BEFORE THE ENVIRONMENT COURT

In the matter of	the Resource Management Act 1991 ("the Act")
And in the matter of	the Proposed One Plan for the Manawatu-Wanganui Region
Between	WELLINGTON FISH & GAME
	ENV-2010-WLG-000157
And	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
	Appellants
And	MANAWATU-WANGANUI REGIONAL COUNCIL
	Respondent

STATEMENT OF REBUTTAL EVIDENCE OF DR ALISON DEWES ON BEHALF OF WELLINGTON FISH & GAME

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1. INTRODUCTION

Qualifications and experience

1.1 My full name is Dr Alison Mary Dewes. A full description of my qualifications and experience was provided in my statement of evidence dated March 2012, which was filed with the Court and circulated to the parties.

Expert Witness Code of Conduct

1.2 I have been provided with a copy of the Code of Conduct for Expert Witnesses contained in the Environment Court's Consolidated Practice Note 2011. I have read and agree to comply with that Code. This evidence is within my area of expertise, except where I state that I am relying upon the specified evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Purpose and scope of evidence

1.3 The purpose of this evidence is to respond to matters raised in the evidence of the following persons:

(a) Mr Shane Hartley for Federated Farmers.

(b) Mr Russell Tillman for Federated Farmers.

(c) Dr Douglas Edmeades for Federated Farmers.

(d) Mr Andrew Hoggard for Federated Farmers.

(e) Mr Christopher Hansen for Ravensdown.

(f) Dr Anthony Roberts for Ravensdown.

(g) Dr Stewart Ledgard for Fonterra.

(h) Mr Gerard Willis for Fonterra.

2. FEDERATED FARMERS

Russ Tillman

2.1 In point 30 on page 8 of Mr Tillman's evidence in chief he states that "Relying solely on natural capital to allocate the SIN cap will result in an economically inefficient outcome." I am unclear what measure of economic inefficiency Mr Tillman is referring to here in this point.

2.2 Allocating N emissions on the basis of natural capital, although not perfect, is the best solution I have seen to date as it represents an allocation based on the lands productive capability, and subsequent resilience, which is intrinsically linked to its asset values (see the evidence in chief of Loveridge and Day where there is further elaboration on how asset and economic values are related to the Land Classification System).

2.3 The inherent productive capability is also higher on the better LUCs. Typically, they are more expensive to buy, and also do not require as much development to realise the same production. The poorer LUC land (LUCs 5 to 8) is generally proportionally lower in terms of dollar value, but also these LUC's require more to be spent on them to realise the productive capability. (They require higher fixed costs to realise productive outputs). It may be that to mitigate the environmental risks, as well as to realise the production posed by the LUC 5 to 8 land, that there is likely to be a higher long term fixed cost in order to manage risk and guarantee consistent returns.

2.4 In point 36 on page 9 of his evidence in chief, Mr Tillman refers to a minority of farmers, usually through no fault of their own, who have to incur a significant financial penalty in order to comply. I disagree with this as WFG supports the broadening of an alternative policy gateway for those farmers who can demonstrate that they would have significant difficulty in complying with the proposed NVPOP year 1 + year 20 targets, especially if they have >50% land LUC 4-8 + >1500 mm rainfall. I refer to my evidence in chief (point 8.11) where I state the following:

> *"As shown by the test FARMS studies, farms with a high proportion of their land as class IV to VIII and under high rainfall >1500mm will have difficulty meeting LUC leaching Limits. This has been discussed further in the technical evidence of Mr Taylor (2012). The establishment of a policy gateway has been proposed by Ms Barton in her planning evidence (2012). I would endorse that these cases are treated separately via an alternative policy gateway.*

2.5 This assessment, however, needs more careful analysis. I firmly believe that farm system modelling with full economic analysis for alternative opportunities and mitigations on these more difficult land classes, that have to reduce N leaching by >30%, should have been done but was not. In that respect, my evidence in chief addresses the merits of full farm system analysis and states the following:

> *"7.1 As mentioned above, increases in productivity (and profitability) do not always result in increased N leaching and, on the flip side, decreasing N leaching from farming does not always result in lowered profitability. This is especially so if the farmer undergoes a process of self-analysis, for profitability and efficiency, and has farm system modelling undertaken.*
>
> *7.2 In most cases, when one is faced with assessing a farm system for lowering nitrogenous losses, a strategy can be designed to achieve more profit, productivity and resilience without long term adverse effects to the business."*

Shane Hartley

2.6 Based on paragraphs 144 and 145 of Mr Hartley's evidence in chief, I understand that the Federated Farmers position is to:

(a) Set X (a nitrogen leaching maximum for a sector of the dairying community which they have not specified), and if dairy farmers (existing or new) leach X or less their dairy farming activities are permitted activities.

