

**IN THE MATTER** of the Resource Management Act 1991

**A N D**

**IN THE MATTER** of submissions and further submissions by Rangitata Diversion Race Management Limited (**RDRML**) on proposed Variation 2 to the proposed Canterbury Land & Water Regional Plan

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**STATEMENT OF EVIDENCE OF SUSAN MARY CUMBERWORTH**

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**Introduction**

1. My name is Susan Mary Cumberworth.
2. I am a director of The AgriBusiness Group and work as an agricultural consultant and facilitator based in Lincoln, Central Canterbury.
3. I have a Bachelor of Agricultural Science from Massey University.
4. I am a member of the New Zealand Institute of Primary Industry Management (NZIPIM).
5. I have spent over thirty years as a consultant in the primary industries. In the last ten years a key focus of mine has been assisting irrigation schemes in their development and implementation of Audited Self-Management ('**ASM**') programmes, which include Farm Environment Plans ('**FEPs**') and their auditing.
6. I commenced ASM FEP work in 2005 in a project working with Central Plains Water and The Ritso Society Inc, a farmer group. The project intent was to develop a framework which enabled implementation of best practice environmental management on-farm tailored to individual farming systems and businesses. The outcome was a series of processes and templates, which included a Farm Environmental Plan for Irrigated Land Use template for farmers to use to demonstrate how they are actively managing their use of natural resources in order to achieve high standards of environmental

- management and optimise production from irrigation. This work is reported in *'An Environmental Management Scheme for Irrigation Schemes in New Zealand'* Mulcock C, Cumberworth S and Brown I. Prepared for The Ritso Society Inc. June 2009.
7. The concept and the processes from this work with The Ritso Society Inc. have been included in consent conditions for Central Plains Water Ltd and Hunter Downs Irrigation (new schemes) and Morven Glenavy Ikawai Irrigation Company (**'MGI'**) (an older scheme requiring consent for an extension to their command area). I have been involved with MGI's ASM programme in the development and implementation of FEPs on-farm, FEP auditing and reporting and follow-up education and training with farmers to target specific areas for the implementation of improved on-farm environmental practice. In Canterbury other schemes are implementing similar FEP processes outside the consent process as they strive to achieve and demonstrate good environmental practice.
  8. Rangitata Diversion Race Management Ltd (**'RDRML'**) and its associated irrigation schemes voluntarily and, in my opinion, proactively, chose, in 2011, to develop and implement an ASM programme with the goal; to ensure that both the scheme operators and water users can achieve high environmental standards and sustainable outcomes. I have assisted RDRML with their ASM programme since this time.
  9. I have a strong community interest, as well as my professional interest and expertise, in the integration of on-farm management practices which achieve both productive and profitable agribusiness outcomes and good environmental outcomes. In this regard I was a community member of the Selwyn Waihora Water Zone Committee from its inception in 2010 for 3 years. During this time the zone committee, working with community and industry groups, developed the Selwyn Waihora Zone Implementation Plan (**'SW ZIP'**) and the SW ZIP Addendum, which contained recommendations for the implementation of the Canterbury Water Management Strategy (**'CWMS'**) in Selwyn Waihora and contributed to Proposed Variation 1 to the Proposed Canterbury Land and Water Regional Plan. I am also a trustee of Te Ara Kakariki Greenway Canterbury Trust, which promotes a greenway of native habitat from the

mountains to the sea on the Canterbury Plains, and particularly the integration of native plant communities into working landscapes.

### **Expert Code of Conduct**

10. I have been provided with a copy of the Code of Conduct for Expert Witnesses contained in the Environment Court's Consolidated Practice Note dated 1 December 2014. 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.

### **Scope of evidence**

11. My evidence is given in support of the submission by the RDRML in relation to Proposed Variation 2 (Hinds) to the Proposed Land and Water Regional Plan ('**Variation 2**'). In particular I will be providing evidence regarding the provisions within Variation 2 relating to 'Good Management Practice' ('**GMP**').
12. As background to that, I also outline the work I have done with RDRML and other irrigation schemes in Canterbury with regard to the development and implementation of ASM FEP programmes.
13. I am familiar with Variation 2 and the section 42a report and the RDRML's submission and further submissions to it. I have also read the:
  - Ashburton ZIP Addendum: Hinds Plain Area. March 2014.
  - Relevant parts of the Proposed Variation 2 to the Proposed Canterbury Land and Water Regional Plan Section 32 Evaluation Report. September 2014.
14. I was involved in the RDRML review of Variation 2 and contributed to their submission, in particular relating to GMP.

