12 December 2025

Water Services Authority – Taumata Arowai
korero@taumataarowai.govt.nz

Kia ora,

SUBMISSION ON DRINKING WATER QUALITY ASSURANCE RULES (LARGE SUPPLIES) RULES REVIEW 2025 – DISCUSSION DOCUMENT

1. The Dunedin City Council (DCC) thanks the Water Services Authority – Taumata Arowai for the opportunity to make a submission on the review of the Drinking Water Quality Assurance Rules (DWQAR) for large supplies. The DCC notes this is the first proposed set of changes to the DWQAR level 3 rules since they came into force three years ago in November 2022.

2. A technical submission using the submission template provided by the Water Services Authority – Taumata Arowai is attached to this letter as Appendix A. The technical submission provides responses to the consultation questions posed in the discussion document. The technical submission only comments on those rules that are relevant to the DCC's four registered drinking water supplies: Dunedin City (DUN001), Outram (OUT001), Waikouaiti (WAI015) and West Taieri (WES002). The DCC has not been able to take a wider view and assess and provide comment on changes to other rules in the time available. Questions about those rules are marked 'not applicable' in Appendix A.

3. The DCC supports the proposed change to the DWQAR annual reporting period to the financial year and the proposed changes to monthly reporting frequency for many monitoring rules.

4. The DCC also supports, in principle, most proposed changes to existing rules and proposed new rules. In its technical submission at Appendix A, the DCC offers feedback and recommendations on rule requirements and wording. These are intended to help the Water Services Authority – Taumata Arowai further refine the rules to improve clarity and remove 'grey areas', in support of consistent implementation across supplies, suppliers and the regulator. The DCC technical submission at Appendix A includes recommendations on the following topics:

    a. Rules relating to cyanobacteria and cyanotoxin monitoring
    b. Continuous monitoring rules
    c. Source water classification rules
    d. Recycling rules
    e. Membrane filtration rules

f. Chemical monitoring rules
g. Monitoring rules for FAC, plumbosolvent metals and disinfection by-products in the distribution zone
h. Accreditation for DWQAR compliance reporting systems.

5. Like the Water Services Authority – Taumata Arowai, the DCC expects improved clarity and consistent implementation of the rules will contribute to improved compliance and – ultimately – to improved drinking water safety.

6. The DCC technical submission also comments on cost implications likely to arise from the proposed changes. The DCC estimates the costs of modifying its electronic compliance monitoring and reporting system to address all rule changes covered by this proposal, including minor changes such as revisions to the rule numbering system that are administrative in nature and are unlikely to have a material impact on drinking water safety outcomes for consumers, is likely to be in the tens of thousands of dollars. This is a large cumulative cost when totalled across all large drinking water suppliers across the country. The DCC recommends the Water Service Authority – Taumata Arowai considers how it can offset the up-front costs for suppliers to update their electronic compliance reporting systems to reflect the changes to the rules and proposes that this cost is funded by Water Service Authority – Taumata Arowai using existing levies.

7. The DCC would welcome the opportunity to meet with the Water Services Authority – Taumata Arowai to discuss any of the feedback and recommendations made in the DCC submission.

Kā mihi,

Sophie Barker
MAYOR OF DUNEDIN

Consultation questions for respondents

(1) Tell us about yourself

What is your name?

a. *Sophie Barker, Mayor of Dunedin*

What is your email address? Your email address will only be used if we need to communicate with you about your submission

a. *dcc@dcc.govt.nz*

(1D_region) Where do you live? (If you are a member of an organisation that is based in more than one region – please select 'National') *(required)*

a. *Otago/Ōtākou*

(1E_ Individual or Organisation) Are you providing feedback as an individual or on behalf of an organisation? *(required)*

a. *On behalf of an organisation or group*

If you're providing feedback on behalf of an organisation, please enter the organisation's name and your position/title within that organisation

a. *Dunedin City Council*
b. *Mayor of Dunedin*

(1H_Organisation_description) Which of these options best describes you in the context of this consultation? *(required)*

a. *Registered drinking water supplier (excluding marae)*

(1J_Supply_Population_Size) What population is served by the largest drinking water supply you manage? (required)

b. *Over 500 people*

Publishing submissions and Official Information Act 1982 requests

Publishing your submission

We're committed to transparency. For this reason, we:

- intend to proactively publish submissions made as part of this consultation on our website but only if we are given permission to do so,
- may also publish a summary of submissions; this summary would be aggregated so that individual submitters can't be identified.