(b) Require dairy farmers (existing or new) who leach between X and Y (also not specified but higher than X) to obtain controlled activity consents to undertake dairy farming.

(c) Require dairy farmers who leach more than Y to obtain non-complying activity consents to undertake dairy farming.

(d) Only require reasonably practicable farm management practices to reduce nitrogen leaching for controlled activity dairy farming (i.e. dairy farming that leaches between X and Y).

2.7 There are some serious deficiencies in the evidence in support of the "regime that is proposed" by Federated Farmers. They are as follows:

(a) X has not been specified;

(b) Y has not been specified;

(c) The percentage of dairy farms that would be at or below X has not been specified;

(d) The percentage of dairy farms that would be between X and Y has not been specified;

(e) The percentage of dairy farms that would be above Y has not been specified; and

(f) Mr Hartley has only proposed that reasonably practicable farm management practices would be required by dairy farmers who leach between X and Y.

2.8 I do not consider that what is proposed by Federated Farmers will make progress towards reducing nitrogen leaching if the X and Y values are set too high. Given that Federated Farmers has not specified what the X and Y values should be, it is very difficult to comment further on the potential effect of the regime on nitrogen leaching.

2.9 I note that what is proposed by Federated Farmers does not require the implementation of any mitigation practices to reduce N leaching for permitted activity farming. There are a range of farm systems and a range of mitigations that can be used to reduce N leaching. I addressed this in my evidence in chief and remain of the view that farms that can implement mitigation practices should do so in order to reduce N leaching.

2.10 In that respect, I note that Mr Tillman states in point 51 of his evidence in chief that".…….Many of these farmers could reduce leaching of SIN to some extent with little or no cost, and in some instances carefully formulated NMP's could even increase farm profitability……." This statement in Mr Tillman's evidence does not appear to support Federated Farmers' position (as set out at paragraph 2.7 above) and nor does the statement in paragraph 38 of his evidence in chief that:

> *"… it is my opinion that an approach similar to that proposed in the DVPOP of requiring all farmers to implement reasonably practicable farm management practices for minimising nutrient leaching, faecal contamination, and sediment losses from land is most appropriate and should apply to both existing and new dairy farms."*

2.11 Mr Hartley is clearly not proposing the implementation of reasonably practicable farm management practices to minimise nutrient leaching on all existing and new dairy

farms – permitted activity dairy farms are excluded. Depending on the values Federated Farmers assigns to X and Y, this could be the majority of dairy farms in the Region.

Dr Douglas Edmeades

2.12 At point 9.15 of his evidence in chief, Dr Edmeades points to the scenarios modelled by Dr Roygard. He notes that in order to reduce the N load by 50% there is little that can be done. I would concur with him that a 50% reduction is a tall task. However, my understanding is that none of the regimes proposed by any of the appellants require a 50% reduction. As a result, I fail to see what point Dr Edmeades is trying to make by using a 50% reduction scenario.

2.13 In Point 18 of his evidence in chief, Dr Edmeades states that "the LUC basis is fatally flawed" and in point 19 he claims it is not equitable, traps us in a 1980s time warp, and is not logical.

2.14 I do not agree with these claims as farmers' acquire land for its inherent productive capability and long term resilience and that productive capability and resilience directly relate to the economic value of the land. I therefore consider that using the LUC system is an equitable approach.

2.15 In that respect I note that in point 5.1 of Mr Loveridge's evidence in chief he states that:

> *"It is clear to the writer, that soil composition (which is inextricably linked with Land Use Classification) is one of the most important components in establishing rural land values for individual farm properties. While other factors such as contour, location and degree of development are important drivers in any farms market worth, there is little doubt to me that the more fertile soils best differentiates the most valuable land from the weaker performing and less valuable farm holdings."*

2.16 Dr. Edmeades points to a suite of mitigations and practises that have been utilised within a range of systems over the past 30 years that are used in order to overcome the constraints of the natural capacity of the land in order to achieve higher levels of production. However, this comes at an additional cost, to that of the land. I would refer him to the diagram in the evidence in chief of Mr Day (Fig 6, page 30) and Dr Mackay, which illustrate this well. In that regard, Mr Day states the following in his evidence in chief:

"The LUC allocation framework will ensure that the greatest concentration of nutrient loss in a catchment is occurring on the best land, where the most production and hence economic output is achievable at the least environmental cost to the community. (Fig 6 Mackay Sect 2a Undated) The subtlety of this diagram is that the soil with the highest natural capital produces more per unit of emission so needs to be fully utilised to maximise the community's income from an agreed level of emission. (Nitrogen Loss) In other words, the LUC allocation framework coupled with trading would allow the best land to be used to its greatest potential without access to N loss rights creating an unnecessary intensification limitation."

