

**IN THE MATTER**

of the Resource Management Act 1991

**AND**

**SOUTHLAND PROPOSED WATER AND LAND PLAN**

**BETWEEN**

DairyNZ Limited

**AND**

Southland Regional Council (Environment  
Southland)

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**STATEMENT OF EVIDENCE OF CHARLOTTE WRIGHT  
FOR DAIRYNZ LIMITED**

**15 May 2017**

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## 1. INTRODUCTION



1.1 My full name is Charlotte Wright.

1.2 I hold a Bachelor of Science (Geography and Geology) from Auckland University and a Master of Science in Resource Management (Hons.) from Lincoln University. I have 13 years' experience working for in various resource management-related roles for regional government, private consultancies and DairyNZ. This experience includes working with RMA processes as a Consents Planner, a Compliance Officer and as a Policy Advisor for the dairy industry. My current role is Policy Advisor at DairyNZ. I am providing evidence as a DairyNZ employee to support the DairyNZ submission. I am not offering evidence as an expert witness. However, given my work for DairyNZ and previous employers, I have relevant experience in policy and planning matters.

### **Background**

1.3 I am familiar with the Proposed Southland Water and Land Plan (referred to throughout as the pSWLP), though have not had any direct involvement in the development of the pSWLP, except through some early pre-plan discussions. I am familiar with the content of the Section 42A Officers' report.

1.4 In preparing this evidence I note that although this is a Council hearing I have read the Expert Witness Code of Conduct set out in the Environment Court Practise Note 2014.

1.5 The purpose of this evidence is to provide the Hearing Commissioners with an outline of the outcome sought by DairyNZ and the key aspects of the submission we would like to focus on, and draw together evidence provided by;

- DairyNZ's Southland Regional Manager Mr Richard Kyte, who sets out the context of DairyNZ and farmer effort to manage environmental footprint on dairy farms. He outlines current initiatives in Southland and Industry support for dairy farmers to reach Good Management Practice' (GMP), including the establishment of the Dairy Environment Leaders' Group and catchment groups.

- DairyNZ's Water Quality specialist Mr Justin Kitto, who provides information on water quality and scientific justification for focusing on a tailored approach to managing overland flow of diffuse contaminants.

## 2. SCOPE OF EVIDENCE

### 2.1 My evidence addresses the following matters:

- (a) A summary of the outcome sought in the DairyNZ Submission on the pSWLP,
- (b) Matters covered in the Environment Southland Council Officers' s42A report (referred to throughout as the s42A report), that recommend acceptance of the DairyNZ submission point and where the matter requires clarification or further reasons for how this would improve the pSWLP. My focus is on the aspects of the s42A report that have recommended that the DairyNZ submission point be declined and where DairyNZ wishes to pursue the matter. I have provided a summary of the DairyNZ submission points and the s42A response in Attachment 1 of my evidence.
- (c) The general topics that DairyNZ covers in evidence are as follows:
  - i) Physiographic zones and their suitability in underpinning the pSWLP;
  - ii) The requirement for GMP to be implemented on farm, as part of a 'hold the line' approach;
  - iii) Water quality state and trends;
  - iv) Linkages between the pSWLP and the limit-setting process;
  - v) Achieving successful Plan implementation via council-industry partnership;
  - vi) Mitigating the potential adverse effects of intensive winter grazing, including the area-based threshold for wintering land; and wintering and cultivation rules: Costs, benefits and implementation challenges associated with setback distances from waterways under cultivation and wintering rules.
  - vii) Farm Environment Management Plans:
  - viii) Effluent storage and discharge to land
  - ix) Remaining matters addressed by the s42A report.

### **3. OVERALL OUTCOME SOUGHT BY DAIRYNZ**

3.1 The overall outcomes sought in the DairyNZ submission are that the pSWLP:

- i. Is underpinned by robust scientific evidence, recognising that this science continues to evolve,
- ii. Enables Good Management Practice (GMP) whereby actions undertaken by farmers are practical, achievable, and economically viable,
- iii. Provides for industry/farmer-council partnerships to guide pSWLP implementation,
- iv. Provides a clear linkage between the planning framework and the limit-setting process.

### **4.0 DECISION SOUGHT BY DAIRYNZ**

4.1 In this section of my evidence I give an overview of the decision sought by DairyNZ and where this is recommended to be accepted in the Section 42A staff report, and where DairyNZ will focus our evidence because the matter is recommended to be declined in the s42A report. See Attachment 1 for a summary of the DairyNZ submission points and the s42A response.

#### **Proposed SWLP as a ‘hold the line’ plan while limit-setting policy is developed**

4.2 In the last three years or more, DairyNZ has been involved and supportive of Environment Southland (ES) progress in developing robust science and economics, and working with the community to work towards developing water limits under the NPS-FM. For instance, we have been involved in the Southland Economic Project<sup>1</sup>, and with ES and other industry organisations have produced a summary of research for agriculture and forestry (SRC publication No 2017-02, dated April 2017). DairyNZ has put resources toward identifying what might be needed to make on-farm and catchment land use changes that may be required to meet future limits. Our technical work has been looking five to ten years ahead to ensure that dairy farming in Southland can continue alongside community-held values for water. As a result, the DairyNZ submission focuses on the pSWLP as a plan that makes a start on the changes needed. The submission requests that ES ensures the pSWLP is more

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<sup>1</sup> DairyNZ, Beef + Lamb New Zealand, Department of Conservation, Ministry for the Environment, Ministry for Primary Industries, Southland Chamber of Commerce, Te Ao Marama, and Environment Southland. 2017.

practical for farmers to implement, rather than making major changes at this stage. DairyNZ will continue to work with dairy farmers to ensure that management plans (Farm Environmental Management Plans in the s42A recommendations), identify and implement good management practices. DairyNZ also wishes to continue working with ES on economic implications of plan provisions and limit-setting. DairyNZ is able to offer economic expertise at caucusing meetings should the panel direct this.

