BEFORE THE ENVIRONMENT COURT

IN THE MATTER OF	appeals under clause 14 of the First Schedule to the Resource Management Act 1991 concerning Proposed One Plan for the Manawatu-Wanganui Region
	FEDERATED FARMERS OF NEW ZEALAND ENV-2010-WLG-000148
AND	**MINISTER OF CONSERVATION ENV-2010-WLG-000150**
AND	**DAY, MR ANDREW ENV-2010-WLG-000158**
AND	**HORTICULTURE NEW ZEALAND ENV-2010-WLG-000155**
AND	**WELLINGTON FISH & GAME COUNCIL ENV-2010-WLG-000157**
	Appellants
AND	**MANAWATU-WANGANUI REGIONAL COUNCIL**
	Respondent

STATEMENT OF EVIDENCE OF SHANE ALEXANDER HARTLEY ON THE TOPIC OF SURFACE WATER QUALITY – NON-POINT DISCHARGES ON BEHALF OF FEDERATED FARMERS

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2 April 2012

INTRODUCTION

1.1 My name is Shane Alexander Hartley. I am a Director of Terra Nova Planning. I hold the qualifications of Bachelor of Arts in Political Studies and History, and Bachelor of Town Planning. I am a Member of the NZ Planning Institute.

1.2 I was actively involved in policy and resource consent processes while employed by the Rodney District Council between 1981 and 1999 holding the various positions of Planner, Senior Planner, Planning Manager, and Forward Planning Manager, and since 1999 have as a consultant been involved in numerous policy and consent processes for both private clients and public agencies.

1.3 My professional experience has substantially been in the area of strategic and District Plan land use. My extensive experience with statutory processes and documents includes:

- the Auckland and Northland Regional Policy Statements,
- Auckland Regional Growth Strategy,
- Waikato Regional Plan: Variation 5 - Lake Taupo,
- District Structure Planning,
- District Plan resource management, including Plan and plan change / variation preparation and processing, and
- land use and subdivision resource consent applications and private plan changes.

1.4 I have read and agree to comply with the Environment Court's Expert Witness Code of Conduct (Consolidated Practice Note 2006). This evidence is within my area of expertise, except where I state that I am relying on some other evidence. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

1.5 My evidence relates to Chapters 6 and 13 of the Horizons Regional Council One Plan. These are the chapters which contain the objectives and policies, rules and methods relating to water quality.

1.6 Federated Farmers' appeal relates to three key matters which are;

(i) The use of LUC as a base for determining nitrogen leaching rates (Policy 6-7, Policy 13-2C, and Rule 13-1B2, including Table 13-2);

(ii) The provision of a permitted activity rule for dairy farms in the relevant Water Management Sub-zones, and

(iii) The meaning of the term "reasonably practicable" as used in Rule 13-1, 13-1A, 13-1B and 13-1C.

RELEVANT DV POP ISSUES, OBJECTIVES AND POLICIES – SURFACE WATER QUALITY

1.7 The cornerstone objectives and policies for surface water quality are found in Chapter 6 Water, and 13 Discharges to Land and Water.

1.8 The key issue for water quality is set out in 6-1 which observes that;

> *The quality of many rivers and lakes in the Region has declined to the point that ecological values are compromised and contact recreation such as swimming is considered unsafe. The main causes are listed and encompass nutrient enrichment from run-off and leaching from agricultural land and treated wastewater discharge and septic tanks, sediment from land erosion and agricultural run-off and stormwater discharge, and pathogens from agricultural and urban run-off, sewerage discharge, stock access to water bodies and agricultural and industrial waste discharge.*

1.9 The key objectives in relation to surface water are set out in 6-1 relating to Water Management Values, and 6-2 Water Quality. Both objectives refer to the management of surface water in relation to the water quality values set out in Schedule AB.