## **Irrigation scheme ASM FEP programmes in Canterbury**

15. ASM FEP programmes are, in my experience, now at some stage of being implemented within most of Canterbury's irrigation schemes. MGI has the longest history, having commenced their programme in 2010. I have worked with MGI in the implementation of their programme throughout this time. All MGI properties have now had several FEP audits, which has provided good information to the company about the levels of on-farm practice and the education and training needs of the farmers within the scheme. MGI work with industry groups to provide training days for farmers, so they can promote on-farm management practices for good land stewardship and environmental outcomes as well as practices to achieve improved productivity and profitability outcomes. Some practices which promote good practice resource use, especially of water, nutrients and soil, can achieve improved results in all the areas of environmental, productivity and profitability outcomes.
  
16. RDRML and its associated irrigation schemes proactively initiated their ASM FEP programme in 2011, through a desire for high environmental standards and sustainable outcomes, rather than from a compliance driver. I have worked with RDRML in the implementation of their programme since this time. RDRML recognised the opportunity to develop a web-based FEP system, in preference to a paper based process, with the aim of a user friendly programme which could be updated by their large farmer group, of 450 irrigators, on an annual basis and in so doing support annual reporting requirements and provide data management and benchmarking opportunities. All irrigators supplied with RDR water have now completed Part 1 of their FEP and are on target for full FEP completion within the next 12 months. This is a substantial undertaking and represents a very pleasing level of progress.
  
17. During this relatively short period since RDRML began their ASM FEP programme there have been several developments which have led to significant changes in their ASM FEP programme. The National Policy Statement for Freshwater Management (NPSFM) released in 2011 and the discussion document – Freshwater Reform 2013 and Beyond, released in response to the recommendations made by the Land and Water Forum have together reshaped the way freshwater resources, and associated land uses, are to be managed. Regional Councils including Canterbury are developing

plans in response to the requirements of the NPSFM including the NPSFM 2014.

18. I refer to these policy changes because I believe they are very significant in changing how FEPs are to be used on farms and by irrigation schemes in the future. There is now an expectation, and regulatory requirement, for FEPs to report nutrient budgeting results. Past experience with FEPs has been as a tool for farmers to identify environmental risks, describe on-farm practices to manage these risks and to demonstrate these against FEP objectives and targets. Nutrient budget use in these FEPs was for the purpose of fertiliser recommendations and efficient nutrient use. The purpose of FEPs is now being extended to also include the reporting of nutrient loss rates using a nutrient budgeting tool and to describe, as required, the mitigation plans on-farm to reach a nutrient loss target using the nutrient budgeting tool. Auditing of these FEPs will, as previously, require an assessment of on-farm practices and processes against FEP objectives and targets, and will now also require an assessment of the robustness of the nutrient budget and the suitability of the loss rate. For rural professionals, irrigation schemes and farmers, this new focus to manage and report nutrient loss figures and nutrient limits is an enormous change, which I believe will take significant time and new skills to manage.
19. The rural professionals preparing Overseer nutrient budgets have largely been fertiliser company staff, and to a much lesser extent some farm management consultants. The use of nutrient budgets has been to prepare fertiliser recommendations as part of nutrient management plans, the purpose for which Overseer was developed. The fertiliser industry have a training programme of two Massey University papers, of Intermediate and Advanced Sustainable Nutrient Management, each a three day course with an examination, and the latter paper also requiring comprehensive pre-course case-study work, suggested by the programme to take up to 200 hours. I have observed a steady increase in the number of staff employed by fertiliser companies, particularly to meet the demand for dairy farmers to have nutrient budgets as part of dairy company supply agreements. I note that these budgets are prepared as part of a fertiliser recommendation process. For more comprehensive nutrient budgeting requirements at least one fertiliser company now has a commercial user-pays business arm as well.

