

BEFORE THE HEARING COMMISSIONERS

IN THE MATTER OF the Resource Management Act 1991

AND

IN THE MATTER OF an application by Woldwide One (WW1) and Woldwide Two (WW2) Limited (reference number APP-20191052) for a resource consent to discharge dairy shed effluent from up to 1500 cows, and to discharge winter barn effluent from up to 1250 cows, discharge from the underpass and silage leachate; and associated land use and water take consents.

CONSENT AUTHORITY Environment Southland

Brief of Thomas John Scott on Behalf of the Southern District Health Board

- 1.0 My name is Thomas John Scott. I am a Health Protection Officer designated under the Health Act 1956. I am also the Team Leader of Healthy Environments at Public Health South. Public Health South is a department of the Southern District Health Board. I am appearing in my capacity as a Public Health advocate and not an expert witness.
- 2.0 Southern DHB has responsibility under the New Zealand Public Health and Disability Act 2000 to improve, promote and protect the health of people and communities. Additionally there is a responsibility to promote the reduction of adverse social and environmental effects on the health of people and communities. With 4,250 staff, we are located in the lower South Island (South of the Waitaki River) and deliver health services to a population of 335,990.
- 3.0 The Ministry of Health requires Public Health Services to reduce any potential health risks by means including submissions on any proposed plan changes to ensure matters of public health significance are considered by the local authority. In our opinion the applications by Woldwide One (WW1) and Woldwide Two (WW2) Limited have the potential to give rise to significant health effects both now and in the future.
- 4.0 Public Health South is active in formal advocacy and take advantage of articulating a public health view on proposals both at a Southern District Level and a National Level. For Resource Consents and Plan Changes our position is normally neutral - stating that our preference is to ensure that in the event consent is granted that public health issues are taken into account in the setting of conditions. We are not opposed to dairy farming per se but we are particularly concerned that where expansion is planned careful account is taken of the evidence, and should consent be granted, conditions are put in place that protect against any potential public health risks.
- 5.0 My verbal submission will give some of the Public Health context this application sits within and will hopefully be seen to qualify our written submission.
- 6.0 The groundwater zone that this application sits within is what we refer to as a "nitrate hotspot". Our reason for saying this is that using data given to us by Environment Southland a significant proportion of bores sampled in the vicinity of this application had nitrate levels that are indicative of significant contamination due to land use. We take the view that this could well be due to the shrinking and cracking

characteristics associated with the high permeability Braxton soil types that can be found in this Applicant's properties. These soils are prone to shrinking and cracking during drier months allowing nitrates and other contaminants to leach directly to underlying groundwater.¹ At the time of preparation of our submission we understood that Overseer® models do not apply well to this type of soil.² We note that these soil characteristics are similar to those seen in the recharge zone for the Havelock North water supply³

7.0 The Waimataku catchment that this application sits predominantly within discharges into coastal waters on Oreti Beach. It is noted the Oreti River is described as being in the worst 25% of rivers of its category for a number of key contaminants according to the LAWA⁴ website. While we recognise there is some (albeit limited) evidence of improvement in water quality, this does not detract from the fact we are talking about a severely degraded river system.

8.0 We recognise that this is a whole of catchment issue, as key findings in the quality of Coastal Waters Report for Southland indicate the current magnitude of land use across the region, including seawater off Oreti beach is now no longer nitrogen limited. This gives rise to an increased risk of Harmful Algal Blooms (HAB) that will give rise to health risks associated with the consumption of shellfish that may be harvested in the vicinity.

9.0 The latest 2019 six monthly report from Ministry for the Environment and Stats NZ - Aotearoa NZ reports on river and groundwater trends over NZ⁵. It includes modelled indicators of river "health" such as the macroinvertebrate community index or MCI (as well as *E coli* and Nitrate – N). For the lowland Southland area, the modelled median values for MCI 2013 – 17 suggests that the river water quality is generally in a fair condition. For the modelling based on 2008 – 2017 the trend suggests that in general river water quality is either indeterminate or very likely to be worsening.

10.0 Similarly the trend indicates that for the period 2008 – 2017 *E.coli* levels are worsening in lowland Southland in general and very likely worsening in the upper reaches within Southland. The trends show moderate to high levels (based on median) in the lower reaches of these rivers (exceed 361.2 *E coli* MPN/100ml).

11.0 *E coli* provides a good indication of the risk associated with contracting *Campylobacter* as well as serving as an indicator for other enteric diseases. A report on this *E.coli* and disease risk recently completed by ESR indicated that *E.coli* derived from cattle poses a greater relative risk to human health than say deer, ducks or raw sewage⁶.