1.10 The relevant policies are;

- Policy 6-1 which relates to Water Management Zones and Values (referencing the division of catchments in the region into Water Management Zones and Water Management Sub-zones.
- Policy 6-2 relates to water quality targets (referencing Schedule D Water Quality Targets relating to the Schedule AB values).
- Policy 6-3 relates to ongoing compliance where water quality targets are met,
- Policy 6-4 relates to enhancement where water quality targets are not met.

- Policy 6-5 relates to the management of activities in areas where existing water quality is unknown.

- Policy 6-7 relates to land use activities affected ground water and surface water quality with (a) relating to nutrients, being;

  (i) Existing dairy farming land use activities must be regulated and specified Water Management Sub-zones to achieve nutrient management planning, the exclusion of dairy cattle from some surface water bodies and their beds and the provision of dairy cattle crossings over some rivers.

  (ia) New dairy farming use activities must be regulated throughout the regions so as not to exceed nitrogen leaching rates based on the natural capital of each LUC class of land, and to achieve nutrient management planning, the exclusion of dairy cattle from some surface water bodies and their beds and the provision of dairy cattle crossings over some rivers.

  (ii) For the purposes of (a) and (i) specified Water Management Sub-zones are those Sub-zones listed in Table 13.1 where, collectively, dairy farming land use activities are significant contributors to elevated nutrient levels and ground water or surface water.

- Sub-sections (b) of Policy 6-7 'Faecal Contamination', and (c) 'Sediment', relate to:

  - existing dairy farming land use activities in the Water Management Sub-zones or new conversions to dairy farming anywhere in the region being required to prevent dairy cattle access to some surface water bodies and their beds,

  - mitigating faecal contamination of surface water from other entry points, and

  - establishing programmes for implementing any required changes (all relating to faecal contamination); and

  - the promotion of voluntary management plans under the Council's sustainable land use initiative or Whanganui Catchment Strategy in relation to Water Management Sub-zones and accelerated soil erosion (all relating to sediment).

1.11 The relevant Chapter 13 objective and policies are found in Objective 13.1A; and policies 13-2 Consent decision-making for discharges to land; 13-2A Industry-based standards, 13-2C Management of dairy farming land uses.

1.12 The clear direction and thrust of the above objectives and policies for water quality is towards both existing and new dairy farm activities. The relevant rules are;

13-1 Existing dairy farming land use activities – Controlled Activity.

13-1A Existing diary farming land use activities not complying with Rule 13-1 – Restricted Discretionary.

13-1B New dairy farming land use activities – Controlled Activity.

13-1C New dairy farming land use activities not complying with Rule 13-1B – Restricted Discretionary Activity.

RELEVANT DV POP RULES – SURFACE WATER QUALITY

1.13 The Council Decision's version (DV POP) of Chapter 6 Water and Chapter 13 Discharges to Land and Water addresses the issue of nitrogen leaching by focusing on the management and regulation of dairy farming. This is achieved in a multi-faceted way. Existing dairy farms are targeted only in identified water management Sub-zones and in this respect are subject to either controlled or restriction discretionary assessment depending on their ability or not to meet specified conditions, standards and terms.

1.14 The cornerstone for existing dairy farms in the identified Water Management Sub-zones is the provision of a Nutrient Management Plan, along with a number of supplementary standards and conditions including the exclusion of dairy cattle from significant habitats and water bodies along with other discharge thresholds and requirements.

1.15 A number of matters of control are identified for the controlled activity with a key requirement being that of the implementation of "*reasonably practicable farm management practices for minimising nutrient leaching, faecal contamination and sediment losses from the land*"[1].

[1] Rule 13-1 Control reserved over (a); Decisions Version Proposed One Plan

1.16 The approach for new dairy farming land use activities is somewhat different. In the first instance, the control relates to proposed new dairy farms anywhere in the region (as opposed to the Water Management Sub-zones for existing dairy farms). The other significant difference is the requirement to show compliance with the " ... *cumulative nitrogen leaching maximum for the land used for dairy farming*"[2]. That maximum is set out in Table 13.2 and applies different levels of allowable nitrogen on the basis of kilograms per hectare per year and allocated according to Land Use Capability classifications I through to VIII.

