



RUAPEHU DISTRICT COUNCIL

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28 March 2022

To: Taumata Arowai
Level 2/10
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Subject: Taumata Arowai Consultation

Submission from: Ruapehu District Council
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- The Ruapehu District Council ("RDC") thanks Taumata Arowai for the opportunity to submit on this very important matter.
- RDC does not wish to speak in support of its submission.

The Ruapehu District ... where adventure begins!



1. ABOUT US

The Ruapehu District is a land-locked area covering 6,733km², with a usual resident population of 12,309 (Statistics NZ, Census 2018). The population is projected to increase to 13,328 in the coming years. Ruapehu is one of New Zealand's largest districts by land area, however, has a relatively small and dispersed population base with one of the lowest population densities in the country (0.02 persons per hectare). The Ruapehu District is also a growing tourist destination and enjoys a significant and steadily increasing number of visitors each year.

Communities within the Ruapehu district rely on critical infrastructure and lifeline utilities such as water, wastewater, telecommunication, gas, electricity, road, rail and solid waste management. As the region continues to grow, the physical nature of many of the waterways, structures and flood protection works has altered. This has led to a decline in the state of physical health of the waterways in the region which also provide water for potable supply (Horizons Regional Council, 2019). Ruapehu relies largely on surface water sources for drinking water supply, stock watering, and irrigation.

2. PROPOSED CHANGES – CONSULTATION

Ruapehu District Council (RDC) applauds Taumata Arowai for initiating the necessary work to uplift the standard of water quality and management in New Zealand. We recognise that these changes need to be made to protect the livelihoods of our community and environment, however we have reservations about the financial cost these proposed changes will have on our district. As a small rural district council with a low rating base, we have limited capacity to comply with these new water standards.

Any imposed costs proposed by Taumata Arowai will push us over our debt affordability limit. At the time of writing this submission, the details of the Three Waters reform are still largely unknown and therefore, it is unclear whether the new Three Waters entity will take on Councils water debts. RDC wishes to make it clear to Taumata Arowai that our ability to comply with these new water standards is restricted by our finances and in-house capacity and we urge Taumata Arowai to consider providing water service providers with viable options to assist water service providers in meeting these standards.

RDC asks that Taumata Arowai consider the Covid-19 effects on supply chain delays and work force availability, along with the legislation and standards, in its compliance assessments. It is acknowledged that indications have been made by Taumata Arowai, and that these indications are not legislative requirements with set standards providing certainty that the financial commitment are against the best decision options.

3. TECHNICAL FEEDBACK

3.1 DRINKING WATER STANDARDS

RDC recommends that Taumata Arowai provides water service providers around the country with a 'Best Practice Guide' on the Laboratory Standard method for testing each new Minimum/Maximum Allowable Value (MAV). This would provide us with clear outcomes to target.



Indicator parameters within the pesticide list for MAV are often used to assess if further detailed sampling is required in other consents. Use of indicator parameters could free up laboratory resources.

The MAV and raw water sampling appear as the main focus to assess source water quality as appropriate for Drinking Water Supply. E.g. Boron values can be high around Mt Ruapehu. The source water is only Barrier 1, and the raw water source informs the treatment train required to deliver potable drinking water. The MAV assessment after treatment is more important to ensure that water delivered in the reticulation system is within health guidelines to protect public health when consumed.

Monitoring the treated water process is more important than continually monitoring raw water, which varies with river flow, rainfall and catchment activities. Table 14 is dedicated to weekly monitoring of raw water, but is not reflective of the water being consumed.

Raw water monitoring across all parameters and flows is an environmental function and should be undertaken by Regional Council. It is a Regional Council function to inform on the natural environmental health of the river and if it is safe to swim or drink in a raw form. This provides the raw water catchment characteristics, which is published into LAWA National Environmental Standards – Drinking Water. There appears to be a blurring of the Councils' functions when there is such intense raw water monitoring being required at Barrier 1. Treatment operators should use this data and additional data relevant to the intake point, to help determine the treatment train requirements from the environment. That is where they have control over the water quality characteristics being produced.

In attempting to align the National Environmental Standards for Drinking Water there is the potential that Regional Council may use MAV values as a test to grant abstraction consents. This is not the intent of MAV values, which are indicators of the risk and treatment required. Currently there is a high risk that surface waters will be seen as inappropriate water sources, without considering that water from bores are tapping into "underground rivers". Mt Ruapehu influences both surface and subsurface waters, regardless of depth.