20. In my observation, most established farm management consultants have been less inclined to upskill in nutrient budgeting, preferring to continue with their traditional whole farm system work, and relying on the fertiliser company nutrient budgets or contracting in that work from a specialist consultant, or in some cases employing new staff with these skills to meet their needs. I am also witness to new consultants setting up business based around an increasing demand for nutrient budgeting and consenting work. I see these employment trends increasing.
21. Outside the rural profession regional council staff and others in environmental fields are also becoming qualified with the nutrient management courses. Most do not have agricultural qualifications which has been seen as a short coming by primary industry. The response is a farm systems accreditation scheme which is presently being developed by DairyNZ and NZIPIM in anticipation that this may be a future requirement for auditors of FEPs.
22. In my opinion the demand for FEP and nutrient budget preparation and auditing will be filled by existing and new personnel with training through these differing pathways.
23. Canterbury irrigation schemes are responding to the increase in work load, skill requirement and compliance requirement by employing additional staff, often with environmental, compliance and nutrient budgeting expertise. That is the case with RDRML who, in January of this year, employed a full time compliance manager.
24. The farmer directors of irrigation schemes are now being asked to extend their area of responsibility, knowledge and skill. For many this has extended to the development, implementation and management of an FEP and auditing process. In my experience, whereas most directors are comfortable with and encourage this new role of promoting a process of documenting and demonstrating good environmental management of resources, which they see as a farmer's land stewardship role, they do not embrace as willingly the task of managing a nutrient limit. Finding themselves in the position of potentially managing nutrient allocation amongst their neighbours and in their communities is not the job they signed up for as directors of a water supply

- company. What I am observing however in the case of RDRML, unlike some other schemes which are choosing not to enter into nutrient limits at this stage, is a preparedness to take this responsibility on behalf of irrigator shareholders, knowing that in this way they will have more opportunity to be involved in and control the process, rather than having to accept requirements, which may be less favourable to them.
25. Irrigation schemes which have in the past needed simple shareholder databases only, are now having to create complex database systems including GIS to manage FEPs, FEP auditing processes and reporting, nutrient budget information and nutrient load management and reporting. In the case of MGI, I have witnessed the complexity required to manage FEPs and auditing for 135 FEPs which they have progressively developed over 5 years with assistance from outside expertise. In the case of RDRML the task is greater with 450 shareholders and more complex with their nutrient load to be managed as well. They have taken on this responsibility of data management on behalf of their shareholders and I believe their adoption of an on-line system, which although very complicated and expensive to set up, can facilitate the complex data management task they have ahead.
  26. Farmers are also being required to upskill to meet the challenge of developing and implementing FEPs. They are being required to develop, in many cases, new recording systems to keep evidence and records to demonstrate good practice. In my experience, for most farmers they accept this new requirement and its time and financial cost, although reluctantly, while for others the process is very difficult and invasive as they contemplate having to justify and undergo scrutiny of their on-farm practices and systems. For these farmers, I have observed, that the advantage of being in an irrigation scheme to facilitate and provide support through this process is extremely advantageous.
  27. For farmers the opportunity of being in an irrigation scheme with a land-use consent covering all shareholders is now also a significant benefit. The increase in work load and expertise required by scheme staff is a saving and efficiency for individual farmers, but also a significant financial cost. Through their water user charges farmers are paying for the processes being provided to them by their collective, which include all the FEP and auditing processes, data management and reporting. In many cases farmers will, in my opinion,

- also be paying individually more in the future for their nutrient budgets. Until now simple nutrient budgets have been completed by fertiliser company staff in a few hours per farm as part of fertiliser recommendations. In future the more complex nutrient budget preparation time requirements by a consultant for a “robust” budget to meet FEP and nutrient limit reporting, will, in my experience be more in the order of half a day for a simple dairy farm, to several days for a complex arable farm. Some farmers will continue to get their required nutrient budget through their fertiliser recommendation process, while others will need to contract this task separately.
28. I have described significant benefits I see for farmers in an irrigation scheme with regard completing the ASM FEP processes. When that scheme also has a land-use consent with nutrient limit, as RDRML has, these benefits multiply. While the farmers have to manage their on-farm practices and nutrient management within any limit that might be applied, the scheme takes responsibility for all the auditing, reporting and compliance processes. In my experience these are much more efficiently managed as a group process, in the case of RDRML as a 450 farm lot, rather than as 450 individuals.
29. The auditing and compliance role being required of irrigation schemes through FEP ASM, in my experience, varies between schemes with different consent requirements and has not been prescribed by Canterbury Regional Council (**‘the Council’**). Rather it has been the responsibility of the irrigation scheme to develop the process and then liaise with the Council to confirm the suitability. In the case of RDRML a pilot process is in place as described by Mr Curry in his evidence. The Council are in the process of developing templates and procedures for the auditing of FEPs and nutrient budgets, which in my opinion is extremely positive and helpful, provided that some flexibility is maintained for schemes to tailor systems to their individual needs. I fully support any initiatives by the Council to provide templates and processes, developed in liaison with industry participants, because of the efficiencies they can provide to schemes, rural professional and farmers.
30. With regard FEP auditing and compliance processes, irrigation schemes must develop compliance and enforcement procedures. RDRML have developed an Environmental Management Strategy outlining their environmental goals, objectives and targets, under which a Scheme Management Plan will describe



their operational processes including auditing, compliance and enforcement processes. Water supply and use agreements then describe requirements and processes to the water users. In these processes the irrigation schemes final enforcement step is the ability to refuse supply of water to the irrigator, providing a very real incentive for farmers to comply with requirements. I have seen the threat of this consequence used to great effect by an irrigation scheme.