1.17 The restricted discretionary status for existing and new dairy farming land use activities applies to those proposals that do not comply with one or more of the conditions set out for the equivalent controlled activity. The discretions and restrictions include:

- the preparation of a Nutrient Management Plan for the land,
- the implementation of reasonably practicable farm management practices for maintaining compliance with the cumulative nitrogen leaching maximum for the land,
- along with additional discretions relating to reasonably practicable farm management practices for minimising nutrient leaching, faecal contamination and sediment losses from the land and those relating to significant habitats, rivers etc.

ASSESSMENT OF THE POLICIES AND RULES APPLYING TO DAIRY FARMING

1.18 It is appropriate to more closely examine the information base and assumptions that justify and substantiate the policy and rule approach taken to dairy farming, specifically the;

1. specific targeting of dairy farming activities,
2. separation and different approaches to existing and new dairy farms,
3. rationale for regulating existing dairy farms only within specified Water Management Sub-zones and proposed new dairy farms across the region, and

[2] Rule 13-1B Conditions / Standards / Terms (b); Decisions Version Proposed One Plan

4. respective controlled and restricted activity regime for existing and proposed new dairy farms compliant with the standards and conditions; and existing and new dairy farms that are not compliant with one or more of those standards and conditions.

1.19 In this respect Paragraphs 8 (a) to (c) of Ms Barton's evidence succinctly summarises the relative policy approaches that were taken with the NV POP and DV POP. As she explains, the NV POP required resource consents for other farming activities including intensive sheep and beef, market gardening and cropping.

1.20 She further outlines both the need to address poor water quality in a number of catchments within the region and the targeted catchment approach undertaken for MV POP[3]. I note in particular her reference to the analysis made of the Manawatu above Hopelands[4] with a summary of different outcomes in (a) to (e) based on alternative scope and means of regulation. In very simple terms, the analysis indicates that;

- DV POP does not maintain or enhance water quality.
- If all dairy farming is regulated water quality will be improved.
- If all land use activities are regulated (as per MV POP) the best water quality is achieved (in 20 years).
- An N number of 24kg N/ha/year maintains water quality – water quality will improve below that number and will degrade above that number. All "do nothing" scenarios resulted in degraded water quality by 2030.

1.21 Ms Barton also covers the matter of natural capital and land use capability (LUC) in some depth.[5] In essence, under Table 13.2 a higher allowable N loading (30) is applied to Class I land compared to that applied to lower classes of land (e.g. Class VIII is allocated an N value of 18).

1.22 I consider that it is important that where it is concluded that an improvement in water quality is achieved by undertaking a certain action, the actual degree or extent of improvement needs to be clear. In regard to the assessed water quality improvements referred to for "Hopelands", I note Mr Tillman's assessment that;

[3] paras 47 to 55, Clare Barton Statement of Evidence, 14 February 2012
[4] Para 53, Clare Barton Statement of Evidence, 14 February 2012
[5] Paras 72 to 84, Clare Barton Statement of Evidence, 14 February 2012

> I therefore conclude that although implementation of the MV POP will result in small reductions in SIN loads (compared to the current load, or the loads forecast in the various "do nothing" scenarios), the resulting loads will still greatly exceed the target loads that will be necessary to achieve the desired water body values (as outlined by Ms McArthur and her s42A evidence). For reasons that I discuss later in my evidence, I therefore question whether applying "caps" on SIN loads in rivers (and then on individual farms) in the way proposed is the most effective way of achieving water quality aims in this region.[6]

1.23 Mr Tillman further notes that " ... *imposing such a nutrient cap may be appropriate where water quality that is already good and the desire is to maintain the status quo*". And that there *"... may be situations where there is a "critical" SIN load that represents a clear boundary between good and poor water quality*". In this respect he concludes that there may be scientific justification for such a cap (subject to financial and social implication assessment) but that *"... neither of these considerations applies in the current case*".[7]