3.2 DRAFT DRINKING WATER QUALITY ASSURANCE RULES

Please note the bullet point numbers below reference the bullet point numbers in the [‘DRAFT Drinking Water Quality Assurance Rules’](#) document. The comments below speak directly to each point, as seen in the original document.

4.4 ‘Varying Population Size Drinking Water Supplies’

- “Varying population” does not have a method to assess if the population has changed greater than the base population for a period of more than one day. Monitoring population movement on a daily or weekly basis is not practical. A better trigger method is required e.g., where the average treated water volume of population consumption has increased above X % for a period greater than XX %, excluding industrial and rural water from the previous quarter, then the population will move into the next category e.g. > 500 people.



Monitoring

- Ongoing weekly inspections between “October and May”, of an area around a surface water, taken for the presence of benthic cyanobacterial mats and or planktonic cyanobacteria growth, has no trigger value or methodology. During summer there will always be some present as they are part of the natural ecosystem. The question is what risk does this pose to public health? There could be a simple visual table with photos and a matrix to provide an assessment method. Cyanobacteria is naturally found in surface water bodies. It is the volume that should trigger further investigation.
- In S1.4, when does the visual assessment trigger sampling by chemical analysis to assess the potential risk? Alternatively, if the water take is not inspected weekly or within that week, due to a variety of reasons including health and safety risks, then the raw water is sampled at the plant and sent for chemical analysis during this week/period. Again, it is important to achieve the outcome that the treatment process has removed the contaminate to appropriate health guidelines.
- E. coli and total coliforms requirements in the water standards have not changed to allow the flexibility of adding presence absence testing as an option after treatment. Presence absence testing is instant and can be used to mitigate the risk of human error that can result in data loss e.g., courier failure, laboratory sample loss, etc. Presence/absence testing where the supply is small and resources are constrained could be used to escalate resources for monitoring where risk is evident.
- Total coliforms do not have any associated limits. Does Taumata Arowai see the need to continue with this testing in the legislation?

9. Community Drinking Water Stations/Water Carrier Supplies

- The data storage of a multitude of data and the use of excel spreadsheet limitation also needs to be explored. SCADA storage and retrieval over time has some technical issues as the data volume increases. What software is required to store this information? Is this to be uniform across platforms? Note, the biggest issue with data retrieval in time-based systems is the loss of sequencing. SCADA systems are very flexible and generally built and implemented to the level of management appropriate for the treatment system. A known set standardised system to transition to over time is important if standardised reporting is a goal across New Zealand e.g. Daylight Saving Time or New Zealand Standard time.
- Continuous monitoring of parameters is one of the best methods of assessing if the plant process is performing within parameters. Minute data collection losses due to technology failure should be considered against other parameter measurements being made at the time, and the volume of water being affected, to build the risk profile. For example, chlorination being achieved at the plant is designed to kill bacteria both within the reservoir and the distribution network. So, the loss of one minute data point on turbidity is not resulting in a compromised treatment system.



- Table 5 (T3) - the UV disinfection rules combined with the colour test are very restrictive and non-compliances occur, but the desired outcome is still achieved. UVT transmittance/intensity method is a theoretical number which is not always met and the colour of problem bacteria is not always visible to the human eye. For example, no E. coli has been found in the National Park Water Supply, which has colour exceedance; so, the test is not indicative of the risk that UV treatment is not being achieved and E. coli is entering the distribution line. RDC would like to see the test method changed to reflect the outcome of no E. coli but allowing for naturally occurring colour within the water column.

10. Compliance Rule Modules

10.3 Treatment rules

- The T1 rules relies on gravity flow ability into a tank – this will not be possible in all circumstances.

10.4 Distribution System Rules

With regards to the following requirement: *'A backflow prevention device must be fitted... where there is a high or moderate risk of backflow'*; the Building Code and the previous drinking water classification were not aligned in this respect. This inconsistency in classification needs to be resolved to provide clarity to Drinking Water Supply Planning.

10.10 D3.6-Backflow Protection Rules

- The following statement: *'Access to a water network... where it is reasonably necessary to access the network for the operation of the drinking water supply'*, excludes the reticulation drinking water being used for purposes other than fire flow or other emergency via a standpipe. This means that access is not permitted for activities such as washing of footpaths, watering hanging baskets etc. RDC's infrastructure maintenance has been set around the availability of reticulation water for other purposes, such as hygiene of the streets and wellbeing through beautification. Long term goals may be to use alternative options, but this will take years. Planning for greenspace development does provide for some of these opportunities moving forward.

