

# **Taumata Arowai**

## **Drinking Water Standards and associated documents**

**28 March 2022**

For more information please contact:

Jane Murray

NMDHB Public Health Service

Email: [jane.murray@nmdhb.govt.nz](mailto:jane.murray@nmdhb.govt.nz)

Phone: (022) 102 9798

## **Submitter details**

- Nelson Marlborough Health (Nelson Marlborough District Health Board) (NMH) is a key organisation involved in the health and wellbeing of the people within Te Tau Ihu. NMH appreciates the opportunity to comment from a public health perspective on the Taumata Arowai's consultation on Drinking Water Standards and associated documents
- NMH makes this submission in recognition of its responsibilities to improve, promote and protect the health of people and communities under the New Zealand Public Health and Disability Act 2000 and the Health Act 1956.
- This submission sets out particular matters of interest and concern to NMH.

## **General Comments**

- NMH staff have more than 20 years' experience working with non-council community suppliers in the 25-500 population bracket. These suppliers tend to be run by volunteer committees, mostly retirees, who may have some degree of mechanical, technical or water industry experience.
- Several committees struggle to get representation from their small number of permanent residents. A number have approached the Marlborough District Council asking them to run their plants or take them over entirely. The Councils have an obligation under the Health Act 1956, and Drinking Water Standards for NZ 2005 (revised 2018) to consider this.
- The proposals here under the Water Services Act 2021 and associated documents, do not simplify things for the smaller population bands, particularly communities in the 50-500 groups. Treatment options are limited, monitoring of source, treatment and distribution zone are onerous and expensive for a limited rate-payer base.
- Remote communities often do not have power supply near water sources to support treatment systems such as UV, nor reliable internet functions to enable online recording and reporting.
- Residual treatment systems require on-going attention and maintenance that add to the challenges faced by the volunteers.
- Proposed rules for planned events already have controls applied under Food Licences and the Sale of Liquor Act. The proposed rules in clause 10.12 and charging regimes may act as a disincentive to event managers.

- Water conservation, alternative water use (greywater recycling) and future treatment systems (desalination) should be part of the Taumata Arowai's long term strategy.

### **General Recommendations:**

- That the criteria for the population band for less than 50 people be abolished, or at least reviewed for its practicable use.
- That the criteria for G+S1+T1+D1, with amendments suggested in this submission, be applied to the 50-500 population bands.
- That the criteria for G+S2+T2+D2, with amendments suggested in this submission, be applied to a new 500-5,000 population band.
- That the criteria for G+S3+T3+D3, with amendments suggested in this submission, be applied to a new 5,000+ population band.

## **Drinking Water Standards Document**

### **The Standards (Page 1, Paragraph 2)**

This paragraph states that "*The Standards apply to all drinking water supplies...*". This is incorrect as the Standards relate specifically to reticulated drinking water supplies

**Recommendation:** Amend the wording "The Standards apply to reticulated drinking water supplies..."

### **The Standards (Page 1, Paragraph 3)**

This paragraph states that "Monitoring requirements and other compliance criteria are contained in operational rules produced by Taumata Arowai", however as there is no current document titled "Operational Rules", the Standards should specifically state the correct title of the documents.

**Recommendation:** that specific name of the guiding documents are stated e. g. drinking water quality assurance rules.

### **Table 1: MAVs for Microbiological Determinands (Page 2)**

*"Note 1. These are maximum acceptable values for regulatory purposes. They do not represent a dose/response relationship that can be used as the basis for determining acceptable concentrations of pathogens in drinking water."*

NMH supports this statement as this indicates an important culture shift that the "number" is not the prime target in risk management.

**Recommendation:** further explanation may be needed to assist the understanding of volunteer, community run suppliers, and smaller schemes yet to register.

### **Table 2 MAVs for Inorganic Determinands (Page 2)**

*Chlorite: Disinfection must never be compromised. DBP*

The table contains the acronym DBP but does not define the term.

**Recommendation:** That the acronym DBP is explained in the footnotes.

### **Table 3: MAVs for Organic Determinands (Page 3)**

Given NMH's local concern over the historic use of firefighting foam at RNZAF Base Woodbourne, it is pleasing to see the interim guidelines for PFOA and PFOS made into MAVs.