1.24 Mr Edmeades reaches similar conclusions regarding the level of benefit of the proposed N loading management regime, noting that "*The reductions in the current N loadings required to achieve the water quality targets are about 50% on average across all the sub-catchments. This is much greater than the predicted beneficial changes likely to result from applying their best scenarios ...*".[8] To give colour to this, he observes that, in relation to Mr Roygard's evidence referring to scenarios 9-15;

> ... even with large changes to N loading from 33kg N/ha/yr down to 15kg N/ha/yr, the likely improvements in water quality would be small (about 18% being the difference between -12% to +6%) relative to the changes required (up to 50%) to achieve the water quality targets.[9]

1.25 This also goes to the fact that currently the regulatory regime is focused on dairy farming activities when it seems clear that there are a range of other farming activities (including sheep and beef, market gardening, viticulture etc) that, if there is to be a comprehensive nitrogen regulation approach, should logically be included. The NV POP included three other major farming activities but these were removed in the DV POP, with the Hearing Panel giving its reasons in Section 8.6.9.2 and 8.6.9.3 of its Decision Report.

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[6] Para 20 Russell Tillman Statement of Evidence, March 2012
[7] Para 21 Russell Tillman Statement of Evidence, March 2012
[8] Para 14 Douglas Edmeades Statement of Evidence, March 2012
[9] Para14, Douglas Edmeades Statement of Evidence, March 2012

1.26 The prime reason for the hearing panel at not including commercial vegetable growing related to the difficulty it saw in including such a *"... transient land use in a regulatory framework*". This is despite the Panel finding that

> The range of predicted leaching rates is therefore 10 to 58 kgN/ha/year, with most results being 18 kgN/ha/year or more. On that basis alone, it would seem appropriate to include commercial vegetable growing in rule 13-1.

1.27 The Panel further noted that "*We also have very little evidence about the ability of commercial vegetable growers to meet the limits in Rule 13-1 or the consequences for them*".

1.28 The Panel also considered the effects of non-intensive sheep and beef farms. Although it noted that in "rough terms", " ... *the leaching from dairy farms on a per hectare basis is therefore around twice that from non-intensive sheep and beef farms*", the Panel concluded that:

> The above figures result in roughly equal contributions of nitrogen from intensive farming land use as from non-intensive sheep and beef farming. In other words, half of the nitrogen loading problem is derived from non-intensive sheep and beef farms. These non-intensive sheep and beef farms are excluded from Rule 13-1 as notified. We do not find that to be appropriate. Unfortunately, there is no scope within submissions to include non-intensive sheep and beef farms within Rule 13-1.

The panel recommended that the Council should consider that matter further upon release of its decision.

1.29 In my view, the omission of regulation in the DV POP applying to these other intensive and non-intensive nitrogen leaching farming activities is a major shortcoming in terms of providing an integrated and comprehensive approach to nitrogen leaching.

1.30 With only dairy farming being regulated, there is a higher likliehood that the distortions may or will occur in the farming sector arising simply from the farmers choosing an easy or hard road in regulatory terms.

1.31 I consider that all of the significant nitrogen leaching generators should be on the same playing field in that regard. This in itself provides some support for a more "light handed" regulatory approach for dairy farming, certainly at this stage of the evolving science. In the context of the apparently marginal benefits the proposed regulations will have for SIN loads, I consider that the risk of adverse effects with a high potential impact arising from a permitted activity status for many dairy farming activities is likely to be low.

THE LAND USE CAPABILITY CLASSIFICATION APPROACH

1.32 I consider that a key question is how effective is the LUC methodology in achieving the key objectives and environmental outcomes sought for water quality? In this respect I note Mr Edmeades' conclusion that;

> The use of LUC as a basis for determining and managing nitrate leaching from dairy farms (both new and existing) is fatally flawed and, in my opinion, it is most unfortunate that this concept has been introduced into these hearings"[10].