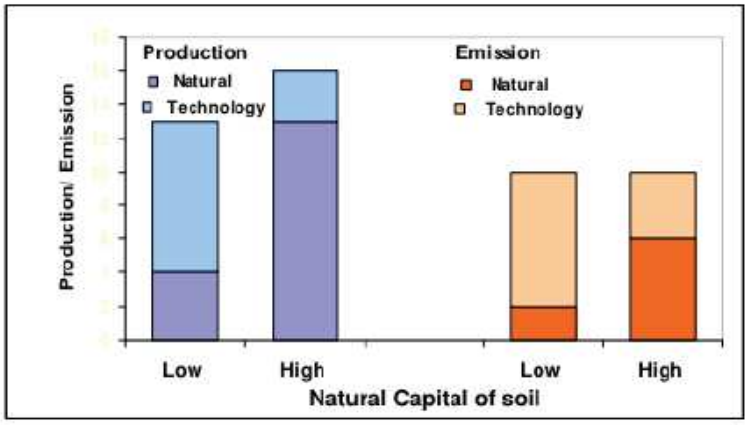

Figure 6. Production and emissions from a well managed legume pasture top dressed with P and sulphur fertiliser, before the introduction of production technologies (eg. irrigation) on soils of low and high natural capital (Ballantine & Mackay, 2008).

2.17 The capital costs of technology in order to achieve both production, and to manage environmental risks, are higher on the soils that have lower inherent natural capital. (LUC 5-8)

2.18 In points 30 and 31 of Dr Edmeades evidence in chief, he points out that there are many improvements that farmers utilise in order to raise productivity. He points out that the farmers on the poorer classes of land now are able to farm it once they have overcome some of the limitations of this land with capital investment. He also points out that in some cases farmers that have a significant component of their farms as the poorer LUC's will not be able to be farmed under the proposed LUC approach. The evidence of Lachie Grant, who proposes reclassification of some of these previously poorer LUC's, addresses this issue as does the WFG and Horizons

evidence, where a broadening of the policy gateway is proposed for farms with more challenging circumstances.

2.19 In point 31 of his evidence in chief, Dr Edmeades illustrates that the best class land can actually intensify:

> *"The farmer on the best class land, would have a generous nitrate leaching cap…. But with current technologies and farm management practises, it could well be possible to reduce the actual nitrate loading to below the limit required by the LUC thereby improving. The LUC based policy would however not encourage such activity."*

2.20 In effect, Dr. Edmeades is acknowledging here that the best land has the largest amount of headroom, which in fact means that the allocation of leaching potential is related to the productive capability of the land. I therefore consider that use of LUC is equitable.

2.21 WFG, the MOC and Mr Day also propose a LUC sinking lid approach over time, which would require N leaching to reduce over a 20 year period. The regime proposed by these parties aims to protect water quality in the short term and enhance it into the future while giving farmers time to adapt, and also allow for further innovation.

2.22 In Point 35 to 40 of Dr Edmeades evidence in chief, he eludes to a "Science based approach……..based on benchmarked industry values, and of setting WMZ caps on SIN loads." He then alludes to a "Community determined WQ standard. "

2.23 I am unclear on how a community will be identified in order to determine water quality outcomes given the complexities of a river system. I agree that this approach may have some merit in the case of a lake, where the effects of a community on the lake are directly attributable to that particular body of water.

2.24 However, with a river system, where the land based activities have both spatial and temporal effects on the entire water body, I am unclear as to how one particular community (i.e. at the headwaters of a river) would manage the effects that would become apparent in another part of the river (i.e. – mid river, or at the mouth of the river).

2.25 The goals and needs of each community in each sub catchment (as per Dr Edmeades point 55 in his evidence in chief) may be entirely different, and I am

unclear as to how one community would take into consideration the goals and needs of another community.