## **Drinking Water Quality Assurance Rules Document**

### **Introduction (Page 5, paragraph 2)**

*"The Rules cover water quality operational requirements from source water abstraction to the point of supply to a consumer (not the consumer's tap)".*

NMH disagrees with the definition listed above as most people will assume the water quality operational requirements would include domestic household's tap water. If the supplier obligation is only to the boundary of the property then the document should explicitly state that.

**Recommendation:** Amend the wording as follows: *The Rules cover water quality operational requirements from source water abstraction to the point of supply to a consumer, typically the boundary to by not the consumer's tap*.

*"The Rules do not set quality requirements for bottled water or water used for industrial or agricultural purposes."*

This statement requires further clarification as buildings with industrial or agricultural purpose require potable water.

**Recommendation:** Amend the wording as follows *The Rules do not set quality requirements for bottled water or water used for industrial or agricultural processes*.

### **1.3 Water Supply categories, 5. Planned Event Temporary Drinking Water Supplies (Page 7)**

*"Planned temporary events do not meet the definition of a drinking water supply under the Water Services Act 2021."*

Most large-scale events have liquor or food licenses that cover the provision of potable water. NMH recommends that these provisions continue to be used rather than create additional work under the Water Services Act.

**Recommendation:** Provide event planners with a simple risk assessment template to submit to Council (as used by public health units previously). This enables the Council and event planners to control the risks without the need for additional processes and extra fees.

### **1.4 Structure of the Rules, Table 2, 1. On Demand (Pages 9-10)**

*On Demand. d) Varying Population Size G + S2 + T2 + D23*

*2. Trickle Feed Water Supplies. Any population size G + S2 + T2 + D2*

These categories also require extra monitoring from chapters 4.4 & 5.

**Recommendation:** Amend wording to *On Demand. d) Varying Population Size G + S2 + T2 + D23 +E1*

*2. Trickle Feed Water Supplies. Any population size G + S2 + T2 + D2 +F1*

### **2. Application of the Rule Modules (Page 11 paragraph 2 )**

*"Any water supplier can elect to demonstrate compliance with a higher level of source, treatment or distribution rules if they choose"*

It is not clear at what point water suppliers can elect to do this, or for how long, or how frequently.

**Recommendation:** that the conditions for the flexibility to elect a change are specified.

### **10 Compliance Rule Modules, 10.1 General Rules (Page 26)**

*"G.8 Continuous on-line monitoring equipment used to demonstrate compliance with any rule must be: • Calibrated in accordance with the instrument manufacturer's specified procedures and frequency or monthly whichever is*

*more frequent. Have calibration verified in accordance with the instrument manufacturers specified procedures weekly."*

From NMH experience it is noted that some older on-line devices do not have secondary standards to verify against.

## **10.2- 10.6 Section Headers (Pages 28-36)**

For clarity, it would help to have a reminder of the population bands these relate to.

**Recommendation:** put the population bands in brackets after the Headings e.g.

S1 Source Water Rules (<50 population)

### **10.2 S1 Source Water Rules (Pages 28)**

*"S1.4 Between October and May, the water and area within 50 metres to a surface water intake must be visually inspected each month for the presence of benthic cyanobacteria mats and planktonic cyanobacterial growth. If there is evidence of cyanobacterial growth the abstracted water must be tested for cyanotoxins or abstraction of water must stop"*

It is not clear how much evidence triggers the need for testing e.g. one stone, a patch of xyzm<sup>2</sup>, a percentage of coverage.

**Recommendation:** That the wording is changed as follows *If there is any evidence of cyanobacterial growth (such as.....) the abstracted water...*

### **10.4 D1 Distribution rules (Pages 31)**

*"D1.2 A backflow prevention device must be fitted at any place in the distribution system where there is a high or moderate risk of backflow"*

The degree of risk is not clear.

**Recommendation:** that low, moderate and high risk of backflow are further defined

### **10.5 S2. Source water rules (Page 32) (and 10.9.4 Cyanotoxin rules)**

*S2.5 Water sources must be categorised as either low-risk, medium-risk or high-risk for the presence of cyanobacteria.*

*Drinking water suppliers must establish whether source waters are low-risk, medium-risk or high-risk for cyanotoxins.*

**Recommendation:** that low, moderate and high risk are further defined

### **10.5 S2. Source water rules (Page 32)**

*"S2.8 Samples must be collected at the source abstraction point or treatment plant (prior to treatment) for surface water or groundwater supplies and at the tank outlet for roof water supplies"*

This clause seems to be out of sync if it relates to the preceding cyanobacteria and cyanotoxin statements as it refers to an unlikely source of cyanobacteria (roof supplies).