1.33 It is difficult to see the rationale for directing dairy farming (and potentially other nitrogen leaching farming activities in the future) to higher class land when dairy farming on lower class land may also be capable of operating under an adopted nitrogen cap. I note in this respect Mr Edmeades' assessment of the wide range of categories and components that dictate the amount of leaching into the drainage water of soil, and not just stocking rates[11].

1.34 I also question why activities on land of higher class are potentially incentivised to maximise the N leaching available under this regime (there is no incentive to reduce N loadings). This approach also does not enable dairy farming activities that may be equally or more suitable on land of lower class (applying the categories and components Mr Edmeades has identified as being important) but which may generate higher cumulative N leaching than that allocated to such land in Table 13.2.

1.35 In this respect, a key question is; why should there not be just one nitrogen cap applying to all new farming activities in a catchment, or the region? The rationale for the approach being that the gross nitrogen discharge across the catchment or sub-catchment is met whilst existing legitimately established and operating farming activities have an appropriate degree of protection.

1.36 If it is easier to achieve that limit on higher class land, then farmers can be expected to direct more intensive activities to that area. It is conceptually superior than having a number of N leaching caps applying to different land within the same catchment.

1.37 Other lower leaching farming activities also receive protection and do not have to reduce the nitrogen levels but the land has a lower nitrogen leaching threshold which means that conversion to higher nitrogen leaching activities will be constrained.

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[10] para 18, Douglas Edmeades Statement of Evidence, March 2012
[11] para 25 to 27, Douglas Edmeades Statement of Evidence, March 2012

1.38 Hand in hand with this approach is the need to allow existing dairy farms to continue to operate under a reasonable N threshold that largely recognises their existing activities but is set at such level that the worst performers are required to improve. (This may also ultimately mean that other currently non-dairy or intensive farming land may have a lower threshold applied, once the necessary catchment analysis is completed and a more inclusive farming activity regime included in the Plan).

1.39 For example, if the appropriate N level is (say) 22 on an averaging basis across a catchment, but a high proportion of established dairy farms can only reasonably achieve (say) 25, the allowable cap for non-dairy farm land could be reduced accordingly. Although this raises some equity issues I do not consider this approach is necessarily unreasonable.

1.40 Such imbalances or differences in development and activity 'rights' are commonplace in Plans - for example, adjacent commercial and residentially; or rural and rural residentially zoned land typically have quite different land values on a per hectare basis (with obvious "winners" and "losers" in a financial sense) but these are largely accepted, being frequently historically based and accepted as part of the "existing " effects environment.

1.41 Mr Edmeades offers a similar or complementary conceptual approach to the management of nitrogen loadings[12] that appears a more robust approach than that taken in terms of achieving the Plan's objectives. He proposes a water management catchment approach with the desired water quality standards for each sub-zone and the soluble inorganic nitrogen (SIN) loading for the catchment determined; and applies those standards and quantities back to specific farm management practices.

1.42 In my view this also allows the opportunity for farming land uses such as intensive and non-intensive sheep and beef farming, cropping, and market gardening, which may have more than minor or significant nitrogen generating potential to be managed under the same or similar methodology.

ACTIVITY STATUS AND "REASONABLY PRACTICABLE"

1.43 Federated Farmers and Ravensdown have sought that the application status for existing dairy farms within the Water Management Sub-zones should be permitted activities. This position is taken on the basis of the rules having an accepted maximum nitrogen leaching threshold numeric; being a maximum

[12] para 36 – 52; Douglas Edmeades Statement of Evidence, March 2012

value under which a dairy farm is able to operate.