Andrew Hoggard

2.26 In point 51 of his evidence in chief, Mr Hoggard disagrees with the LUC approach because he deems it to be inequitable. However, if there is to be a constraint on total diffuse N emissions from a catchment, I consider that use of LUC with a sinking lid as proposed by WFG is an equitable approach. I agree with what Mr Hoggard says that many farmers can be more efficient with their practises. This would result in reductions in N leaching.

2.27 WFGC, the MOC and Mr Day recognise that the LUC approach is a proxy for allocation of those nutrient emissions in a manner that relates to the inherent capability of the land.

2.28 The regime proposed by Federated Farmers:

(a) Is not more equitable and does not relate to the land values prior to this environmental regulation discussion being started.

(b) Probably will not retard the decline of water quality and, in the longer term, improve water quality.

(c) Does not relate to the inherent economic value of the land - in terms of its productive capacity, location, and contour – and nor does it relate to the inherent risks in different land groups,

2.29 In point 53 of his evidence in chief, Mr Hoggard states the following:

> *"Finally for those farms that don't meet any of the above criteria, then the farms NMP will contain a list of suggested actions, I would then expect the farmer to have a discussion with the council on which of those practises are reasonably practicable for them to do, and the reasons why or why not."*

2.30 It is impossible to determine how Mr Hoggard's evidence in chief relates to the regime proposed by Mr Hartley. That is because the criteria addressed in Mr Hoggard's evidence in chief are not addressed in Mr Hartley's evidence in chief so Mr Hartley does not appear to have drawn on Mr Hoggard's evidence in chief in outlining Federated Farmers' proposed regime.

3. **RAVENSDOWN**

3.1 I have read the evidence and the proposed regime outlined in the evidence of Mr Hansen on behalf of Ravensdown.

3.2 Regarding this proposed regime, I make the following points.

3.3 The proposal to utilise a permitted activity rule for dairy farms, which related to a benchmarking system for encouraging behaviour change, may be effective for some farmers but not all. The permitted activity approach, through not engaging with all farms and land uses, allows more opportunity for perverse behaviours by those that may choose to cheat the system. It is these free riders, in my opinion, that pose the greatest threat to the agricultural industry as a whole.

3.4 The notion of using a benchmarking figure that appears to bear no relationship to actual water quality is flawed in my view.

3.5 In that respect, Dr Roygard's modelling scenarios, undertaken and presented in table 2 of his evidence in chief, indicated that if dairying was the only land use activity to be regulated, then the benchmark across the whole of the industry would have to be around 18 kg N per ha per annum in order to achieve some improvement in water quality. Ravensdown has not identified what figures it intends to use for X and Y but, given the actual N leaching in the catchment, the figures that will be proposed by Ravensdown are likely to be much higher than 18 kg N per ha per annum.

3.6 This grandparenting type approach could also be deemed to be inequitable, in that it does not take into account the inherent biophysical nature of the farms in order to allocate nitrogen loss emissions.

3.7 The proposed regime put forward by Ravensdown cannot be extrapolated to other land uses, such as sheep and beef, cropping or horticulture, while the regime proposed by WFG, MOC and Day is applicable to all land uses.

3.8 Nutrient budgets have been required by a range of regional councils across the country as part of permitted activity status for fertiliser application. In the Waikato, for example, if a farmer is using more than 60 units of nitrogen per ha per annum then the business is required to have a nutrient budget in place.(refer Appendix 1) In my own experience, in most cases, farmers have not integrated this information into their businesses in order to attempt to become more nutrient efficient and, thereby, reduce nitrogen leaching. What this demonstrates to me is that farmers operating under a

permitted activity regime will not necessarily reduce their leaching even if it is in their best interests and the best interests of the environment to do so. The permitted activity rule attached as Appendix 1 requires that a nutrient management plan is to be prepared in certain circumstances, and that nutrient management plan has to include practices to reduce nutrient and sediment losses from a property to avoid, remedy, or mitigate adverse effects on the environment. In my experience, many farmers in the Waikato Region do not take heed of these requirements and they are not enforced by the Waikato Regional Council. In my view, this illustrates some of the weaknesses of a permitted activity regime for farming activities.

3.9 However, I am of the opinion, that without clear and detailed rules or guidelines as to what is expected in terms of current nitrogen leaching (targets) now and in the future, along with a very clear requirement of what is expected for best management practises covering areas such as reduced risk of phosphate loss, pathogen loss and sediment loss, that a regime of permitted activity for N loss will continue to result in many farms failing to address these externalities.

