

**12 July 2019**

To: Otago Regional Council

**Name of submitters:** Don Robertson for Guardians of Lake Wanaka, Guardians of Lake Hawea, Upper Clutha Lakes Trust Board.

**Applicant's Name:** Queenstown Lakes District Council.

**Application Number:** RM19.051.01

**Location:** Various locations throughout the Queenstown Lakes district

**Purpose:** To discharge untreated wastewater to various freshwater receiving environments, and onto land in circumstances where it may enter freshwater due to blockages, breakages, system failures, extreme storm events, and capacity exceedance in the network that cause overflows to the wastewater infrastructure throughout the Queenstown Lakes district.

We are not trade competitors for the purposes of section 308B of the Resource Management Act 1991.

Our Submission relates to all of the application.

**Background:**

Three local groups with concerns for water quality have jointly prepared this submission – the Guardians of Lake Wanaka, the Guardians of Lake Hawea and the Upper Clutha Lakes Trust Board.

The Guardians of Lake Wanaka are appointed by the Minister of Conservation and requirements under the Lake Wanaka Preservation Act (1973) include a responsibility to maintain or improve quality of water in the lake.

The Guardians of Lake Hawea are a sub-committee of the Hawea Community Association Inc. The Guardians of Lake Hawea aim to ensure that Lake Hawea, its surrounds, its water quality and its biodiversity and ecosystems are maintained, and managed sustainably and safely for the benefit of all.

The Upper Clutha Lakes Trust deed includes the following aim: to work with the Upper Clutha communities, relevant organisations and public agencies to safeguard and where possible enhance the health and water quality of Upper Clutha Lakes and their catchment water sources upstream of the confluence of the Luggate Creek with the Clutha River.

Given the scale and significance of this application we are concerned at the short timeframe available for the public to respond to so much material.

## Submission:

Our submission is in opposition to the application for the following reasons.

1. We believe that the QLDC application RM19.051.01 will, if approved as submitted, carry significant risks for water quality with consequent human health risks as well as potential for environmental/ecosystem impacts which could be more than minor. The suggestions we make here will be relevant for the main lakes of the Queenstown Lakes District: Lakes Wakatipu, Wanaka, Hawea and Hayes. Recent events around a major sewage spill into Lake Taupo are a timely reminder of the damage that can occur. Time constraints prevent us from considering the impacts of untreated sewage spillage on streams, rivers or aquifers although impacts are likely to be similar and at times potentially more significant in terms of impact than for spillages into lakes.
2. Application RM19.051.01 states that QLDC is “applying for resource consent from Otago Regional Council (ORC) to discharge untreated wastewater overflows from its network to freshwater receiving environments, or onto land, in circumstances where it may enter freshwater, as a result of blockages, breakages, system failures, extreme storm events, and capacity exceedance in the network”. We note that seismic activity and wild fires are omitted from the application.
3. While we accept that there is inevitability for each of these causes of wastewater overflows, we would prefer to see an aspirational goal of zero wastewater overflows for subsets of the District networks. Over the last 4 years such events have resulted in a total of around 206 sewage spills from the 421 km QLDC drain network of which ~17 spills are reported to have flowed into water. For some of the more serious of these spills, QLDC has been fined by ORC because QLDC does not have a consent to spill sewage into water. Risks of spills are real. Of 47 pumping stations, ~17 are located in a position to allow sewage to flow into a lake, and of these, 11 are considered to have a “high” or “moderate to high” probability of causing wastewater to enter a lake. We consider this somewhat qualitative level of risk as unacceptable and urge ORC to require QLDC to develop robust solutions to reduce it significantly.
4. The application refers to this district wide consent application to authorise these wastewater overflows as the “Network Consent”. Whether or not this Network Consent is granted there will be spillage over time of untreated sewage / wastewater into freshwater environments across the district.
5. The application seeks a consent to spill for a term of 35 years. We oppose this length of consent and strongly suggest it should be for no more than 10 years and subject to review before being renewed. Ten years provides sufficient time to ensure that QLDC undertakes the proposed upgrades to infrastructure outlined in its 10 year plan. At the end of the 10 year period