- 4.3 DairyNZ supports the aspects of the pSWLP whose intent is 'hold the line.' This is not a static 'do-nothing' approach. Instead, it is an approach that recognises that change needs to occur in stages, and be done in a way that prepares for subsequent regional plans or plan changes which allows ES to determine the most effective catchment location and means to achieve community desired water quality outcomes. In the interim, the pSWLP requires farmers to take a risk-based approach to activities on-farm, and ES can develop processes and baseline data from Farm Environmental Management Plans, as a cornerstone of the next regional plan.
- 4.4 Winter grazing is an example of a practice which will be managed in the Farm Environmental Management Plan. It is widely relied on by farmers in Southland's cold climate. It is a practice that poses risk to the environment, and is important to undertake an evidence-based assessment into the feasibility of a range of management options. DairyNZ supports ES taking a practical, first step to requiring farmers to manage winter grazing, while it works with DairyNZ and others to develop a robust, evidence-based means of determining the thresholds at which winter grazing activity represents a low, moderate or significant environmental risk. I cover the thresholds and implications of changes to winter grazing practices further in sections 4.38 and 4.39 of my evidence.

### **Physiographic Zones**

- 4.5 The DairyNZ submission (section 3.6 page 6) supported the concept of defining different physiographic zones to better manage environmental risk. However, at the time of writing the submission, DairyNZ was unable to assess the scientific robustness of the physiographic approach and/or the accuracy of the proposed physiographic boundaries due to the unavailability of the Validation Report on the physiographic zones.

- 4.6 Throughout the hearings process, we would like to be involved with council and other submitters in reviewing any further technical material and following this, involvement of our water quality specialists in caucusing meetings, if the panel determines this is required. DairyNZ notes that this will be necessary to give the Hearings Panel certainty that the science behind the Physiographic Zones is appropriate for its intended purpose.
- 4.7 With the caveat that DairyNZ should be given the opportunity to fully assess the scientific robustness of the physiographic zone, we agree in principle with this approach. In section 8 of his evidence, Mr Kitto states that he agrees in principle with the adoption of a risk-based approach to water quality management issues where there is clear scientific evidence linking contaminant loading and land management practices to impacts on community values such as ecosystem and human health. A risk-based approach such as the physiographic zone approach could be seen as a 'drafting gate', e.g.: in relation to consent status for wintering activities over the permitted activity threshold. However, in terms of a subsequent limit-setting process, Mr Kitto points out that more work is needed before the approach could be used to set catchment limits on the amount of diffuse discharges of contaminants to land or to land where they may enter water. DairyNZ believes the physiographic zones, as they appear in the plan, are a good start to apply a risk-based framework, and wishes to be involved in their further development with ES and other parties.
- 4.8 As noted in section 3.6 of the DairyNZ submission (page 6), a risk-based approach may mean that the required environmental actions for landowners may differ spatially. For that reason, it is essential that the Plan allows for a review mechanism to ensure Good Management Practices (GMPs) developed for a property are best suited to its environmental risks, irrespective of any conceptual physiographic boundary.
- 4.9 For this reason the DairyNZ submission also requests that landowners directly affected by the Physiographic Zone approach (section 3.8, 6), can review boundaries and justification for the zones. The s42A report recommends that a new Policy x be inserted to allow the Council to consider site-specific information when assessing consent applications. Policy x states:

*‘Recognise the need to take into account site specific information to verify key contaminant pathways for each property when assessing resource consent applications for land use and discharge activities. (s 6.48, S42A report).’*

4.10 We strongly support this policy. While the classification by Physiographic Zone will inform an assessment of contaminant pathways at a coarse scale; there may be variations in physiographic factors, e.g.: soil type, that may only be picked up at the property scale.

4.11 However, an additional review process is needed outside of the consenting process. Zone classification is likely to impact on land-use suitability, therefore a review option should be possible at any time, given the potential impacts on farmers wanting to sell or obtain finance. We therefore request an additional policy:

*Provide for a Physiographic Zone review process for any landholding when evidence is provided to support a review.*

4.12 Section 3.9 of the submission noted that the section 32 analysis did not consider loss of income, production, or land value for existing farms. Potential loss of income is addressed in sections 4.47 and 4.48 in relation to buffer widths for wintering and cultivated paddocks. The potential effect on income supports a need to allow for a review of physiographic zone by property, outside of the consenting process.

4.13 Overall, providing our request for involvement in any further technical review and request for zone review is accepted, we are satisfied that the physiographic approach is appropriate for the purposes intended.