3.10 I acknowledge there has been some excellent work done by Agresearch with a group of farmers around Lake Rerewhakaaitu in the Central Plateau using nutrient management plans over a decade. (Longhurst, 2012) However, this case applies to a lake, where the community's activities have a direct link with the receiving water body they are focussed on. The challenge we are faced with in the Manawatu Region is that we have to manage land uses throughout a river catchment along with the inherent spatial and temporal complexities that arise from this.

Dr Anthony Roberts

3.11 In point 2.2 of his evidence in chief, Dr Roberts asserts that the LUC system was not designed for the purpose of setting nutrient limits but to establish a classification system for creating an inventory of the rural land resource. On this point I agree, however, the LUC system is a reflection of the inherent capability of the land in its bare state, pre improvement and pre any discussion about regulation as a result of inherent environmental risk. It reflects both natural capability and natural weaknesses, i.e.- risks. On that basis, it could be deemed as being related to the inherent economic value of the land, and reflective of the inherent nature of the lands risks. Although the LUC system is not perfect, it is a suitable proxy for allocation of nutrient emission allowances.

3.12 The LUC approach, also by default, takes into account the risks associated with the inherent land capability: it relates generally to the risk of loss of Nitrogen from land, and the related land use, to that of the receiving environment.

3.13 Through this approach, where land is classified according to its inherent lack of versatility, or risk, the LUC approach also captures the risk of loss of pathogens, sediment and phosphate as well: three of the other key externalities from agriculture that impact on receiving water bodies and which the POP seeks to manage.

3.14 For example, the risk of pathogen loss is greater on poorer LUC, higher slope land, or unduly wet land:

> *"Soil and landscape features such as sloping land, land with artificial drainage and land with either impeded drainage or low surface infiltration rates typically display a high risk of preferential or overland flow of land-applied FDE. Soil types with well-drained, fine structured soils typically exhibit matrix flow characteristics and represent a relatively low risk of direct losses of contaminants due to FDE application" (Houlbrooke)*

3.15 I also note that while the LUC system is not perfect, due to some slight difficulties with its application, it is not dissimilar to most other technologies that are in widespread use by applied scientists and policy makers. Many other technologies that are presently in use also have degrees of imperfection that require special management. The OVERSEER model itself is an example of this. The model is becoming more accurate as it is continually updated. Nevertheless, it is not perfect.

4. FONTERRA

Dr Stewart Ledgard

4.1 In points 12 to 16 of Dr Ledgard's evidence in chief, there is an excellent summary of the strengths and weaknesses of the LUC based approach in relation to the risk of loss of N, P, sediment and pathogens. On this basis, I would challenge the argument that the LUC framework proposed is unsuitable. In my opinion, it is the most robust regime put forward at present if we are to manage the three key externalities (nutrients, sediment and pathogens) from agriculture in a broader context.

4.2 I agree that water quality protection and subsequent enhancement will not result from just management of nitrogen emissions from dairying alone, as was proposed in the original DV POP. The LUC is proposed as a proxy for allocation of N emissions,

however, by default, it also has the advantage that the overall intensity of agricultural pursuits on land that is at high risk from sediment, pathogen and phosphate run off may also be constrained in the future, and forced to mitigate the externalities resulting from intensification.

4.3 Dr Ledgard also states in point 40 of his evidence in chief that:

> *"The primary physical factors in the LUC method are likely to align reasonable well to the risk of loss of sediments and P via surface runoff to waterways, which is important for the wider water quality context. Indeed the P loss model in OVERSEER has land slope and soil characteristics related to erosion loss risk as key drivers."*

4.4 As I noted in my paragraph 4.2 above, use of LUC acts as a proxy for control of sediment and P and this is one of the advantages of using the LUC approach.

Expert conferencing – mitigation practices

4.5 In the Expert Conferencing of Agricultural Specialists, there was an appendix circulated that summarised many of the risks to the receiving environment from Agriculture. However, there are details within the appendix that may need amendment. These are the following:

(a) Principal Practise - In my opinion, the term NMP is satisfactory where the net N reduction required is 0-30%. However, it would be more appropriate to signal that a Whole Farm Management Plan is necessary if the degree of N loss is >30%. It is my preference that we put more detail around what is involved in both a NMP and a WFP if this is to become policy. I have referred to this in my evidence in chief.

(b) Reduce Stocking Rate - This is regarded as High for NFPS. In my experience, this is overstated, and is closer to medium in effectiveness. This is a result of alternative mitigations now in place in order to allow reductions in N leaching. I refer to my evidence in chief in Table 2, Page 37.

