freshwater NPS.

3. OVERVIEW OF UHPLUG'S POSITION

- 3.1 The Upper Hinds Plains Land Users Group (UHPLUG) is a group of dryland farmers located in the Upper Hinds/Hekaeo Plains Area. They farm sheep, cattle, some deer, with some dairy grazing. They also produce winter feed crops.
- 3.2 UHPLUG supports improving the overall water quality in the Hinds/Hekeao Plains Area, and are pleased to see that the Ashburton Zone Committee and the Regional Council recognise the differing issues and catchment characteristics of the Upper Hinds/Hekeao and Lower Hinds/Hekeao Plains Areas, and therefore supports the establishment of two separate management areas to enable the development of suitable measures to manage water quality issues for the Upper Hinds/Hekeao Plains Area.
- 3.3 Members of UHPLUG already carry out key farm practice measures consistent with maintaining good water quality such as applying fertiliser in accordance with the Code of Practice for Nutrient Management. They also keep stock out of waterways during winter grazing, by either excluding intensively grazed stock from waterways with a vegetated buffer strip or behind temporary fencing.

- 3.4 While generally supportive of policies and rules that recognise the risks to the water quality and ecological health of the Upper Hinds/Hekeao Plains, it is UHPLUG's position that the Regional Council, by focussing on nitrogen leaching, have not addressed the key contaminants of concern to the water quality of the Upper Hinds/Hekeao catchment. By setting a cap on nitrogen loading as proposed in Variation 2, the Regional Council has imposed a restriction which is not necessary to protect the surface water quality of the Upper Hinds, Lower Hinds or the groundwater of the area.
- 3.5 As discussed in Mr Salvesen's evidence, the Upper Hinds/Hekeao Plains catchment is a rainfall-runoff dominated catchment with very little groundwater input. Water quality risks in the Upper Hinds are primarily related to the sediment, phosphorus, nitrogen and *E Coli* inputs via rainfall-runoff rather than leached nitrogen.
- 3.6 It is worth noting that many management measures are currently occurring in the Upper Hinds catchment to reduce the risks to surface water quality arising from rainfall-runoff generated incidents, such as riparian planting and stock exclusion in riparian areas. They are also currently carrying out key nutrient management practices such as nutrient budgeting and management of fertiliser application.
- 3.7 UHPLUG supports the requirements for all farming activities to operate at good management practices and supports the annual preparation of Farm Environment Plans (FEP) and OVERSEER budgets. In their submission they have provided their support to achieve good management practice nitrogen loss rates from 2017 as outlined in Schedule 7 and they also support the farm practices outlined in Schedule 24a.

4. RELATIONSHIP BETWEEN UPPER AND LOWER HINDS CATCHMENTS

- 4.1 While it is proposed to manage the Upper and Lower Hinds catchments as two separate management areas, it is recognised that there is a link in the quality of water between the two catchments. That is to say, that drainage from the Upper Hinds catchment flows into the Lower Hinds via the surface waterways. Therefore the water quality of the Lower Hinds has the potential to be affected by the water quality of the Upper Hinds surface waterways. It is my view that it is appropriate to establish water quality outcomes for the Upper Hinds surface waterways with the consideration of their relationship to the Lower Hinds.

- 4.2 Paragraph 3.31 of the Officers report notes that water quality in the upper catchment is generally good, and the nutrients are not over-allocated, while in the lower catchment the water quality is high in nitrates.
- 4.3 Due to the relatively low permeability of the soils and the underlying strata in the Upper Hinds area, there is very little flow-through from the Upper Hinds catchment to the Lower Hinds catchment. Additionally, due to soils and slope, irrigation is not practical in the Upper Hinds catchment. On this basis, those farming activities (such as fertiliser application) which have the potential to leach to groundwater in the Upper Hinds catchment are unlikely to affect the quality of surface waters in either the Upper Hinds or Lower Hinds waterways, or the Lower Hinds groundwater as a result of leaching.
- 4.4 While the water quality is unlikely to be affected through leaching, it is recognised that nutrients and other contaminants can be entrained into rainfall runoff, which can then transport the contaminants directly into the surface waterway. It is my view that appropriate management measures with respect to fertiliser application is important in reducing the risk to the surface water quality arising from contaminants entrained in runoff.
- 4.5 I agree that the greatest risks to the surface water quality in the Upper Hinds catchment is sediment, phosphorus, nitrogen and *E Coli* and that land use and discharge activities should be managed to reduce the risks posed by these inputs. It is my view that when the Farm Practices outlined in Schedule 24a are implemented, these measures are effective in reducing the risks to surface water quality posed by these inputs.