(1K_Permission_to_Publish) Do you give us permission to proactively publish your submission? (Select an option)

[drop down selection follows]

- ***Yes, you may publish this submission including my personal details (name, organisation, email address).***
- ~~Yes, but without details that identify me. You may publish this submission but only after removing my personal details (name, organisation, and email address).~~
- ~~No. Do not publish this submission.~~

Official Information Act requests

Your submission will be subject to requests made under the Official Information Act (even if your submission is not published). Please respond to the question below to let us know if you would like your personal details removed from your submission if it is included in any future OIA response.

(1L_OIA_Inclusion_Approval) Do you approve including your personal details in response to any related future Official Information Act requests received by Taumata Arowai?

[drop down selection follows]

- ***Yes, include my personal details in response to Official Information Act requests.***
- ~~No, remove my personal details from responses to Official Information Act requests.~~

(2) Consultation questions

Change in annual reporting timeframes

We are proposing to change the current Rules reporting year, currently January to December (calendar year), to July to June (financial year).

Over the past few years, councils have consistently raised concerns with us over the misalignment of reporting cycles between councils' annual reporting requirements and the Rules reporting requirements. Based on feedback from councils, we anticipate that aligning the Rules reporting requirements will likely produce efficiencies by reducing time and costs and reduce the reporting burden for councils.

If Rules reporting remains based on a calendar year, we anticipate the revised Rules being in effect from 1 January 2027. If a decision is made to move reporting to a financial year, as proposed, updated Rules reporting would apply from 1 July 2027 to align with the financial year reporting cycle.

It is important to note that this proposed change would affect Level 1, Level 2 and Level 3 water suppliers.

We would like your feedback on the following questions:

- (2A) Do you agree with the proposal to change the current Rules reporting year, currently January to December (calendar year), to July to June (financial year)?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The Dunedin City Council (DCC) agrees with the proposal to change the Rules reporting year from the calendar year to the financial year. This will align DWQAR compliance reporting period with the annual reporting periods for other compliance and performance reporting requirements relevant to water services providers, including annual reporting on Network Environmental Performance Measures, DIA non-financial performance measures, and resource consent compliance. Aligning the reporting periods will make it simpler for water services providers and their stakeholders (including consumers) to compare compliance and performance trends year-to-year across the different compliance rules and performance measures water services providers report against.

- (2B) Do you agree that if a change to financial year reporting is introduced, revised Rules reporting year should apply from 1 July 2027?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC agrees with the proposal for the revised Rules reporting year to apply from 1 July 2027.

- (2C) Are there any implementation issues or impacts associated with changing to a financial year that you would like to provide feedback on?

☐ ***Yes*** ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ~~Not applicable~~

DCC comments

If the change to financial year reporting goes ahead, the DCC would look forward to early and clear instructions from the Water Services Authority – Taumata Arowai on the approach to reporting on Rules with a 1-year compliance period during the interim 6-month period between the end of calendar year reporting and the beginning of financial year reporting (eg. the 6-month period 1 January 2027-30 June 2027).

Council water service providers have multiple annual compliance and performance reporting requirements, with intensive annual reporting activity taking place in the three months following the end of the financial year (ie. July to September). Adding DWQAR annual reporting to this part of the year will increase the pressure on water services providers's resources during this period, but the potential impact would be reduced by making all reporting on DWQAR continuous monitoring rules monthly. As stated later in this submission, the DCC supports the proposed change to make all continuous monitoring rules reported on a monthly basis.

(3) Proposed changes to Level 3 Rules

This section covers proposed rule changes where we want your feedback. The proposed rule changes, rationale and questions are also included in the discussion document and individual Rules change tables.