1.44 I consider that having regard to the matters I have discussed above:

(a) existing dairy farms could proceed as a permitted activity subject to specified standards and controls, and the requirement to prepare and have an NMP available for inspection, noting that the risk of adverse effects with a high potential impact arising from a permitted activity status for many dairy farming activities is likely to be low.

(b) a similar approach could apply also to proposed new dairy farms subject to the preparation of an NMP which clearly indicates the ability to comply with an adopted nitrogen threshold.

(c) if an existing or proposed new dairy farm is unable to meet a specified lower nitrogen threshold (X), then it should be assessed as a controlled activity up to an higher maximum nitrogen reaching cap (Y), above which any dairy farm proposal is a non-complying activity.

(d) an identical approach should and also be applied to other farming activities, necessarily by way of a future plan change once the necessary technical analysis for other intensive farming uses has been undertaken.

1.45 On the basis of this, I do not favour a requirement for a "reasonably practicable farm management practices" at permitted activity level. Despite best efforts to define this phrase, I do not consider that it has the necessary certainty or is free from discretionary interpretation to enable it to be included as a standard or condition. I am however comfortable with its application as a matter for control for a controlled activity but with a well considered definition of the term of which at least two options have been circulated as part of these proceedings; one from Ms Marr (in her biodiversity evidence) and the other from Mr Tillman in his evidence for this hearing.

SUMMARY AND CONCLUSIONS

1.46 Restrictions on nitrogen discharge should be applied because there is a clear and demonstrable issue. There is a technical consensus that dairy farming generates more nitrogen leaching than other activities on a per hectare basis and represents the greatest opportunity for making reductions to N loading. As such it should still be regulated in order to both maintain and achieved improvements where possible for existing and future new dairy farm activities.

1.47 It is my view that the current rule regime both in the DV POP and the MV

POP (Ms Barton) is technically flawed in part.

1.48 The rules impact existing dairy farms to the extent that they may be required to invoke quite significant changes to their farming operations, and (in the case of Ms Barton's proposals) become subject in every case to a resource consenting process. This is an inequitable and unnecessary approach for three key reasons;

(i) the benefits that are obtained through compliance with the proposed nitrogen discharge levels are relatively limited, being both within the margin of error of the OVERSEER Model, and - even in the best case situation - still being substantially below the target water quality,

(ii) the risk of adverse effects with a high potential impact arising from a permitted activity status for many nitrogen leaching farming activities is likely to be low based on the methodologies proposed, and

(iii) dairy farming is only one of a range of farming activities (including those that may come in the future) that leach nitrogen, but is the only one that is currently regulated by the One Plan.

1.49 At the same time, the Council has indicated[13] that it proposes to address farming activities that generate a significant nitrogen discharge by introducing a plan change which similarly controls those activities. This should include those activities which are of seasonal or biennial / triennial nature. The application of a generic N leaching threshold across a catchment may achieve this, with such activities also required to produce an a nutrient management plan and NMP plans to allow for a seasonal or (say) biennial / triennial basis.

1.50 I consider that the approach I have outlined in paragraph 1.44 for existing and proposed new dairy farms is an effective and efficient method of achieving the key water quality objectives.

1.51 I have sighted the draft rule prepared by Mr Hansen for Ravensdown and consider that this provides the basis for an acceptable rule regime.

1.52 I have also considered the existing DV POP objectives and policies and consider that some amendment of these is necessary as a consequence of the alternative methodology and rules I have proposed. This involves

(a) Policy 6-7: remove specific references to natural capital and LUCs.

(b) Policy 13-2C: remove specific references to natural capital and LUCs.

[13] paras 158 to 159, Clare Barton Statement of Evidence, 14 February 2012

1.53 I have considered the changes to policies proposed by Ms Barton and conclude that:

(a) Policy 6-7: not accepting recommended additions to (a) (i) (A) and (B).

(b) Proposed new Policy 6-7A: not accepting references to cumulative nitrogen leaching maximums by Land Use Capability class contained in Table 13.2.

Shane Hartley

2 April 2012