#### **Management Plans and requirement to implement Good Management Practices on dairy farms in Southland**

4.14 The concept of good management practice (GMP) means different things to different people. I understand that the Ministry for the Environment is consulting key stakeholders on the development of nationally applicable good management practices for a broad range

of farm system types. In the interim, before GMP is more comprehensively discussed and agreed in New Zealand, the Plan would benefit from the definition of GMP according to the industry-agreed GMP's, published by Canterbury Regional Council and dated 9 April 2015, entitled "Industry-agreed Good Management Practices relating to water quality: Canterbury Matrix of Good Management Project." A related document that takes the Canterbury work as a starting point, is the 2016 DairyNZ publication entitled "Good Management Practices: A guide to good environmental management on dairy farms." DairyNZ will provide the hearings secretary with copies of both the Canterbury and the DairyNZ-published documents.

- 4.15 The DairyNZ submission generally supports the approach taken by the pSWLP in its response to the limit-setting requirements of the National Policy Statement on Freshwater Management 2014 (NPS-FM). In section 3.21 of the DairyNZ submission (page 10) DairyNZ supports Appendix N requiring farmers to identify the GMP that will be undertaken on their farm during the forthcoming financial year. We support this requirement, and ES's proposal to provide examples of good management practices (via council-industry agreed fact sheets) rather than prescribing these requirements in the Plan. We also support the use of farm environment plans as a framework and process for identifying the most appropriate GMP to manage farm-specific critical source areas.
- 4.16 However, In DairyNZ's view (see submission point 3.21), the reference in Appendix N, 5. to GMPs listed on the Council website creates significant uncertainty for farmers. Council prescription of GMPs<sup>2</sup>, e.g.: as required under FEMPs, rather than industry agreed GMPs, means that farmers may be required to move beyond GMP into farm system change, depending on the discretion of consents and compliance staff. Farm system change prior to limit-setting processes represents a significant business risk for farmers as the goal posts may shift again as a consequence of limit-setting. Farm system change also does not support the holding the line approach the pSWLP proposes to take."

#### **Other provisions in the Plan that relate to the 'Hold the Line' approach**

- 4.17 DairyNZ supports the consenting gateway for new or increased dairy operations in Rule 21, as recommended in the S42 report. It also supports the dual consenting thresholds of

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<sup>2</sup> For example, see 'Old Maitara fact sheet'.

discretionary status in all zones except the Old Mataura, Peat Wetlands and Alpine and non-complying status in the Old Mataura and Peat Wetlands. The consenting gateway is an appropriate way for the Council to hold the line by having particular regard to adverse effects and setting consent conditions that avoid, remedy or mitigate adverse environmental effects via management of identified contaminant pathways as identified in Policies 5-12 while more detailed and nuanced provisions are being developed with the community via that FMU limit-setting process.

- 4.18 To further support council's 'holding the line' approach we request that Policy 16 be amended in order to provide clarity around the two-stage process (region wide provisions followed by Plan Changes by FMU). We request the following underlined insertion into Policy 16:

*Policy 16 – Farming activities that affect water quality*

*1 Minimising Avoiding, remedying or mitigating the environmental effects (including on the quality of water in rivers, coastal lakes, lagoons, tidal estuaries, salt marshes and coastal wetlands, and groundwater) from farming activities by:*

*(a) ..*

*(b) In the interim period before detailed provisions to manage water quality under the NPS-FM are developed with the community, to strongly discouraging applications to establish new, or further intensify existing dairy farming of cows or intensive winter grazing activities where the effects on the quality of water, including cumulatively, of groundwater, waterbodies, lakes, rivers, modified water courses, wetlands, coastal lakes, lagoons, tidal estuaries, salt marshes and coastal wetlands cannot be avoided or fully mitigated or in areas where water quality is already degraded to the point of being over allocated.*

- 4.19 The DairyNZ submission (section 3.3, page 5) raised a concern that some plan provisions could be construed as moving beyond holding the line. DairyNZ put Permitted Activity thresholds for wintering forward as one example whereby 'any changes to the area of [land] devoted to winter grazing will require potentially significant farm system change', and that this farm system change could be considered as moving beyond Holding the Line. The S42A report reviews several options in response to submissions on this point. We agree that replacing the notified thresholds in Rules 23(b) and (c) with a single 50ha

threshold addresses our concern in relation to this matter sufficiently. DairyNZ supports the s42A recommendation to change the permitted activity threshold for wintering and this will be discussed further in sections 4.38 and 4.39 of my evidence.

### **Water quality state and trends**

- 4.20 The DairyNZ submission supported the desired water quality objective of holding the line before the catchment limit-setting. It supported Policy 16, which links farming activities to water quality and indicates that a 'Holding the Line' approach to farming activities will be applied to consenting new or further intensification of existing dairy farms whereby granting of these activities will be strongly discouraged unless effects on water quality can be avoided or fully mitigated. We support the s42A amendments in relation to Policy 16, except for the insertion requested in section 4.14 above.
- 4.21 The purpose of this section is to provide the panel with confidence that the pSWLPs 'Holding the Line' approach is supported by scientific evidence in relation to current state and trends with respect to water quality. That is, the current state and trends justifies a move to GMP, accompanied by a regulatory backstop, in advance of FMU-based limit-setting, as opposed to a regulatory approach that goes beyond GMP and heads toward farms having to implement farm systems change.
- 4.22 Mr Kitto has prepared technical evidence in relation to water quality state and trends. Mr Kitto is a Water Quality scientist and his evidence gives some context for the panel/hearings commissioners.
- 4.23 Mr Kitto notes that, until FMU-defined community values for water quality are determined, it is appropriate to assess water quality against the National Objectives Framework (NOF). Thus, Mr Kitto has only considered 'poor water quality' in the context of the national bottom-line for relevant attributes defined in the NOF.
- 4.24 The proposed Water and Land Plan contains Appendix E which includes water quality standards that must be maintained and will be referred to when granting consent. The DairyNZ submission sought to align Appendix E with the NOF. The S42A did not address this matter. The evidence of Mr Kitto shows that there are still differences in