- ORC should review the steps taken by QLDC to reduce the impact of spills, e.g. by improving processes that prevent/capture overflows.
6. In the ORC consent application form, Part B, Assessments of effects on the environment, two items (v) and (vi) are left blank when they should each have ticked the “yes” boxes.
  7. We feel that the Beca report glosses over many aspects of risks to water quality in the event of lakes or rivers receiving spillage or overflow of sewage. For example, on page 20 Version 4, the Beca report states: “*In the case of the large lakes, Wakatipu, Wanaka and Hāwea, the low levels of nutrients mean they are anticipated to be sensitive to wastewater discharges. However, these effects are not expected to adversely affect the overall health of the lakes and will be largely restricted to localised effects in the vicinity of the discharge. Following the notification of an overflow, the response process kicks in to remediate the breakage in the network, stop flow of discharge to the receiving environment, and to contain the area. The 2017/2018 median response times were 22 minutes with a key performance indicator of 60 mins and a median resolution time of 151 minutes with a key performance indicator of 240 minutes. Thus reducing the areas of the lakes subject to the overflow discharge and adverse effects.*”
  8. It is incorrect of Beca to assert that “...*these effects are not expected to adversely affect the overall health of the lakes and will be largely restricted to localised effects in the vicinity of the discharge.*” To act on this statement is likely to lead to bad decisions with potential for local environmental impact. The impact on a lake shore and nearby water quality and ecosystems will depend on the speed and direction of flow of water and mixing in the vicinity, on the weather conditions and the time taken by QLDC to respond. The quoted QLDC response times are unqualified and we can’t tell whether they include responses to more distant district localities such as Lake Hawea township or Kingston. Realistic target response times should be set for each of the areas likely to be impacted. The risk of contamination during flood events would probably be more significant than that from a breakage, especially if latter occurs well above lake/river level. If a leak site is covered with flood water, then response times are likely to be very protracted which would also put the quoted response times in some doubt for such extreme events.
  9. Furthermore, considering “*the overall health of the lakes*” makes no sense in this context because the localised impacts from sewage spillage will coincide with the areas close to townships, which are the most likely to be accessed by people. The characteristics of the entire water bodies, while important in a regional sense, are not the matter at issue in this discussion. Rather, it is the localised impacts at locations where people are likely to have contact with the water and where we may experience localised ecosystem impacts.
  10. Regarding the Lake Wanaka Preservation Act 1973, the Beca report claims (pages 28 and 30) that the QLDC consent application “*Through public engagement and proposed conditions, it is considered that the proposal is consistent with the purpose of the Act,*” and further states “*the proposal is*

*consistent with the Lake Wanaka Preservation Act in that it will maintain and as far as possible, improve the water quality in the lake through management of overflows.”* We disagree with these assertions in the Beca Report. Clearly the dumping of raw sewage into Lake Wanaka is **not** consistent with the requirements of the Lake Wanaka Preservation Act in that dumping raw sewage will certainly not “*maintain and..., improve the water quality in the lake*” as claimed in the Beca report. (The Guardians of Lake Wanaka are appointed by the Minister of Conservation to serve the Lake Wanaka Preservation Act).

11. Another weak but significant assertion by the Beca report relates to the Water Conservation (Kawarau) Order 1997 which includes protection of the water of Lake Wakatipu and the Kawarau river and tributaries. The Beca report states: “*Overall, the way in which wastewater overflows are responded to, as proposed in the suite of consent conditions will provide for both the preservation and protection of the identified water bodies. For this reason it is considered that the application will not be contrary to the purpose of this Order.*” We disagree with this unsubstantiated assertion and expect if granted, sewage spillage or deliberate release into the waters covered by the Water Conservation (Kawarau) Order would be in breach of the Order.
12. Concerning the National Policy Statement for Freshwater Management (NPSFM) the Beca report asserts that: “*the proposal will be consistent with the NPSFM through management of effects to the receiving environment. This is accomplished through the proposed suite of consent conditions and through involvement and engagement with iwi and hapu*”. We disagree with this assertion and do not regard it as credible. A revised version of the NPSFM is due out next year. Any consent conditions relating to NPSFM will need to take into account the new version.
13. The Ryder report (Table 8, page 33) includes a risk assessment associated with potential discharge points from QLDC wastewater infrastructure. In order to help ensure that any response to a spillage or release of sewage into lake water is managed with minimal impact we request that QLDC measure basic water properties in the vicinity of areas where the probability of waste water entering water is High and Moderately High. These measurements should include direction and speed of lake water flow, some index of mixing and background nutrient and E.coli levels under dry conditions and heavy rainfall. Another complexity in assessing hydrodynamics at potential spill localities is the response of local lake water flow to wind speed and direction. We also expect that QLDC would be required in high risk areas to make baseline measures of biodiversity indices (e.g. Macroinvertebrate Community Index, Submerged Plant Index). All such factors would need to be taken into account in minimising localised lake water contamination and determining how long it may take for conditions to return to safe levels for human or stock use and back to physical and biological baseline values. These issues should all be addressed by way of the conditions around any consent to spill.
14. Further, on the topic of public health (Beca report page 21 Version 4), the application states, based on the NIWA report (“Wastewater overflow

