

**Before the Bay of Plenty Regional Council
Independent Hearing Commissioners**

Under the Resource Management Act 1991 (the Act)

In the matter of Lake Rotorua Nutrient Management -Proposed Plan Change
10 to the Bay of Plenty Regional Water and Land Plan

Between **Bay of Plenty Regional Council**

And **Fertiliser Association of New Zealand**

**Statement of Evidence for Claire Kelly for
Fertiliser Association of New Zealand**

Dated: 6th March 2017

About FANZ

- 1 FANZ is a trade association representing the New Zealand manufacturers of superphosphate and nitrogen fertilisers. FANZ member companies are Ballance Agri-Nutrients Ltd and Ravensdown Limited. Both these companies are farmer co-operatives with some 45,000 farmer shareholders, and between them supply over 98% of all fertiliser used in New Zealand.
- 2 To promote good management practices, FANZ has funded training programmes, and developed codes of practice, information booklets and fact sheets. FANZ also funds research, partners with government on research and development projects and works closely with other organisations in the agricultural sector on industry-good issues. This includes funding for OVERSEER[®] as a one third owner, along with AgResearch and Ministry for Primary Industries. Management of OVERSEER was transitioned in 2016 to a new company structure, (OVERSEER Ltd). This includes the addition of two independent directors to provide an independent perspective on the management and on-going development of OVERSEER.
- 3 FANZ supports and encourages an environmentally responsible science-based approach to nutrient management and its regulation. FANZ member companies provide product that is critical to New Zealand farming systems along with research that supports both environmentally sustainable farming practices and government's export growth agenda. FANZ supports responsible nutrient management with interests and responsibility across all agricultural sectors, including dairy, sheep, beef, arable and horticulture.

OVERSEER

- 4 OVERSEER[®] is an agricultural management tool which assists farmers and their advisers to examine nutrient use and movements within a farm system. It assists in decision making for nutrient use to optimise production and manage the risk of losses to the environment. It is a science based model that is regularly updated to incorporate improved science.
- 5 OVERSEER provides a long-term annual average estimate of nutrient cycling in a farm system. It does not provide for day to day management, but rather provides estimates for each of the pathways for nutrient sources and losses for a farm system. These assume the farm system is in a stable state of equilibrium and not undergoing transition from one system to another, or from one level of development to another. The estimates are presented as an overall annual

average. These diffuse nutrient losses from farm systems cannot be measured. Modelling provides estimates of these nutrient movements and can be used to understand nutrient requirements to maintain soil fertility at its current levels and also to understand the relative change in nutrient losses under different scenarios for a farm system. (Nutrient losses include outputs to saleable product, the atmosphere or to surface runoff and leaching below the root zone).

- 6 Use of OVERSEER for critical evaluations, such as for regulation, requires qualified advisers who have a good understanding of the model's operations and underlying assumptions. It also requires standardised data inputs and a good understanding of farm systems and nutrient management.

Nutrient Management Adviser Certification Programme

- 7 For these reasons, the fertiliser industry funded Massey University to develop the intermediate and advanced 'Sustainable Nutrient Management in New Zealand Agriculture' courses which have become an industry standard for training of nutrient management advisers. This has now been taken further by FANZ, supporting and providing administrative services for the Nutrient Management Adviser Certification Programme (NMACP). In 2012, DairyNZ commissioned the assistance of the Fertiliser Association to establish the programme as part of a Ministry for Primary Industries' Primary Growth Partnership (PGP).
- 8 The NMACP was developed with the aim of building and upholding a transparent set of industry standards for nutrient management advisers to meet, so that they provide nationally consistent advice of the highest standard to farmers. The programme was developed with an Advisory Group, with pan sector representation, including regional council, university and primary sector representatives supporting recognised qualifications and ongoing proficiency of those who advise on nutrient use and management in the farming community. There is also an annual requirement to demonstrate currency in nutrient management with a framework for 'Continuing Professional Development' incorporated into the Nutrient Management Adviser Certification Programme.
- 9 There are currently over 155 certified nutrient management advisers throughout New Zealand.

Code of Practice for Nutrient Management

- 10 To support the responsible use of fertilisers, FANZ has developed the Code of Practice for Nutrient Management and publishes comprehensive information booklets on fertiliser use in New Zealand agriculture.

FANZ's philosophy and approach

- 11 FANZ's philosophy and pragmatic approach to nutrient management is the basis for its submission and further submission, and provides the context for the expert planning evidence.
- 12 FANZ takes a particular interest in regional policy statements and regional plans in terms of supporting provisions that enable the sustainable management of natural and physical resources, and ensuring any regulation of land use activities that may use fertilisers is appropriate and necessary.
- 13 The industry supports systems that provide flexibility for land users to engage appropriate tools and practices to responsibly apply appropriate farm system inputs required to meet commercially viable production while managing farm system losses. Indeed, this outcome is essential for the national and regional economy.
- 14 The fertiliser industry continually advocates for Policy and Plan processes which:
 - a. are output based, (i.e. targeting achievable environmental outcomes, as is consistent with the RMA, and not regulate inputs or production limits). FANZ recognises that developing output based measures requires significant resources and a scientific basis.
 - b. maintain flexibility and encourage innovation to avoid, remedy or mitigate environmental effects.
 - c. pursue Industry Good Management Practices, using:
 - Codes of Practice
 - Education programs
 - Incentives for adoption
 - d. encourage close collaboration and co-operation with industry bodies and sector representatives to find solutions to address land management issues
 - e. seek catchment based environmental targets and goals, which are consistent with National Policy Statement as well as current and future land use and development to provide for the communities economic, social and cultural well-being.