terminology between the two documents.<sup>3</sup> It is DairyNZ's view that ES should implement a nationally consistent approach, given the policy direction from central government, as the region heads towards the limit setting process.

4.25 We recognise that the Southland community may potentially have different aspirations for water quality. However, these aspirations will only be confirmed during the FMU limit-setting process.

4.26 Mr Kitto concludes that overall, his analysis of water quality state and trends suggests that the Holding the Line approach taken in the pSWLP, in anticipation of a catchment based limit-setting process, is appropriate. Mr Kitto's conclusion is drawn from analysis of water quality state and trends for E.coli, phosphorous, clarity, ammoniacal nitrogen, periphyton, and nitrate-nitrite-nitrogen. Mr Kitto's analysis states that, in terms of the state of water quality:

*'The results of a water quality state analysis (summarised in Table 1<sup>4</sup>) conducted by Kitto and Hodson (2016) for the period 2009-2014 and by Hodson et al (2017) for the period 2012-2016 indicate that ecosystem health water quality state is generally of a high standard (A or B band) for nitrate toxicity and ammonia toxicity, as well as other attributes across a wide range of sites.'*

4.27 Mr Kitto's analysis also states, in terms of trends,

*'Overall, and in the context of NOF attributes, the results of trend analysis vary over a range of time-frames, with localised hotspots for certain attributes but not an overall, widespread picture of ongoing water quality deterioration. Trends for E.coli, phosphorus and clarity are predominately indeterminate while NH<sub>4</sub>H trends were dominated by indeterminate or decreasing trends.'*

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<sup>3</sup> Kitto, J. In evidence p.15.

<sup>4</sup> Kitto and Hodson (2016) summarised nitrate toxicity, periphyton and macroinvertebrate scores for the period 2009-2014. Hodson et al (2017) updated the nitrate toxicity results and added in ammonia toxicity results for the period January 2012- December 2016. Macroinvertebrate data and periphyton data was not updated in the Hodson et al (2017) report.

- 4.28 Overall, I consider that Mr Kitto's evidence gives the Hearing Panel confidence that water quality state and trends are such that a 'Holding the Line' approach is justified in advance of catchment limit-setting processes.

#### **Linkages between the pSWLP and the limit-setting process**

- 4.29 The DairyNZ submission (Section 3.5 page 5) noted that the absence of a 'roadmap' explaining the linkages between this Plan and the catchment limit setting process has created considerable community uncertainty.
- 4.30 We support the s42A comment that *'The intention of the region-wide limits is not to introduce any preconception of what limits should be determined at the catchment level.'* We would like to see this clearly stated in the plan. We would also like to see a clear statement about engagement with communities and giving them a voice. Working through a complex and challenging limit-setting process must be done together.
- 4.31 DairyNZ supports the Council involving communities in NPS-FM policy development in the development of the next change to the regional plan, with the starting point being the steps set out in policy CA2 of the NPS-FM. DairyNZ supports councils running comprehensive community engagement processes such as have occurred in Canterbury and in the Waikato and Waipa River catchments, and a number of other councils are part-way through plan development that involve community and sector representatives such as Bay of Plenty, Greater Wellington and Hawkes Bay. From a DairyNZ and landowner point of view, the more capable councils are at facilitating good processes for these complex and challenging limit-setting plans, the better the outcomes from the engagement. DairyNZ supports the council using facilitation and process techniques that are designed to move people and groups with diverse groups and interests towards agreement. DairyNZ supports the Council taking a community engagement process that involves farmers early and gives them a voice.
- 4.32 The limit-setting process for Southland will affect farmers and the local community, and DairyNZ would like to continue to see Environment Southland engage with these farmers and wider community in order to successfully develop a plan that meets the community's objectives.

- 4.33 The s42A report considers the need for a collaborative limit-setting process under Policy 47. I understand that Council staff are intending to provide some policy guidance in relation to the limit-setting process during the hearing. I look forward to having an opportunity to review and comment on this policy guidance.

**Guidance in the Plan about how ES will work with sectors on implementation**

- 4.34 DairyNZ's submission page 10 requested that a Technical Working Group be '*established to work with primary sector stakeholders to finalise its management planning requirements [and there is a]... need for council-industry partnership to successfully manage Plan implementation.*'

- 4.35 This matter was addressed on Page 83 of the S42a report where the officer states that this submission point was not specifically on the plan. In response, we note that plan implementation procedures have been explicitly provided for in other RMA planning contexts. For example, the Hawkes Bay Regional Council Plan Change 6 Tukituki plan directs council to develop a Procedural Guideline by 31 May 2018 in collaboration with primary sector representatives to aid in the implementation of Policy TT4.

