My name is Personal and I am the Manager of Grafton Irrigation based in South Canterbury and North Otago. I have been managing irrigation companies for the last 20 years and a few years prior to that I was involved with Soil Conservation working for the Waikato Valley Authority in Taupo and the East Cape Catchment Board in Gisborne. I have a Bachelor of Agricultural Science Degree, a Certificate in Irrigation Design and I enjoy fishing! I am also a trustee of the South Canterbury Rural Support. So throughout my life I have had a lot of experience with fresh water.

I don’t think anyone can logically argue against protecting and improving New Zealand’s fresh water resources. However, I do take issue with some of the proposals in the policy document.

There seems to be a misunderstanding with the relationship between high nutrient levels and irrigation. It is true that greater intensification of agricultural and horticultural land use is often associated with irrigation, but it is not necessarily the irrigation that is causing the high nutrient loading. In fact, modern irrigation technologies such as Centre Pivots and Solid Set (such as G-Set) only apply the plants’ daily water requirement each day. In other words there is no leaching or runoff from this type of irrigation (and hence no extra nutrients getting into fresh water).

When Variable Rate Irrigation technology is installed to centre pivots, the amount of water that is applied is precisely controlled through each sprinkler. So any wet areas, streams or ephemeral watercourses can be excluded from receiving any water. Likewise Solid Set irrigation can be programmed to do the same thing. We therefore recommend that Centre Pivots and Solid Set irrigation (such as G-Set) be exempt from new irrigation requiring resource consent after June 2020.

The areas of the highest intensity irrigation in New Zealand are Canterbury and North Otago. These areas have some of the lowest extra nutrient loading compared to the Waikato, Taranaki and Southland that have little irrigation.

Nutrient loading is caused more by fertilizer application, dung and urine patches than by irrigation.

The technology also exists to inject N into existing irrigation (fertigation) applying small amounts of fertilizer on as needed basis. This reduces the opportunity of any leaching.
From reading the Policy documents it is unclear whether the 10 year moratorium on further irrigation and land use intensification applies to **converting from border dyke irrigation to spray irrigation**. When converting from border dykes to spray, less water is used and leaching and runoff are greatly reduced. It would make no sense to slow this transition with legislation.

With feedlots or winter grazing pads, effluent can be diluted and spread evenly over pasture using Centre Pivots or Solid Set irrigation with no (or very little) leaching or runoff.

Some thought needs to be given to the **vegetative cover inside the fenced off areas** next to waterways. I was recently on a farm where these areas were fenced off and the growth of grass and weeds had forced the stream to flow out over the surrounding paddocks before returning back into the stream. Ideally these areas need to be planted out in natives. I have previously seen exotic trees planted and harvested in these areas which resulted in a lot of sediment and slash in the channels during harvesting. However, sufficient time needs to be given for farmers to plant these areas to spread the expense. Some farms have a considerable number of streams, so some form of government subsidy could provide an incentive as well as helping with the cost. This concept was used back in the 1970’s and 1980’s when Catchment Boards administered a subsidy to plant up erosion prone land and riparian areas next to streams.

The proposed fresh water policy will have a **huge effect on the rural and national economy**. Farmer confidence is already at a low level with the banks taking a tougher stance on rural (particularly dairy) lending. Agricultural production will fall and spending will decrease which will have a huge effect on Agricultural support businesses such as Irrigation companies. We are already seeing a decrease in sales due to this lower confidence. If this lack of confidence continues there will be a large decrease in businesses supporting rural infrastructure.