- 15 Whilst FANZ supports output and effects based measures and efficient use of resources, it does not consider the nutrient use efficiency index to be an appropriate means of assessing farm performance or environmental risk. The index represents a ratio of nutrient outputs e.g. to saleable produce, relative to inputs. It may enable outputs and losses to increase while still meeting or improving on the 'efficiency' ratio. There is a commercial incentive to achieve nutrient use efficiency, but it must be weighed against other farm related goals. Provided the nutrient losses from a land use activity remain within accepted limits, the efficiency ratio should not be matter of regulatory control or interests, any more than (for example) labour efficiency or fuel efficiency. While the fertiliser industry supports the benefits of the efficient use of nutrients, it is not an effects based measure in terms of addressing risks to water quality.
- 16 FANZ supports effects based measures, based on losses from the farm system. Losses cannot be measured directly and the use of OVERSEER[®] provides for the management of discharges by way of estimating annual average inputs and outputs of nutrients per hectare per year.

Use of OVERSEER[®] in regulation

- 17 FANZ considers the document '*Using OVERSEER[®] in Regulation - technical resources and guidance for the appropriate and consistent use of OVERSEER by regional councils, August 2016*' provides useful guidance. It discusses the issue and complexity of managing different and changing versions of OVERSEER[®]. It considers the use of a mechanism outside of, but linked to, the plan to minimise the impact of OVERSEER[®] version changes on regional rule thresholds, but recognises that (as at July 2016) there is no case law on this type of linked external mechanism. An example of a mechanism for accommodating version change in a nutrient threshold has been proposed in Bay of Plenty Plan Change 10 with 'reference files'. A similar approach is taken in Plan Change 3 to the Canterbury Land and Water Regional Plan. Numeric thresholds in kg N/ha/year are used to denote, for example, maximum loss rates. When a new version of OVERSEER[®] is released, a suite of OVERSEER[®] files (>90 files) that are considered to be representative are re-run and the average percentage difference between versions is applied to the nutrient threshold for flexibility cap, and maximum cap, and in turn the catchment load limits.

- 18 The document “Using OVERSEER in regulation’ acknowledges the value of reference files and not relying solely on one threshold condition for resource consents¹.
- 19 With all models there are levels of uncertainty. Uncertainty increases with poor quality data inputs, Hence, OVERSEER[®] requires the appropriate use of ‘good quality’ data. Some of the ‘uncertainty’ arising from seasonal variation and consequential adjustments in farm practice can be overcome by using independent parallel sources of information and averaging data over a number of years to minimise variance. The document ‘Using OVERSEER[®] in Regulation’ suggests that a rolling average of a minimum of the previous 3-5 years of OVERSEER[®] outputs should generally be used to provide a less variable and more meaningful indication of long-term nutrient loss from a farm system. A practical example is Bay of Plenty Regional Council who agreed to estimate an average nitrogen loss over 3 consecutive years for livestock farming systems and 7 years for cropping systems due to the greater variability across crop rotations. This approach is supported by FANZ.
- 20 FANZ disagrees, however, with the document ‘Using OVERSEER[®] in Regulation’ where it implies that prohibited activity status may apply where there is a robust OVERSEER[®] version management mechanism.
- 21 While there is an uncertainty factor associated with nutrient loss estimates derived by OVERSEER, there is most likely a greater uncertainty in catchment modelling and even greater uncertainty in attenuation due to very little being known about attenuation factors. Therefore, the environmental impact of a mild variation in farm N loss estimates, relative to the uncertainties at catchment scale modelling, is likely to be small and uncertain.
- 22 For the farm systems, where the decision for permitted activity at farm scale is based on OVERSEER, the environmental risk associated with this uncertainty is small relative to the benefits of estimating farm system nutrient flows. However, that is not the case for decisions on prohibited activity status. Decisions being made on prohibited activity based on an OVERSEER value which might only be different by 1-2 kg N /ha/yr introduces potentially very significant economic and social costs, with very uncertain environmental benefits.
- 23 In saying that ‘Prohibited Activity’ status is inappropriate for a mild exceedance of the N loss limit, it might be considered appropriate for a gross exceedance (e.g. + 10 or 20 kg N/ha/yr above the modelled acceptable limit - but if written into the

¹ (page 39, Recommendation- resource consent conditions)

plan in this way, what signal would this send land managers about the N loss limits? FANZ considers a regulatory limit is useful, but discretion for mild exceedance of values based on modelled estimates is necessary where the potential social and economic consequences are significant and the potential environmental consequence is small and uncertain.

- 24 Using OVERSEER Nutrient Budget Model, or any other decision support tool, to determine prohibited activity status based on a mild exceedance of modelled N loss values, is in the opinion of the Fertiliser Association, an inappropriate use of the decision support tool.
- 25 FANZ supports a nationally consistent approach in the use of OVERSEER[®] with robust assessment of current experience of advisers producing N loss values for us in regulation.
- 26 FANZ supports that for use in regulation OVERSEER should only be used by, and outputs interpreted by a Certified Nutrient Management Adviser, under the Nutrient Management Adviser Certification Programme.

Concluding comment

- 27 Thank you for the opportunity to present this information and background to the FANZ submissions on Plan Change 10.



Greg Sneath
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The Fertiliser Association of New Zealand

6 March 2017