**Recommendation:** that the reference to tank outlet for roof supplies is removed

### **10.6.6 Cyanotoxin rules & Table 12. T2 Treated Water Monitoring Requirements (Page 37)**

T2.17 requires a response to cyanotoxins in treated water, but Table 12 does not have them listed to monitor.

**Recommendation:** cyanotoxins are added to Table 12 .

### **10.8 S3 Source water rules, Class 1 (Page 43)**

*"Ground water sources that draw water from a depth of more than 30 metres (measured from the top of the screen) and via a sanitary bore head in which E. coli and total coliforms have not been detected over a period of three years (monthly samples with a maximum of 45 days between samples), are not required to provide a protozoa barrier"*

The characteristics of the soil, presence of confining layers, adjacent bores in/out of use, land-use practices e.g. fracking will all have an influence on the quality of water, not just the absence of E.coli.

**Recommendation:** if a deep bore classification is to be retained, provide more criteria for allowing no protozoa treatment.

### **10.8.3 Source water monitoring rules, Table 14 S3 Raw water monitoring parameters (Page 45)**

Tables to this point have described source water, not raw water

**Recommendation:** that raw water is defined

### **10.9.1 Bacterial rules T3 rules for water disinfected with UV (Pages 46)**

*"T3.17 Turbidity does not exceed 5.0 NTU for the duration of any consecutive 15-minute period".*

The 5.0 NTU seems excessively high, given that the likes of cartridge filters must not exceed 1.0 NTU for the similar 15 minute period (see T3.67)

**Recommendation:** the reference to 5.0 NTU is reviewed

### **10.9.2 Protozoa rules, table 25. T3 Requirements for Cartridge Filtration (Pages 64)**

*"The cartridge supplier's certification is acceptable provided a reputable inspection body has performed the testing, the tests are made on filter units"*

**Recommendation:** The term "reputable inspection body" needs to be defined

### **10.9.3 Chemical rules, Table 30. T3 treatment Chemical Determinand Minimum sampling frequencies (Page 71)**

This table shows weekly sampling required for fluoride, which conflicts with T3.89 which says continuous monitoring.

**Recommendation:** Sampling frequencies for fluoride must be consistent

### **10.10.1 Backflow Protection Rules (Page 74)**

*"D3.3 Where backflow requirements at customer premises are deemed inadequate, the water supplier must notify the local authority with details of the situation and risk...."*

NMH notes that rules are not clear about what needs to occur if the water supplier is the local authority

**Recommendation:** Further clarification is needed regarding who a local authority water supplier needs to reports backflow risk to.

### **10.10.2 Facilities Operation, Maintenance and Disinfection rules (Page 75)**

*"D3.18 Following full or partial draining of storage facilities for maintenance and after completion of disinfection procedures, storage facilities must be refilled"*



*with potable water and tested for E. coli, total coliforms and disinfectant residual to ensure there is no contamination.”*

If repairs have been carried out, there may be need to test for other residues e.g. solvents from linings

**Recommendation:** Reference to repair residues that might need testing is included

### **10.11 Water Carrier Service Rules (Page 82)**

*“WC.4 The operator of any vehicle used to transport water must ensure all tanks, and the equipment used for loading or unloading water, must only be used for drinking water”*

While this might be the ideal, the Christchurch earthquakes showed the need for tankers used for food grade products and non-potable uses e.g. milk, road works dust suppression (with adequate cleaning & disinfection).

**Recommendation:** The need for dedicated tankers for potable water, or allow exemptions, with conditions for multiple use is reviewed .

*“WC.7 The carrier operator must ensure there is backflow prevention or an adequate air gap in place when discharging drinking water from the carrier’s tank.”*

**Recommendation:** Amend the wording “...air gap in place when filling and discharging drinking water.”

### **10.12 PTE Planned temporary event rules (Page 84)**

If an event uses a reticulated drinking water supply, it will be adequately covered under proposals outlined in the Quality Assurance Rules.

If an event uses a non-reticulated supply it can be covered under existing controls e.g. Food legislation, Sale of Liquor Act, Building Act.

**Recommendation:** Planned events from the drinking water quality assurance rules are removed, and if needed, make reference to controls under existing legislation.

## **Drinking Water Aesthetic Values Document**

NMH supports the approach taken to ensure that water is acceptable to a reasonable consumer. However the descriptors suggest differing levels of favour e.g. not objectionable to the majority; acceptable to most consumers.

