

Vince Bidwell summary for CPW hearing 13 October 2009

1. The 30,000 ha of proposed CPW irrigation should be considered along with the 30,000 ha of existing irrigation in the CPW area because the effects of the latter are not yet fully developed.
2. The effect on nitrate contamination of groundwater from these recent and proposed changes in irrigated land use is to increase the thickness and extent of the contaminated groundwater plume, even if there is no significant change in the average nitrate concentration of soil drainage discharge from agricultural land use in the CPW area.
3. The existing plume of contaminated groundwater in Central Canterbury is associated with occurrences of nitrate concentration in groundwater that exceed the MAV for nitrate-nitrogen in drinking water. The ongoing development of the extent and thickness of the nitrate contaminated groundwater plume, from recent or proposed land use change, may result in an increase in these occurrences, but this is not conclusively proved.
4. There is a health risk to bottle fed infants that is the basis for the value of the MAV adopted as the drinking water standard. The current or future acceptability of this risk is not well defined. This risk can be mitigated by use of high quality water from a large community supply for the duration of the individual at risk. For other health risks ascribed to nitrate contamination of drinking water, the medical literature is inconclusive.
5. The full development of the nitrate groundwater plume, from recent and proposed irrigation, will result in an increase in nitrate concentration of surface waters, primarily because of the greater proportion of the groundwater body that it occupies. This change in proportions alters the mix of low nitrate water from the alpine rivers and land use discharge that contributes to each surface water body. The resulting nitrate concentrations are likely to become similar to other parts of the Canterbury Plains that have a long history of intensive agriculture.