discharge consent - Queenstown Lakes District Council Microbial risk assessment" April 2019): "*Currently no data or modelling of dilution, dispersion or advection of discharges exist for freshwater lakes and rivers in the Queenstown Lakes District.*" This is a very important statement. It is the reason why the author was unable to complete any Quantitative Microbial Risk Assessments. It reinforces our concerns above. It emphasises the need for substantial baseline measurement to address this shortfall in the vicinity of all potential lake and some river/stream spillage sites.

15. On the subject of Public Health, the Beca report concludes that "*With the implementation of the proposed consent conditions including physical response processes, the public health assessment finds the risk to human health from occasional discharge of wastewater to be low to very low. Consequently, the adverse public health effects are considered to be no more than minor*".
16. The Beca report under-estimates and glosses over the public health advice provided by the NIWA report. We refer for example to the following statements from the NIWA report:
  - "*For lakes, use of a calibrated hydrodynamic model, able to represent the mixing, dilution and advection of contaminants within the lake will be required.*"
  - "*These results indicate a potential for significant health risk arising from the discharge of untreated sewage in the conditions assumed in each scenario.*"
  - "*We have reviewed the incident response plan of QLDC, and we consider that: 1. It is suitable as a high-level strategy document, but that considerable additional detail should be provided before it can be considered sufficiently robust*" (our underlining).
  - "*If QLDC implements the recommended response processes identified in Section 6 above then I consider the risk to human health arising from occasional discharge of wastewater from the sewer network to surface waters to be low to very low.*"
17. There are several significant points listed in section 6 of the NIWA report that are recommended for inclusion in the QLDC incident response plan. It is not clear from the Beca report that these points will or should be included in an amended incident response plan. Clearly the points in section 6 must be included in the QLDC incident response plan.
18. A further point of concern is that of cumulative environmental effects. One small incident of spillage may be "no more than minor" but the application seeks to legitimise numerous incidents. The receiving environment could conceivably suffer major impact from a series of minor spillage events. The Regional Council should consider the effects of possible discharges in their

entirety, not individually. Therefore we submit that the usual procedure of assessing individual events as minor should not have any place here.

### **Proposed Draft Conditions**

19. Throughout the Beca report there are multiple statements to the effect that if a *“suite of proposed consent conditions are implemented then a range environmental and public health risks will be “less than minor” or “no more than minor”*. We have considered QLDC’s suite of proposed draft conditions (pages 30-36 in the Beca report version 4) and make the following comments:

**QLDC Condition Number 1:** We agree in principle but it’s not clear if or how the key recommendations from reports listed in a – d will be operationalised by QLDC or revised over time as the infrastructure network expands. This condition requires some explanation to address this.

**QLDC Condition Number 2:** We agree – and we are pleased to see that this condition excludes wastewater discharges from wastewater treatment plants

**QLDC Condition Number 3:** We agree.

**QLDC Condition Number 4:** We agree.

**QLDC Condition Number 5:** We agree.

**QLDC Condition Number 6:** We disagree. The consent should be granted for no more than 10 years and should be reviewed before considering a continuation. There would be significant risks in proceeding without review due for example to the considerable uncertainty in QLDC’s response capability across a range of spillage scenarios and uncertainty due to the absence of baseline measurement of key environmental attributes.