We acknowledge that should water be aesthetically unacceptable then people may seek water from other, possibly unsafe, sources.

## **Drinking Water Acceptable Solution for Roof Water Supplies Document**

NMH supports the key criteria for the use of *Drinking water acceptable solution for roof water supplies* where this solution can only be used where a networked community supply is not available to the dwellings and there are no other drinking water supplies connected; and that the supply must have a compliant treatment system.

The maximum number (500) may need to be checked against Council District or Regional Plans for subdivision.

Similarly the proposed storage capacity (96 hours, or 4 days) may already be dictated in council plans. The minimum storage amount should be location dependant. East coast areas of NZ are predicted to get drier climate, and may need more storage. West coast areas, predicted to be wetter, may need less.

## **Drinking Water Acceptable Solution for Spring and Bore Drinking Water Supplies Document**

As noted earlier some remote locations do not have access to power supply that enables a UV treatment system.

By only permitting cartridge filters and UV treatment that limits the use of the alternative solutions for those schemes.

Compliance with either the acceptable solution or Water Quality Rules will require support to suppliers e.g. education, training and resources (templates).

### **6.1. Requirements before the drinking water acceptable solution can be Adopted (Page 6)**

*6.1 Source water testing must include Turbidity • Must not exceed 1NTU at any time.*

This conflicts with section 8 of this document (8 Monitoring SB2) where a level less than 20 NTU is required. It is also different to the NTU given in Table 12 of the Water Quality Rules for T2 treatment systems (for similar population bands).

**Recommendation:** the turbidity requirements for consistency across and within documents are reviewed.

## 6.2 Bore or Spring requirements (Page 7)

*"Springs and bores must not provide water of variable quality, particularly with regard to pH and turbidity"*

NMH notes that pH is not in the source water testing list.

**Recommendation:** The test list and comments need to be aligned

*"Springs and bores must not be located within 50 metres of..."*

The list includes sites or processes that may still influence water quality due to soil characteristics when outside the 50m separation distance

**Recommendation:** Amend the wording "Springs and bores must not be located within 50 metres of, or influenced by...

## 6.3 Treatment System Requirements

*"Cartridge filtration must include five micron or less nominal pore size"*

NMH notes that for the cartridge filtration under the similar population band from 10.6.2, T2.5, the pore size is absolute, not nominal

**Recommendation:** Ensure that the criteria are applied consistently

## 7.3 Inspection procedures (Page 9)

*"backflow prevention devices (including air gaps) are in place and operating effectively"*

It is unclear from the consultation document how these will be checked. In addition it may be that non-testable backflow devices are used and what should occur in that situation. It is also feasible that access to private property by the supplier to check air-gaps may not be permitted (or given). It would be beneficial to have additional guidance that could cover these scenarios.

**Recommendation:** Guidance on backflow device checks is provided

## **Drinking Water Acceptable Solution for Rural Agricultural Water Supplies Document**

NMH agrees with treatment of the drinking water component of water supplied through a network system to a farm (or farms) to support farm activities (e.g. stock water).

### ***Recommendations:***

- The criteria to identify a rural agricultural supply should not have defined figures for the domestic purposes (e.g. 35%) vs. “farming” activity (e.g. 65%). All reticulated drinking water should be treated, no matter what the context.  
  
This will allow flexibility to apply the acceptable solution to the likes of lifestyle subdivisions that have a predominant irrigation or farmlet use.
- Options for household treatment should allow alternatives, other than cartridge and UV, that still meet drinking water standards health criteria.
- There should be no restriction on numbers of consumers, or buildings supplied by a treatment system- design it for the population served.
- Figures 2 & 3 (Page 17) include diagrams that show an intake with backflow protection device, but also an airgap at the first storage tank. Airgap is an approved backflow device, so this gives a false impression of double protection being needed.

## **Drinking Water Network Environmental Performance Document**

NMH supports the introduction of a package of drinking water environmental performance measures for network operators. These requirements will help to provide greater transparency about the performance of networks and the impacts they have on the environment and public health and contribute to the continuous improvement of the quality of water services in Aotearoa.

**Conclusion**

- NMH thanks the Taumata Arowai for the opportunity to comment on the Drinking Water Standards and Rules.

Yours sincerely

A handwritten signature in blue ink that reads "Peter Burton." The signature is written in a cursive style with a large initial 'P' and a period at the end.

Peter Burton  
Strategic Advisor  
Public Health Service