5. LINKS TO THE NATIONAL POLICY STATEMENT FOR FRESHWATER (NPS)

- 5.1 It is understood that the National Policy Statement for Freshwater (NPS) is a key driver for many of the policies and rules proposed in Variation 2, and that the Regional Council is required to give effect to the Freshwater NPS when drafting regional plans. Specific policies within the Freshwater NPS are intended to enable the objectives of the Freshwater NPS, namely to safeguard the life-supporting capacity, ecosystem processes and indigenous species in sustainably managing the use and development of land, and of discharges of contaminants (Objective A1) and to ensure that the overall quality of fresh water in a region is maintained or improved (Objective A2).

- 5.2 Policy A1 enables both these objectives to be attained by establishing freshwater objectives and freshwater quality limits.
- 5.3 The discussion component of Policy A1 provides guidance on how fresh water quality limits should be defined, and states that there should be an examination of the following:
- (a) those parameters that need to be managed by the setting of a limit because they will determine whether the freshwater objective is achieved;
 - (b) the limit for each of those contaminants, taking into account any interactions between those contaminants;
 - (c) the appropriate limit to achieve the objective established by the community, as opposed to the scientific approach to a limit;
 - (d) where the limit is to be applied.
- 5.4 The Officer report summarises the conclusions drawn by the Ashburton Zone Committee regarding the dominant contaminants in the Upper and Lower Hinds catchments, and the subsequent setting of limits and targets by the Regional Council under a science informed, collaborative planning process. While I would agree that the process as described does follow the guidance provided, in my view the limit/target setting process should not stop there.
- 5.5 The Freshwater NPS guidance goes onto state that experience “suggests that limit setting, particularly water quality, will be difficult to get right the first time. Once a limit is set, it is likely to get modified and refined in subsequent plan changes as better information is obtained.”
- 5.6 I would like to address this. It is my opinion that where it is timely and the information readily available, a further iteration of limit/target setting arising from the feedback from the submitters is appropriate and gives effect to the Freshwater NPS. However, waiting for a new generation of the plan is, in my view, contrary to giving effect to the objectives of the Freshwater NPS, particularly when there may be period of years before the next plan generation process is commenced.
- 5.7 One example that comes to mind is setting a capping limit for nitrogen loss in the Upper Hinds catchment (Policy 13.4.11) where the analysis of the

available data provided to the Regional Council through submissions does not support the need for a cap. I discuss this in more detail further later in my evidence. It is my opinion that valid information gained through submissions should be incorporated into the current plan, and is a crucial part of giving effect to the Freshwater NPS.

- 5.8 The Reporting Officer has commented that some methodologies proposed through submissions would require significantly more resource and analysis and would likely amount to re-starting the process. While I agree that those circumstances could result in the delay of giving effect to the Freshwater NPS, there is value in getting it right (or as close to right) in the first time.
- 5.9 The Freshwater NPS appropriately recognises the efficacy and importance of management measures as another means in which the water quality objective can be achieved. Freshwater NPS Policy A3 b states ‘where permissible, making rules requiring the adoption of the best practicable option to prevent or minimise any actual or likely adverse effect of the environment into fresh water, or onto or into land in circumstances that may result in that contaminant entering freshwater.’
- 5.10 In my view, this policy supports the position that management measures exist and can be implemented to achieve good water quality outcomes. It is my opinion that the inclusion of the requirements for a Farm Environment Plan (Schedule 7) and Farm Practices (Schedule 24a) within the rules for the Upper Hinds catchment is appropriate, and when carried out, these measures are effective in ensuring that the risks to the surface water quality of the catchments are reduced.

6. SUBMISSIONS TO SPECIFIC POLICIES CONTAINED IN PROPOSED VARIATION 2

PAGE 3/4, POLICY 13.4.9

- 6.1 In its submission, UHPLUG offered its support to parts (a) and (b) of Policy 13.4.9, however UHPLUG sought to delete part (c) as it considers that nitrogen losses through leaching is not among the primary risks to the water quality in the Upper Hinds catchment. In my view that the primary risks to the water quality are from those contaminants which are more

likely to be conveyed into the streams through rainfall-runoff processes, rather than leached nitrogen.