- 4.36 In addition, the Council has gone to the extent of setting out a procedure for working with industry in its recommendations in relation to the drafting of the pSWLP. The Council Officer comments that the drafting approach for the pSWLP set out in Councillor workshops was:

*1. Utilise industry support and work in partnership where this is possible and beneficial*

- 4.37 A commitment to working with industry in the drafting stage reflects the ES's inclusive approach to policy development, and the recognition that industry provides useful input into this policy development. We would envisage that ES will continue to recognise the benefits of a positive working relationship with industry groups. We believe that harnessing this working relationship will be critical to Plan Implementation. The Plan and subsequent limit-setting is likely to improve awareness and drive a step-change in on-farm environmental management for many farmers. This step-change must be carefully socialised with farmers to ensure that rules are understood, and early buy-in and adoption

takes place. Our submission suggests that an implementation working group, consisting of Council planning, compliance and Land Sustainability staff, primary industry representatives and farmers be developed to assist with this. The group could also provide vital support on matters such as agreed GMPs, communication strategies and compliance approaches.

#### **Permitted activity threshold for wintering land;**

- 4.38 In its submission, DairyNZ questioned the arbitrary nature of the 20 ha and 50 ha thresholds contained in the proposed pSWLP. The s42A report has recommended that a single threshold, namely 50ha, be set as the PA threshold across all zones, except the Alpine Zone where intensive winter grazing is prohibited.<sup>5</sup> We strongly agree with the Officer's conclusion that the recommended single threshold will be easier to implement and understand. In our view, it will also reduce the likelihood that perverse outcomes will eventuate. We also note and support the Officer's comment that the 50ha threshold represents the highest consenting efficiency (percentage of total intensive winter grazing area x number of consents granted).
- 4.39 Whilst the Council Officer recommends a single PA threshold across all zones; a non-complying status for wintering land over and above the permitted 50 ha is recommended to be retained in the Old Maitara and Peat Zones. This still allows for additional risk factors in these two zones to be taken into account via a higher non-complying consent status threshold.

#### **Wintering and cultivation setbacks**

- 4.40 As stated in the beginning of my evidence, DairyNZ recognises winter grazing and setbacks for cultivation are key aspects where progress can be made by farmers. DairyNZ is resourcing farmer engagement and development of guidelines.
- 4.41 DairyNZ's submission (page 14) asserts that proposed setback distances for wintering and cultivation are insufficiently supported by scientific evidence in that they have tenuous links to environmental outcomes. The submission also raised the concern that

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<sup>5</sup> S42A report, p.285, 7.604.

implementation would create *'significant practical challenges for farmers, not least because the angle of slope can vary across paddocks, leading to variable implementation.'* The submission went on to state, *'It is also likely to impose significant costs on farm business, because it may unnecessarily reduce the area of land available for grazing.'* We proposed a permitted activity standard relating to the management of critical source areas as an alternative to linear setbacks.

4.42 The S42A report simplifies the setback distances into two slope categories rather than the three specified in the pWLP. We note and strongly support the Officers' recommendations to simplify wintering and cultivation setback rules, and provide alternative controlled activity consenting pathways via CSA management, among other conditions. We support the Officer's recommended controlled activity rule (Rule 23 (b1)) which stipulates that a 5m setback distance from water bodies can be used where:

- (i) A vegetated strip occurs, and;
- (ii) A FEMP is prepared in accordance with Appendix N that identifies Critical Source Areas (CSAs) and that a vegetated strip will be maintained alongside CSAs, or sediment retention systems will be installed at the bottom of CSAs.

4.43 We also strongly support the recommended insertion into Rule 23 (b) (vii) which allows for recognition of established fences, as at 3 June 2016, at a distance of 3 metres from waterbodies on slopes up to 9 degrees.<sup>6</sup>

4.44 However, if CSA management is not practical, farmers' next option is to fence off a 20 metre buffer from waterbodies on slopes over 9 degrees. We do have remaining concerns with respect to this recommended 20 metre buffer distance. Namely, we are concerned that a 20 metre could result in unjustifiable costs, practical implementation challenges and potentially perverse outcomes. In addition, scientific evidence reviewed by Mr Kitto does not indicate a clear need for a 20 metre buffer on slopes over 9 degrees.

4.45 A 20 metre buffer requirement for slopes over 9 degrees could result in several outcomes, some of them potentially perverse, in relation to the amount of wintering land not being able to be used. For example:

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<sup>6</sup> S42A report, p.300