31. The auditing process which I have used in ASM FEP programmes is one of checking on-farm practice against the FEP objectives and targets, scoring the results, and level of compliance, specifying any required actions and their timeframe for completion, and in most cases supporting the farmer, if required, with suggestions of information or the source of information to achieve improved practice and the required actions. This process is not one of providing professional advice, but rather of where information can be accessed, and was developed with MGI because they saw the audit process as being an essential part of the continuous improvement process of an ASM FEP programme. The feedback that I receive from farmers and irrigation schemes is that this approach makes the audit a positive experience for farmers and leads to improvements in on-farm practices, which I have in turn witnessed on follow-up audit visits.
32. Within the RDRML all farmers have completed Part 1 of their FEPs, with Part 2 completion underway. A pilot audit process is planned for next irrigation season (2015/16), which will enable a full audit and reporting implemented in 2016/17. Farmers have a pathway ahead of them of increased awareness, acceptance and implementation of FEPs and GMPs, which is a significantly new process for most of them.. In my opinion these changes can occur, given adequate time and support, in a way to provide positive outcomes for both the environment and their farm businesses.

### **Good Management Practice**

33. The RDRML submission on Variation 2 sought to add a definition of the phrase 'Good Management Practice' and to insert a schedule to define GMP. The reason being that I had noted that Variation 2 sought to insert a definition of the phrase 'Good Management Practice Nitrogen Loss Rates', but that there

was no corresponding definition of the phrase 'Good Management Practice'. For this reason Mr Ford and I collectively developed the Schedule 24b that was suggested in RDRML's submission.

34. Since lodging the RDRML submission, there have been further developments with regard to GMP in Canterbury through the decisions on Variation 1 and its reference to Schedule 24 and GMP's, and the release of the 'Industry-agreed Good Management Practices relating to water quality – Canterbury Matrix of Good Management Project' (**MGM GMPs**). The latter industry agreed document states that these MGM GMPs will be applicable to all farms in Canterbury by 2017. It is also my understanding that these practices will be part of the plan change Environment Canterbury is expected to notify in September 2015. In my opinion these developments now provide adequate descriptions of GMP.
35. The RDRML proposed schedule described practices for effluent systems, fertiliser application and management, stock exclusion and irrigation application. Industry codes of practice and the proposed Canterbury Land and Water Plan rules and policies were referred to. In my opinion the GMP descriptions in the Variation 1 decision and the MGM GMPs include the GMPs in the RDRML proposed schedule.
36. In my opinion, there is no longer any need to insert a definition of GMP or the schedule proposed by RDRML and in that respect I agree with the reporting officer.
37. The RDRML submission also sought that if the proposed schedule to define GMP were not acceptable to the Council that 'additional time' would be required for RDRML as described in the proposed FEP Extension Programme.
38. The RDRML is no longer seeking to insert the proposed schedule. Therefore in my opinion, there is no longer any need to insert a FEP Extension Programme and in that respect I again agree with the reporting officer.
39. I confirm that not defining GMP as per RDRML's proposed schedule for Variation 2 does not undermine in any way the nutrient budget modelling and analysis which Mr Ford has undertaken for RDRML. The reason being that the

nutrient budgeting Overseer tool assumes a comparable level of GMP in its modelling.

## Conclusion

40. The RDRML submission on Variation 2 sought to insert a schedule to define GMP. Since lodging that submission, there have been further developments with regard to GMP in Canterbury through the decisions on Variation 1 and its reference to Schedule 24 as GMP and the release of the 'Industry-agreed Good Management Practices relating to water quality – Canterbury Matrix of Good Management Project' (MGM practices). In my opinion, there is no longer any need to insert a definition of GMP and in that respect I agree with the reporting officer.
  
41. The RDRML submission also sought that if the proposed schedule to define GMP were not acceptable to the Council that 'additional time' would be required for RDRML as described in the proposed FEP Extension Programme. In my opinion, there is no longer any need to insert a FEP Extension Programme and in that respect I agree with the reporting officer.



Susan Mary Cumberworth

15 May 2015