10.10.2 Facilities Operation, Maintenance and Disinfection Rules

- These regulations will impose future costs on the management of our water systems. Operational costs significantly affect community health and wellbeing as affordability is one of the greatest struggles of small populations with high deviation indexes. There is still no certainty that the associated debt will be moved to a separate entity.



3.3 KEY CRITERIA FOR THE USE OF THE DRINKING WATER ACCEPTABLE SOLUTIONS FOR ROOF WATER SUPPLIES

- RDC have had some difficulties with private water supplies not wishing to join available networks, which provided a higher standard of treatment but not “perceived wholesome values”. Is there guidance on how this compliance is resolved?
- The aesthetic values appear to be set below the treatment standards. This is particularly prevalent for chlorine and will drive unnecessary angst within the community. While the rules state that this should not over-ride drinking water health, it is simply an argument that Councils do not need to debate if values are set in line with treatment values.
- The definition of source water as rainwater is inconsistent with NES-DW, which appears to exclude rainwater.
- Clarification of the drinking water use criteria: “...share the same roof water source” could be interpreted to mean a single roof. But the actual source is rainwater which may be captured off multiple roofs into storage tanks before treatment. Increasing roof area capture will be important during dry climatic conditions. More clarity as to how to interpret this rule may be useful.

3.4 DISCUSSION DOCUMENT- DRINKING WATER NETWORK ENVIRONMENTAL PERFORMANCE

- How is the performance management of drinking water coverage quantified? (Page 12).
- Water New Zealand’s National Performance Review measures do not totally align with the DIA KPI measures. Please note, DIA measures are also legislatively imposed on Councils. Will DIA measures be repealed when Taumata Arowai measurements commence, or will water supplies be again moving down the tranche of reporting to different Government Masters?
- **Fault attendance and resolution** - Will the criteria for fault attendance be changed or maintained against the current criteria administered by DIA? Will Taumata Arowai take over the auditing of this criterial?
- Drinking water treatment byproduct - currently we discharge backflow into a backflow pond onsite. The sludge is pumped into the wastewater treatment system and the surface water can be decanted to the receiving environment under resource consent. We would like to know, is this still an acceptable solution?
- The concept that safe drinking water is available to all is contradictory when networks operated by universities, hospitals and other large institutions are excluded on the basis that they are not operated by a government department. These institutions have the same risk of exposing a significant population. Water borne outbreaks have largely been linked to private and educational institutions. Given Hospitals are first responders to any health



emergency it would be assumed that they would have the highest response requirements. As education institutions feed the mind and body, they should also be meeting drinking water standards.

- **Asset Conditions** - What criteria will be used to assess asset conditions? If metadata is to be made universal a significant lead in time will be required.
- **Water Pressure** - At the present time, there is no requirement to provide a standard water pressure to customers, if Taumata Arowai was to introduce a standard, RDC will struggle with meeting those standards because our water systems are gravity fed. What is the new criteria for water pressure, and what is it based on?
- **Efficient consumer use of water** - This is difficult to quantify because we do not have a metered network and we also provide farms with potable water for such activities as milking sheds and stock drinking. Rural water supply tanks are filled overnight in our trickle feed supplies and using night monitoring assessments to measure water loss do not provide sensible data.
- **Alternate water use** - Water is supplied to commercial, industrial and rural users, there are no restrictions on how they use water or what the water should be used for. This is a change that will need to be managed and consideration needs to be given to the implementation of the change against the economic climate.
- **Energy efficiency** - what is Taumata Arowai basing this on, in terms of what they mean by 'energy efficiency', is there a standard in place or will there be a standard in place?

4. CONCLUSION

To conclude, RDC shares Taumata Arowai's commitment to ensure all communities have access to safe drinking water. However, our ability to meet these new water regulations is restricted by our capacity and financial resources. We recommend that Taumata Arowai provide options that can assist us in meeting these new water standards.

RDC would also like to put forward the idea for Taumata Arowai to work alongside the Ministry of Environment with regards to protecting drinking water sources to avoid confusion. Also, to look at the Key Performance Indicators set by DIA and the need for these measures.