1. Cows not able to be fed, due to lesser amount of winter crop able to be grown, could be wintered off farm;
  2. Wintering infrastructure could be constructed to accommodate cows;
  3. More feed could be imported or;
  4. Alternative, less suitable, paddocks could be used.
- 4.46 A range of costs has been estimated for Option 1, wintering off farm. Costs could range to up to \$3,600 per ha of wintering land not able to be used due to the establishment of buffers and requiring cows to be wintered off the property. The amount of land not able to be used for wintering will depend on where waterbodies occur in relation to wintering paddocks. Therefore, the potential costs of wintering additional cows off-farm could potentially be significant.
- 4.47 Options 1, 3 and 4 could also lead to perverse environmental outcomes. Option 3, greater use of imported feed, is likely to result in increased N leaching. Option 4 may result in increased pugging and loss of sediment via overland flow.
- 4.48 Wintering infrastructure is Option 2. The biggest barrier from a farm point of view is the cost of the infrastructure. It will also require additional skills to manage. This option is a significant change from current practice, and one which could constitute a wholesale change in the farm system. Costs associated with constructing wintering infrastructure could range from \$1000 - \$4000 per cow<sup>7</sup>.
- 4.49 Option 3 is likely to result in higher nitrogen losses. It is not to say that these options should not be considered by a farmer. Rather, it is that DairyNZ does not have sufficient confidence to support a 20 metre buffer from a scientific point of view to justify the costs, practical challenges and potentially perverse outcomes posed.
- 4.50 Mr Kitto's evidence explores the matter of scientific evidence relating to buffer widths further in a review of the '*state of knowledge and guidance in New Zealand about setback distances for minimising the overland runoff of fine sediment*'. Mr Kitto's shows that there is limited scientific evidence to support a 20 metre buffer over a 10 metre buffer. The

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<sup>7</sup> Lincoln University, Financial Budget Manual 2016.

review also shows that most riparian attenuation of overland runoff occurs within the first 5m of a riparian strip. Mr Kitto highlights a need to base the size of the buffer strip on an assessment of individual property factors, e.g.: *'landscape suitability (for example practicality of implementing measures and convergence zones), the timing of runoff relative to the seasonal vigour and density of grass filters and the effectiveness of other mitigation options such as sediment retention basins.'*<sup>8</sup>

4.51 Given the following factors:

- A lack of supporting scientific evidence for a 20m buffer with a suggested focus on individually tailored solutions relative to the property involved;
- Potentially perverse environmental outcomes resulting from wintering land lost, and;
- Potentially significant farm costs associated with wintering alternatives;

4.52 DairyNZ requests:

- i) The 20 metre buffer for slopes over 9 degrees be changed to 5 metres, and;
- ii) The alternative controlled activity consenting pathways recommended in 23(b1) and 25(c) be retained.

## **Appendix N – Farm Environmental Management Plans**

4.53 As I understand it, all permitted existing dairying operations will require a FEMP to be prepared within 6 months from the pSWLP being operative. There are approximately 1000 dairy farms in the region, many of which are likely to require This Rural Professional technical support to prepare, and support the delivery of, FEMPs. (DairyNZ submission para 3.19, Page 10). The s42A report recommends that Rule 20, *(non-dairy) farming*, be changed to allow for better staging of FEMP implementation by FMU.<sup>9</sup> However, Rule 21, *Dairy Farming of cows*, does not offer the same solution to a need for staging, when similar challenges in terms of numbers of FEMPs and limited availability of RPs will arise. DairyNZ requests that a similar staging solution be applied to FEMPs associated with dairy farms as to those related to non-dairying operations. There are approximately 1,000 dairy platforms

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<sup>8</sup> McKergow et al (2007), in Kitto, J. Evidence on behalf of DairyNZ.

<sup>9</sup> S42A Officers' report, 7.477, p.2540.

in Southland, with approximately a further 300 dairy support blocks. These approximate 1,300 properties are located within the following Freshwater Management Units:

- Fiordland and the islands 0
- Aparima 291
- Mataura 471
- Oreti 541
- Waiau 64

4.54 DairyNZ notes that it makes practical sense to stage the requirement for dairy farms to prepare and implement a FEMP by FMU, along a similar framework to the S42A report recommendations to Rule 20.

4.55 DairyNZ notes that Rule 21(b)(iv) requires that a FEMP is prepared and implemented, and that there is no default consenting option should this clause not be complied with i.e. a FEMP is not prepared. This is a concern for DairyNZ as it is feasible, given the amount of FEMPs required, that a farmer may be told by a rural professional that they cannot prepare a FEMP, due to workload, until a time outside of the 6 months' window referred to earlier. This further strengthens the need to stage the FEMP requirement for all farming activities in Southland.

## Effluent rules

4.56 DairyNZ raised several matters in relation to storage and discharge of dairy effluent in its submission. We support the following recommendations set out in the S42A report:

- **Rule 35(a)(i)(3), Allowance for more than one feed pad per property**

Rule 35(a)(i)(3), discharge of effluent to land, specifies that the PA threshold only covers situations where there is only one feed lot or wintering pad per landholding. The DairyNZ submission sought to remove the restriction on numbers of feed lots or wintering pads per landholding. The Officer's report accepts this request via a recommendation to delete the one feedlot/wintering pad restriction, whilst retaining a limit on the number of cattle being stood off on a wintering/feed pad to 100 cattle per landholding. We support the deletion of clause (3)(b)(ii) as follows:

Rule 35(a)(i)(3)(b)

~~(iii) is the only feed lot or wintering pad on the landholding; 239~~

- **Rule 35(b)(iii), Discharge of effluent to land (page 17 of DairyNZ submission)**

The DairyNZ submission asserted that Chartered Engineers may be unwilling to certify someone else's previous work for consenting purposes. The submission sought the following amendment

*'(iii) any pond, tank or structure used to store agricultural effluent prior to discharge is certified by a Chartered Professional Engineer as:*

*(1) being structurally sound; at the time of inspection.*

The S42A report has responded to this request via the following amendment

*'(iii) any pond, tank or structure used to store agricultural effluent with capacity of more than 35,000 cubic metres prior to discharge is certified by a Chartered Professional Engineer, within the last three years for clay lined storage and last five years for synthetically lined storage, as:*

*(1) having no visible cracks or defects that would allow effluent to leak from the storage being structurally sound;*

The recommended amendment is an improvement on the previous rule as it should provide more clarity and certainty for certifying engineers and farmers. We therefore support the recommended amendment.

