

**I MUA I TE KOOTI TAIAO
I ŌTAUTAHI ROHE**

IN THE MATTER of the Resource Management Act 1991
(the Act)

A N D

IN THE MATTER of appeals pursuant to clause 14 of the First
Schedule to the Act

BETWEEN **SOUTHLAND FISH AND GAME COUNCIL**
(ENV-2018-CHC-37)

**ROYAL FOREST AND BIRD PROTECTION
SOCIETY OF NEW ZEALAND**

(ENV-2018-CHC-50)

Appellants

A N D **SOUTHLAND REGIONAL COUNCIL**

Respondent

**‘WILL SAY’ STATEMENT OF ANTONY HUGH COLEBY ROBERTS
FOR RAVENSDOWN LIMITED – A SECTION 274 PARTY
29 OCTOBER 2021**

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ANTONY HUGH COLEBY ROBERTS will say:**Qualifications and experience**

1. I am employed by Ravensdown Limited (**Ravensdown**) as Chief Scientific Officer. I have worked in this role since February 2002. In my current role, I am responsible for managing agronomic research and development for Ravensdown, training approximately 70 Agri Managers and other staff in soils, fertilisers and pastoral agriculture, as well as working with many of our Corporate and other farming shareholders.
2. I have a Bachelor of Agricultural Science (1st Class Honours) and a Doctor of Philosophy in Soil Science, both from Massey University, Palmerston North. I am a Fellow of the New Zealand Soil Science Society and a member of the New Zealand Institute of Primary Industry Management and the New Zealand Grassland Association. I am a Certified Nutrient Management Advisor.
3. Prior to joining Ravensdown in 2002, I was a practicing agricultural scientist for 22 years working for the Ministry of Agriculture and Fisheries, Agricultural Research Division.
4. I am the senior or a contributing author of 65 refereed journal articles or conference papers, and a further 70 scientific or extension conference papers. I have also authored chapters in 5 books, and 4 extension booklets. Over the past 39 years I have conducted many soil fertility experiments and had an active consultancy role, particularly with pastoral farmers throughout the country, on soil fertility management to maximise economic return, and more latterly to couple that with minimising off-farm impacts on the environment.

Pathways for contaminant losses from farm systems

5. I will provide an overview of the various pathways for contaminant (e.g., N, P, sediment, *E. coli*) losses from farm systems (e.g., groundwater, surface water, volatilisation). The overview will include reference to some of the tools available to identify these pathways and aid farmers looking to reduce their contaminant losses.
6. I will conclude that there are several pathways for the contaminants to be lost from farm systems into receiving water and that the size of the loss pathways will be dependent on a multitude of interrelated factors specific to both individual farm properties and their land managers.

4Rs of fertiliser application

7. 4R nutrient stewardship refers to the **Right** product being applied at the **Right** rate in the **Right** place at the **Right** time. This is an internationally recognised approach which underpins Good Management Practice (**GMP**) for fertiliser application.
8. I will provide an overview of the industry advice and quality assurance programmes (e.g., FertMark and SpreadMark) for fertiliser application and include reference to the tools currently used by the fertiliser industry to achieve GMP fertiliser application, with particular reference to grazed pastoral systems.
9. I will conclude that if the 4R approach and supporting advice and assurance schemes are all utilised in the application of the fertiliser nutrients N and P to grazed pastures, no more than 10% of total farm N and P losses will occur directly from applied fertiliser.

Linking Good Management Practice to water quality outcomes

10. I will discuss the implications of linking on-farm GMP to catchment level water quality outcomes and the challenges this presents to

achieving desired water quality outcomes in the accompanying timeframes.

11. I will conclude that while GMP applied on farm will assist outcomes in certain catchments, and that in some instances, more than GMP may be required over the long term.

Realities of changing land use

12. There is much talk of the need for some farming land uses to change to reduce environmental impacts. However, the practical realities and timeframes to achieve this are not well understood. I will provide my perspective on the feasibility or otherwise of this proposed solution.
13. I will conclude that successful change in land use to meet environmental objectives will be possible in some situations but require a complex analysis of a wide range of physical, biological, economic and social factors.

Overseer

14. I will reference the recent report 'The Government response to the findings of the Overseer peer review report' and discuss how Overseer can be better used as a tool to support on-farm decision making as farmers implement changes to reduce nutrient losses from the farm system.
15. I will also provide an update on the work that Overseer Limited is proposing to complete to address some of the matters raised in the Government report.
16. I will conclude that while the Overseer tool is imperfect and has limitations when used as part of a regulatory framework, it remains the only 'fit for purpose' farm system model available to assist

farmers in decision making around system change and the relative effect these changes have on N and P losses.

DATE: 29 October 2021

Dr Ants Roberts