- 6.2 UHPLUG support improving the management of microbes, phosphorus, nitrogen and sediment as these contaminants have the potential to be entrained in surface runoff discharging into the waterways directly, and therefore supports the Officer Recommendation R13.4.9 to include nitrogen in part (b). It is my view that it is appropriate to include nitrogen in part (b) among the contaminants where improved management is warranted.
- 6.3 However, given that nitrogen leaching is not a primary risk to the water quality of the catchment, and while “**preventing** (R13.4.9) or **restricting** (13.4.9 as notified) increases in nitrogen losses in the Upper Hinds/Hekeao Plains Area” is readily achievable through the use of Farm Environment Plans and the adoption of good management practices, and it is my view that part (c) of Policy 13.4.9 is simply unnecessary. The inclusion of this part of the policy does not provide a meaningful contribution to effectively managing an actual risk to water quality in the Upper Hinds/Hekeao Plains Area.
- 6.4 I have also considered this part of the policy with respect to the potential cumulative effect to the Lower Hinds catchment which is considered to be nutrient over-allocated with respect to nitrogen. Again, as the greatest risk to the surface water quality to the Lower Hinds from the activities in the Upper Hinds is via rainfall runoff rather than nitrogen leaching. Part (b) seeks to improve the management of nitrogen, among other contaminants, and is far more likely to provide an effective improvement to the surface quality of the Lower Hinds given that the contaminants of concern are generally conveyed through runoff and surface waterways.
- 6.5 In my view, part (c) as notified or as recommended by the Reporting Officer does not add value to protecting the water quality of the Upper Hinds catchment or the Lower Hinds catchment from the risks associated with nitrogen leaching.

PAGE 4, POLICY 13.4.11

- 6.6 In UHPLUG's submission, they have indicated their support to maintaining the water quality of the Upper Hinds/Hekeao Plains Area so as to ensure that the total nitrogen concentration in monitored stream and rivers does not increase beyond the status quo. They also support the requirement for all farming activities to operate at good management practice to maintain current phosphorus losses.
- 6.7 There are two issues that concern UHPLUG with respect to setting a numerical cap for nitrogen. The first is that the available water quality does not demonstrate that nitrogen in this part of the catchment is a problem that requires remedying. The second issue arises from the inconsistency and variability in determining the numerical figure.
- 6.8 A brief review was undertaken by UHPLUG last year to determine how the numerical figure of 114 tonnes of nitrogen per year for the Upper Hinds/Hekeao Plains was determined. It appears that the dataset used to determine this figure was based on two years rather than the four years as specified in the Baseline Land Use definition. I am also aware of the considerable variability in OVERSEER calculations.
- 6.9 While the Reporting Officer is of the view that the capping figure is realistic (paragraph 9.229), he also concludes that the requirement to cap the nitrogen loss at 114 tonnes per annum is of only marginal benefit when included in Policy 13.4.11, and then goes on to suggest in paragraph 9.231, that further amendment could be made to remove the 114 tonnes, but it is not recommended at present. This leads me to conclude that a numerical cap does not appear to be particularly helpful to achieving the desired water quality outcome.
- 6.10 While I consider that his next statement regarding his recommended "adjustment improves certainty and clarity with respect to expectations for this part of the Hinds/Hekeao Area" was for the wording change related to the phosphorus losses, it is my view that the theme of certainty and clarity is still relevant, and that in the absence of a numerical figure, there could be another method in which more certainty and clarity could be provided.
- 6.11 While I hold the view that policies should direct focus on managing all the key risks rather than singly focussing on a nitrogen load limit, it appears to

me that the intent of this part of the policy is to restrict increases in nitrogen losses to ensure that the total loading on a farm by farm basis does not increase beyond status quo. However, if the farm loadings can be managed to avoid any increased loss from the area as a whole, then the required objectives have been met.