- **Rule 32(a)(1), PA threshold for effluent storage**

The DairyNZ submission (page 16) requested that the scope of the matters for discretion be narrowed to exclude stone traps, sumps, sludge beds and weeping walls. It suggested the following insertion:

*Matters for discretion*

Environment Southland will restrict its discretion to the following matters:

- the design and construction of the storage and ancillary structures; with a volume greater than 30 cubic metres

The Officer's report recommended that this request be implemented via an amendment that states,

- **Rule 32(a), Effluent storage**

(i) the total capacity of all effluent storage on a landholding, excluding storage authorised by a resource consent, does not exceed 35 cubic metres;

We strongly support this recommendation.

**We do not agree with the following S42A recommendation:**

- **Rule 35(a)(vii), Discharge of effluent to land**

4.57 The DairyNZ submission sought to amend Rule 35(a)(vii) to tie the PA threshold to an 'average' rather than a maximum depth. The S42A report clarifies that the maximum depth has been chosen as it is easier to monitor from a compliance standpoint<sup>10</sup>. It is also less likely to result in ponding as application depths could be significantly over 10mm though still meet an 'average' application depth rule. In response, we would note that a maximum depth could significantly reduce the overall rate of effluent application, which may impose implementation challenges in irrigating sufficient volumes of effluent per day. For example, there may be small undulations in the paddock which may result in applications over 10 mm. However, the overall effect from these localised threshold exceedances does not pose an overall environmental risk and could still be constituted as a minor effect in terms of the rule.

4.58 In addition, irrigation depth tests that are provided to as part of the consent conditions mainly use the DairyNZ depth testing calculator. This refers mainly to average depth and rate. Average depths with or less than 10mm are represented a good practice but by imposing maximum depths at 10mm would likely cause average depths at around 8mm or less. This would cause many irrigators and therefore pond sizes to be non-compliant in Southland as irrigators have been designed to provide 10mm of average depth and an associated storage volume in the Dairy Effluent Storage Calculator. Therefore, we request

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<sup>10</sup> S42A report, s7.975

that the average rather than the maximum depth of dairy shed effluent discharged to land be used.

## **5        REMAINING MATTERS ADDRESSED IN S42A REPORT AND DECISION SOUGHT BY DAIRYNZ**

5.1        In this section of my evidence I refer to the decision sought by DairyNZ and the extent to which we accept the Officers' recommendations in the Section 42A staff report. I refer to the section of the submission headed up "key submission points" as well as the Table, titled *'Detailed response to Plan Change Provisions'*.

### **Objective 1: Integrated approach**

We accept the S42A recommendations.

### **Objective 6: Water quality**

We are satisfied that the apparent inconsistency between 6(a) and (b) has been sufficiently addressed in the S42A report.

### **Objective 11: Water allocation**

Our submission concerns the scale at which efficiency is measured. Some clarification is provided in the S42A report in that the need for reasonable use is added to the Objective. In addition, the S42A infers that efficient use as well as efficient allocation is covered in the Objective. Consequently, we accept the recommendation in the S42A on this matter.

### **Objective 12: flows**

We are satisfied that greater clarity around the term 'maintained' as been provided by the Officers' recommendations.

### **Objective 18**

Objective 18 states:

*All activities operate at "good (environmental) management practice" or better to optimise efficient resource use and protect the region's land, soils, and water from quality and quantity degradation.*

- 5.2 DairyNZ supports the requirement for all farming activities to operate at GMP. The S42A report identifies questions around GMPs as a key theme of submissions. In particular, ‘the reliance on GMPs, including questioning whether this will be adequate to solve the issues facing Southland, what the GMPs are and whether these are already being undertaken; (7.362)
- 5.3 DairyNZ has invested significant resources into identifying and advocating appropriate GMPs. As Mr Kyte’s evidence shows, DairyNZ has developed numerous tools and GMP documentation that have been the main focus for DairyNZ’s extension activities in Southland over recent times. Mr Kyte also states that during this time the awareness of implementing GMP in the dairy farming community has increased markedly. Mr Kyte concludes by saying that from his experience as Regional Leader in Southland, and involvement in the DairyNZ-established catchment groups many farmers are incorporating good management practices into their farming operations.
- 5.4 While DairyNZ strongly espouses GMP, we consider it is appropriate for ES to retain a regulatory backstop when GMP is not being met. The point at which GMP crosses over into regulatory backstop depends on context of the GMP in question. In general, we consider the pSWLP, incorporating the recommendations made by the Council officers in their S42A report, strikes a good balance between GMPs, e.g.: those set out in Appendix N, Farm Environmental Plans, and the consenting thresholds as recommended by the S42A report.
- 5.5 The extent to which the GMPs bring about changes in water quality should be able to be measured prior to the FMU limit-setting process. We agree with the S42A comment that, *‘Due to the relatively short lag times, Environment Southland’s ongoing water quality monitoring is likely to reveal the impact that GMP will have on water quality, which will inform the FMU processes. I consider that changes in trends would be an inevitable influence on FMU processes. (7.550).’* It follows that, at the start of each FMU limit-setting phase, a stocktake can be taken of the extent, nature and effectiveness of GMPs (in terms of water quality) in order to inform future action in each catchment.