(c) Dietary Manipulation - This option is described as being medium as having comparative effectiveness. Although I largely agree with this, where farms are more intensive, the integration of low protein feeds as a significant proportion of the diet can give medium - high comparative effectiveness.

(d) Farm Dairy Effluent Management - In my opinion, the avoidance of direct runoff of effluent from tracks, hillsides, tracks, culverts and bridges is of medium to high effectiveness.

Gerard Willis

4.6 Based on paragraphs 141.1, 141.2, and 154 of Mr Willis evidence in chief, it appears that the regime proposed by Fonterra is as follows:

(a) Existing dairy farms in specified catchments leaching at or below 27 kg N ha year would require consents as controlled activities and would be grandparented at their existing leaching rates;

(b) Existing dairy farms in specified catchments leaching at or below 27 kg N ha year would not be required to reduce their nitrogen leaching and could, in fact, increase it if they apply for, and are granted, a restricted discretionary activity consent;

(c) Existing dairy farms in specified catchments leaching in excess of 27 kg N ha year would require consents as controlled activities and would be grandparented at their existing leaching rate;

(d) Existing dairy farms in specified catchments leaching in excess of 27 kg N ha year would be required to adopt reasonably practicable farm management practices to reduce their leaching but there is no specified amount by which leaching would have to be reduced; and

(e) New dairy farms in all catchments would have to comply with the year 1 LUC figures per the DVPOP.

4.7 As Fonterra has not undertaken any scenario modelling of this proposed regime it is very difficult to say whether it would result in more or less leaching from existing and new dairy farms. The 27 kg N ha year trigger (according to Mr Willis at paragraph 154 of his evidence in chief) represents 75% of farms (i.e. 75% of farms leach less than 27 kg N ha year). So Fonterra's proposed regime would allow 75% of existing dairy farms to continue leaching N at historical levels and not require any mitigation practices to reduce N leaching even if such mitigation practices could be implemented at minimal or no cost or even increased profit for the farming operation. In addition to that, Fonterra's regime provides for those 75% of farms to increase

their historical N leaching if they are granted restricted discretionary activity consents to increase their leaching. Given that, and also that there is no specified reduction target for the 25% of farms that are leaching the most, it appears to be possible that Fonterra's regime would actually result in an increase in N leaching.

4.8 Mr Willis, in paragraph 42 of his evidence in chief points out that:

> *"The fact that only dairy farming is caught by Rule 13-1 raises both efficacy and equity issues. Clearly, enhancing water quality where it is degraded is much more difficult if only some of the main pressures are to be addressed in any substantive way. Furthermore, if the burden of enhancing water quality falls only on a subset of contributing uses, those contributors can feel rightly aggrieved, as there will be "free-riders" (i.e. resource users gaining the benefit of a continued "licence to operate" but not contributing to the cost)…"*

4.9 This is supported by my own views and those of WFG <u>that there needs to be a catchment wide approach</u> which is equitable and clear in its direction for the long term in order that planning can be implemented by the farmers concerned. In that regard, paragraphs 5.37 and 5.38 of my evidence in chief stated the following:

> *"5.37 It is my opinion, the externalities from unregulated agricultural land uses will contribute to an increased load of nutrients in the sensitive receiving catchments, along with other externalities of concern (stock damage to riparian zones and stream banks, sediment and pathogen contamination of water bodies). Failure to manage all land uses which contribute to degradation of freshwater resources could significantly undermine the proposed management framework of the One Plan and the goals sought in regards to the protection of the regions water bodies.*
>
> *5.38 I recommend the re inclusion of Intensive sheep and beef and cropping into the management framework. In regards to cropping, I consider that cropping as a component of sheep and beef farming should also be included in this management framework. I recommend that extensive sheep and beef farming be monitored and if it is seen to be contributing to the continued degradation of the regions water bodies that it is brought into a regulatory framework subject to best management standards and leaching limits."*

4.10 The relief sought by WFG, DOC, and Andrew Day (when considered collectively) would result in all of the significant nitrogen leaching land uses in the degraded catchments ultimately being included in any proposed approach in order that all land owners share the responsibility for their externalities in an equitable manner.

Alison Dewes
April 2012

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APPENDIX 1

PERMITTED ACTIVITY RULE FOR FERTILISER APPLICATION IN THE WAIKATO REGIONAL PLAN