- 6.12 My conclusion regarding intent appears to be supported on page 272 [(within the Technical Memoranda from L Scott and B Bower (31 March 2015)], where they report that “the intention of the Zone Committee was to maintain the current state of water quality by not allowing nutrient leaching from land use to increase above current levels.”
- 6.13 It is my view that this could be achieved by revising the wording of Policy 13.4.11 as below:
- 6.14 “*Maintain water quality in the Upper Hinds/Hekeao Plains Area by ~~capping~~ **managing** the discharges of nitrogen **so that the nitrogen loss from the Upper Hinds/Hekeao Plains Area does not increase above the loss that occurred between 1 July 2009- 30 June 2013** ~~at 114 tonnes of nitrogen per year~~ and requiring all farming activities to operate at good management practice to maintain current phosphorus losses.”*
- 6.15 Such an approach is consistent with the water quality data, which seems to demonstrate that nitrogen in the Upper Plains catchment does not require remedying. This approach may possibly be seen as a more pragmatic means of providing certainty and clarity for those carrying out current and future farming activities in the Upper Hinds catchment.

7. SUBMISSION TO SPECIFIC RULES IN THE PROPOSED PLAN

Page 6/7, Rules 13.5.8 - 13.5.10

- 7.1 In UHPLUG’s submission, they opposed the condition to these rules where the nitrogen loss calculation for the property does not increase above the nitrogen base line as it was their view it is unnecessary. This was due to the point that the available data does not demonstrate that nitrogen losses arising from farming activities in the catchment are significantly adversely affecting the surface water quality in the catchment.

- 7.2 Rather than the conditions of the rules limiting the leaching to no increase above the nitrogen baseline for each property, they could be reworded to require that, *“Nitrogen loss shall be managed to ensure that overall nitrogen loss from the Upper Hinds/Hekeao Plains Area does not increase above the losses that were occurring between 1 July 2009 to 30 July 2013.”*
- 7.3 This approach recognises that the risks to water quality are rainfall runoff generated, rather than nitrogen leaching related. Therefore, even if there is an increase in nitrogen applications on a particular farm above the nitrogen baseline, the risk to the surface water quality via leaching is unlikely to be greater as a result of the increase and the risk from overall flow can be managed by good farm and catchment practices.
- 7.4 The measures proposed through the implementation of a Farm Environment Plan and Farm Practices are effective in addressing the contaminants that are more likely to pose a risk to the quality of the surface water so that the overall catchment load from the Upper Plains does not increase.

Page 7, Rule 13.5.12

- 7.5 Rule 13.5.12 classifies the use of land for a farming activity that does not comply with condition 1 of Rule 13.5.9 or condition 1 or 2 of Rule 13.5.10 as a prohibited activity. UHPLUG, in its submission, opposed the use of the prohibited status for this rule.
- 7.6 The *prohibited* activity status means that no resource consent can be applied for, nor can any consent authority grant consent for such an activity. This approach unnecessarily restricts development without allowing for advances in science, technology or economics. This also seems harsh in light of the available water quality data and Zone Committee conclusion that the Upper Hinds catchment is not over-allocated in terms of nitrogen.
- 7.7 By removing *prohibited* activity status, I do not mean to suggest that I do not consider that farming activities which increase above the nitrogen baseline should be routinely consented. Instead, it is my opinion that the pLWRP already has a solution available. In Section 2.3 Rules of the

Decisions to Submissions to the pLWRP (p 2-2), the plan describes non-complying activities are those which are generally inappropriate. By this definition, the plan has signalled its intent that such an activity status will have to be considered more thoroughly, and that granting of such of consent would not be routine.

7.8 Section 104D of the RMA outlines the particular restriction for non-complying activities. This section requires that the applicant demonstrate that the activity either has adverse effects which are minor or the activity will not be contrary to the objectives and policies of relevant plans.

7.9 By using the non-complying status, the Regional Council can still decline an application for the activity (and must if it does not meet the terms outlined in Section 104D), but does not prevent an application being made. In my view, this still allows the Regional Council to give effect to the Freshwater NPS.

7.10 I note the Reporting Officer paragraph 9.251 indicates that this issue has been discussed in both the LWRP and Variation 1 hearing, and it is his view that there aren't any compelling reasons to depart from the existing situation. However, in my view the compelling evidence is that the nitrogen load emanating from the Upper Plains catchment is insignificantly low, is not increased and therefore does not meet the threshold of a land used activity that should be prohibited.



Lynn Torgerson

On behalf of Upper Hinds Plains Land User Group (Submitter Number 56707)

Dated: 15 May 2015