- 5.6 DairyNZ notes that Southland Fish and Game seeks ‘measurable and accountable “good (environmental) management practice”. This has not been accepted in the S42A report. Measurability and accountability are an inherent part of GMP, and are already incorporated into industry GMP. We therefore agree with the S42A recommendation.
- 5.7 However, as mentioned in the DairyNZ submission (section 3.3), DairyNZ has concerns about requiring farms to undertake good management practices that it consider go beyond GMP. While we support farmer flexibility in that they may wish to adopt management practices as they see fit it is DairyNZ’s opinion that there should not be any element of compulsion reflected in the planning provisions that require them to achieve ‘better’ than GMP. To do so may place farmers in a position where they must invest in infrastructure or farm systems change in the interim period before the limit-setting phase has occurred. These changes may not be sufficient or may be the wrong approach and will result in unwarranted cost to farmers.

**Policy 15: Maintaining and improving water quality**

Point 3 – delete ‘and’ at the end of the sentence. It is not required due to the addition of point 5.

**Policy 16: Farming activities that affect water quality**

Close proximity

The S42A explanation that sits alongside the rules satisfies or request for greater clarity around the ‘close proximity’ term. We accept this explanation.

**Fully mitigated**

The s42A explains that deletion of ‘fully’ will mean some activities with minor effects may be granted and that this would not achieve water outcomes of maintain and improve water quality. Particularly in the context of the policy which links full mitigation with ‘areas where water quality is already degraded to the point of being over allocated’. We accept this stance.

**Rule 21**

- 5.8 We support the s42A recommended amendments to Rule 21. However, we note that Rules 21(d) and 21(e) state that dairy farming that doesn’t comply with Rule 21(a) is a discretionary activity or a non-complying activity, respectively. The S42A report

recommended a new 21(a) – which states that the use of land for dairy farming of cows where the dairy shed services a maximum of 20 cows is a permitted activity – and so not meeting that requirement should not be a criterion for a discretionary or a non-complying activity. DairyNZ request that the reference to not complying with Rule 21(a) in Rules 21(d) and 21(d) be deleted.

### Administrative matters

The following are several minor matters to be amended for clarity.

- The numbering should be corrected. It goes from 23(b)(ii) to 23(b)(iv) to 23(b)(vii) for example and misses (i), (iii), (v) and (vi). should be amended.
- 23(b1)(ii) should read “...on any land to be intensively winter grazed and that either confirms”
- Amend ‘crucial’ to ‘critical’ in 23(b1)(ii)(1).

### In summary

5.9 In DairyNZ’s view, Mr Kitto’s evidence about Southland water quality state and trends should give the panel confidence that a holding the line approach is appropriate prior to limit-setting processes under the NPS-FM. In the interim, and subject to further scientific analysis, we consider that the use of a risk-based approach in the physiographic zones provide an appropriate drafting gate for consenting requirements.

5.10 DairyNZ supports the adoption of GMP to hold the line in terms of water quality, prior to limit setting. Mr Kyte states, *‘Many GMP initiatives to improve environmental outcomes are already well underway [in Southland], and are being worked towards voluntarily. Collectively these initiatives contribute to a Holding the Line approach for water quality management’*.

5.11 However, in DairyNZ’s view, achieving GMP on farm should not require farm system change as this would move beyond the Holding the Line approach, which is set out as the intent of the pSWLP.

- 5.12 DairyNZ has remaining concerns regarding what level of GMP will be required under council discretion in the development of FEMPs. Therefore these GMPs need to either be industry supported, or jointly developed between industry and council. FEMPs need to be explicitly staged, to address issues of RP availability.
- 5.13 Management of CSAs, as required by FEMPs, is our preferred alternative to specified buffer distances. However, the buffer distances provide a regulatory backstop for this GMP. Buffer distances need to be supported by scientific evidence. However, we are not confident that such evidence supports a 20 metre buffer for slopes over 9 degrees. A larger than necessary buffer is economically inefficient due to potential economic impacts insufficiently balanced by environmental benefits. 20 metre buffers could also have perverse environmental impacts. We instead recommend a 5 metre buffer on these steeper slopes.
- 5.14 We support an amended wintering PA threshold, as it is easier to understand and implement and less likely to result in perverse outcomes. We also support the recommended amendments to effluent rules we submitted on, except for the maximum effluent application rule, which we request is amended.
- 5.15 Overall, the pWLP, as amended by the S42A report, strikes an appropriate balance between GMP and regulation and we generally support it, subject to our concerns above being addressed. Successful on-farm plan implementation will depend on genuine council-industry/farmer partnership in order gain awareness, understanding, buy-in and adoption needed under the SWLP and subsequent Plan Changes.

**CHARLOTTE WRIGHT**

**15 MAY 2017**