12.0 While this section relates to water quality in rivers in lowland Southland, in general it is clear that agricultural intensification is contributing significantly to degraded environments in lowland Southland.

¹ Environment Southland. Central Plains Technical Information. *Water and Land 2020 & Beyond*

² Aqualink (2017) Assessment of Environmental Effects prepared for Woldwide One Ltd

³ Havelock North enquiry proceedings 2017 paragraph 82 at

[https://www.dia.govt.nz/diawebsite.nsf/Files/Report-Havelock-North-Water-Inquiry-Stage-2/\\$file/Report-Havelock-North-Water-Inquiry-Stage-2.pdf](https://www.dia.govt.nz/diawebsite.nsf/Files/Report-Havelock-North-Water-Inquiry-Stage-2/$file/Report-Havelock-North-Water-Inquiry-Stage-2.pdf)

⁴ <https://www.lawa.org.nz/explore-data/southland-region/river-quality/oreti-river/bog-burn-ds-hundred-line-road/>

⁵ <https://www.mfe.govt.nz/publications/environmental-reporting/environment-aotearoa-2019>

⁶ Wood, Horn and Moriarty; Institute of Environmental Science Research Ltd (2018): A report prepared for Dairy NZ; *Faecal Pollution Source Risks*

- 13.0 More cattle will produce more effluent and higher loads of micro-organisms including pathogenic organisms such as Campylobacter, Cryptosporidium, Giardia, and Salmonella. These leach into the ground with irrigation and move into the aquifers. Drinking water taken from ground bores can no longer be considered secure and therefore contribute to the risk of outbreaks of disease. The Havelock North outbreak of campylobacter in August 2015 is an example of widespread illness from a water reticulation system. In Southland we can be spared this risk as generally do not use bore water for Community Water supplies and given that the groundwater is used in individual in household supplies, our ability to detect outbreaks of the type seen in Havelock North is compromised. It should be noted that several rural schools in Central Southland draw bore water for their supply.
- 14.0 This can be backed up by the findings from the stage 2 inquiry were that ‘...the vast majority of New Zealand’s waterborne disease burden arises not from significant outbreak events... but from underlying sporadic waterborne illness that is never linked to a particular outbreak. It is estimated that up to 100,000 people become ill in this way from consuming drinking water every year.’⁷
- 15.0 Local notifiable disease surveillance data shows high rates of these infections in the Southern district compared to NZ as a whole. It is also noted that the prevalence of these diseases is also highest in area described as “highly rural”⁸. It comes as no surprise therefore that along with other rural districts in the Southern Health District, the Southland District has high rates of these diseases. As mentioned before these figures are underestimated as many cases go undetected for a variety of reasons.
- 16.0 Public Health submits that an increase in cows in this catchment will add pathogens to the ecosystem that in turn will add to the increasing burden of illness. We also know for example that the incidence of many of these enteric diseases peaks in the spring and early summer when direct contact with livestock is higher than say the winter.
- 17.0 A lot of what we have submitted is likely to be subsequently mandated by the Ministry for the Environment’s National Action for Healthy Waterways. The document makes specific reference where the health of waterways have been impacted through intensive agriculture and Southland is identified as a particular geographical area of interest. The plan currently proposes setting environmental bottom lines (National Environmental Standards) for attributes such as nitrates. It also makes the assumption that those undertakings that produce contaminants will take steps to reduce them over time.
- 18.0 We would strongly urge that the Commissioners not only take into account those matters that we have raised when making their decision, but they also look to the likely controls that will be put in place in future in setting any performance standards.

⁷ Havelock North enquiry proceedings 2017 paragraph 82 at [https://www.dia.govt.nz/diawebsite.nsf/Files/Report-Havelock-North-Water-Inquiry-Stage-2/\\$file/Report-Havelock-North-Water-Inquiry-Stage-2.pdf](https://www.dia.govt.nz/diawebsite.nsf/Files/Report-Havelock-North-Water-Inquiry-Stage-2/$file/Report-Havelock-North-Water-Inquiry-Stage-2.pdf)

⁸ Sourced from http://archive.stats.govt.nz/Census/2001-census-data.aspx?_gac=1.61655774.1569795872.Cj0KCOjwrMHsBRCIARIsAFgSeI1JVj7GR81MOAKw9FZyKBxczV7akNFJle b HDtHAZPagAoQlpXbj74aAnJ8EALw wcb