**QLDC Condition Number 7:** We agree. This would be stronger if the proposed review is to be conducted by an independent engineering service familiar with global best practice in wastewater networks and in particular with managing risk in wastewater networks.

**QLDC Condition Number 8:** We agree. However the response should explicitly include the additions to the QLDC incident response plan proposed in section 6 of the NIWA report.

**QLDC Condition Number 9:** We agree and will support QLDC’s education and awareness initiatives.

**QLDC Condition Number 10:** We agree.

### **Submitters proposed additional new Conditions:**

20. The submitters, Guardians of Lake Wanaka, Guardians of Lake Hawea and the Upper Clutha Lakes Trust Board request that the following conditions are added to conditions 1-10 above.

- (a) For each site identified as having a High or Moderately High probability of wastewater entering water we request that QLDC measure baseline water properties in the vicinity. These measurements should include direction, speed and path or trajectory of lake water flow, some index of mixing and background nutrient and *E.coli* levels under dry conditions and heavy rainfall. An assessment of hydrodynamics at potential spill localities is important and should include response of local lake water flow to wind speed and direction. Baseline measures of invertebrate and submerged plant diversity / species mix should be measured. All such factors would need to be taken into account in minimising localised lake water contamination and determining how long it may take for conditions to return to safe levels for human and stock use. These issues should all be addressed by way of the conditions around any consent to spill to help ensure that any response to a spillage or release of sewage into lake water is managed with minimal impact.
- (b) The Beca letter to ORC dated 5 June 2019 advises that a further condition of consent is proposed to require QLDC to prepare one combined procedural document that includes both QLDC's current incident response processes and Dr Hudson's recommendations within 6 months of consent being granted. We agree with this condition and recommend that QLDC's procedural documentation include specific remediation plans for each site identified as having a High or Moderately High probability of wastewater entering water.
- (c) We note that earthquake and wildfire risks are not mentioned in the reports accompanying the consent application and request that these be considered in the preparation of QLDC's combined procedural document.
- (d) QLDC plans to spend \$105M between 2018 and 2028 on the wastewater network including pump stations, pipes and treatment plants. We do not wish to see any relaxation of progress due to consent being granted and request that QLDC be required to publicly report on actual vs planned expenditure over the 10 year period of the consent.
- (e) QLDC should formulate a control/mitigation strategy for each site with appropriate infrastructure being available should an overflow event occur.

### **Kai Tahu Cultural Values Missing?**

21. We note that the Beca report states Māori "cultural traditions have been recognised and provided for". This is not explicitly addressed in the Beca report or in the draft proposed conditions. However, on page 25 of the Beca report the following statement is included: "*it is acknowledged that throughout engagement mana whenua indicated their appreciation of the work undertaken thus far and were generally supportive of the management of overflows given they already occur and cannot be fully avoided in the future*". We believe that Kai Tahu authors of the Cultural Impact Statement should be given an opportunity to endorse our submission.

### **Decisions sought from the consent authority:**

22. The submitters seek the following from the consent authority:
- (a) Decline consent or

- (b) Grant with a much reduced term from 35 years to 10 years to ensure the necessary upgrades to infrastructure are undertaken in a timely manner to ensure there is capacity to prevent/capture overflows.
- (c) Grant with a condition to proceed only when a full engineering review has been completed with recommendations for any network changes to achieve global best practice, and those recommendations are scheduled to be implemented.
- (d) Grant with a set of conditions accepting our amendments as indicated to conditions 1 - 10 and our additional submitters conditions a-e above.
- (e) Grant with a set of conditions requiring upgrading and reporting to ORC on set milestones for progressing necessary upgrades and other measures to prevent/capture overflows.
- (f) We wish to be heard in support of our submission.
- (g) We wish to be kept in the loop with any reviewing/reporting/recommendations resulting from the above.

If others make a similar submission, we will consider presenting a joint case with them at the hearing.

We request pursuant to section 100A of the Act, that you delegate your functions, powers, and duties to hear and decide the application to one or more hearings commissioners who are not members of the local authority.

Signature on behalf of submitters



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