It is important to note that this section does not cover all the proposed rule changes. Only those changes where we are requesting specific feedback are included. We strongly recommend that you read the proposed revised Rules, Rules change tables and rule summary list documents to understand all the proposed changes.

It is important that suppliers consider all the proposed changes relevant to their supplies and give feedback where necessary. There are general questions at the end of the online survey where you can include feedback on any proposed rule changes not covered by specific questions.

Level 3 Source water classes

We would like your feedback on the following question.

- (3A) Do you agree with expanding source water classes so that they apply to source water monitoring, bacteria and virus rules as well as protozoa rules?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

Class A and Class A (Interim) source water

We would like your feedback on the following questions:

- (3B) Do you agree with the proposal that Class A source water will not require primary treatment for bacteria, viruses or protozoa (though they will still need to add chlorine to provide a residual)?

~~☐ Yes~~ ~~☐ No~~ ~~☐ Don't know~~ ☐ ***Not applicable***

- (3C) Do you agree with the proposed requirement for an enteric viral monitoring programme to demonstrate a health-outcome target for viral risk can be met?

~~☐ Yes~~ ~~☐ No~~ ~~☐ Don't know~~ ☐ ***Not applicable***

- (3D) Do you agree with the proposed health-outcome target of one enteric viral infection/10,000 people/year?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

- (3E) Do you agree with the proposed requirement that an independent suitably qualified and experienced person must prepare a written report demonstrating that the health-outcome target can be achieved and maintained for the supply?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

- (3F) Do you agree with the proposed criteria included in Class A (Interim) to establish Class A source water?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

- (3G) Do you agree with the 24-month timeframe for establishing Class A source water?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

Class B and Class B (Interim) source water

We would like your feedback on the following questions:

- (3H) Do you agree with the proposed criteria for demonstrating Class B source water?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

- (3I) Do you agree with the proposed criteria included in Class B (Interim) for establishing Class B source water?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

- (3J) Do you agree with the 24-month timeframe for establishing Class B source water?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

(3) Source water contamination assessments

We would like your feedback on the following questions:

- (3K) Do you agree with the proposed assessments for Class A, Class A (Interim), Class B and Class B (Interim) source water if any monitoring result indicates potential contamination or the groundwater source has been compromised?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

(3) Class C source water

We would like your feedback on the following questions:

- (3L) Do you agree with the criteria for Class C source water?

☐ ***Yes*** ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ~~Not applicable~~

DCC comments

The DCC agrees with the criteria for Class C source water.

- (3M) Do you agree that an assessment to reclassify a Class D source water to Class C should only be undertaken by a suitably qualified and experienced person?

☐ ***Yes*** ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ~~Not applicable~~

DCC comments

The DCC agrees that an assessment to reclassify a Class D source water to Class C should only be undertaken by a suitably qualified and experienced person. However, the DCC would encourage the Water Services Authority – Taumata Arowai to consider if there are specific qualifications and/or experience thresholds expected of a 'suitably qualified and experienced person' for the purpose of source water classification assessments. If there are, the DCC would recommend that the Water Services Authority – Taumata Arowai makes these clear to drinking water suppliers to support them to comply with this rule. This could be achieved via guidance documentation published online, and/or via inclusion of a definition of 'suitably qualified and experienced person' in clause 3 of the Rules.

Class D source water

We would like your feedback on the following question:

- (3N) Do you agree with the criteria for Class D source water?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC agrees with the criteria for Class D source water.

(4) General rules module

G.RR.4

We would like your feedback on the following questions:

- (4A) Do you agree (for all applicable rules) with the change to make all continuous monitoring rules reported on a monthly basis?

☐ ***Yes*** ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ~~Not applicable~~

DCC comments

The DCC agrees with the proposed change (for all applicable rules) to make all continuous monitoring rules reported on a monthly basis. The DCC considers this will be more efficient and reduce the scale of the annual reporting workload.

- (4B) Do you agree with non-compliance reporting for non-compliance with continuous monitoring rules?

☐ ***Yes*** ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ~~Not applicable~~

DCC comments

The DCC agrees with the proposal to require more detailed non-compliance reporting for non-compliance with continuous monitoring rules. This will improve understanding of the extent of non-compliance and enable more detailed analysis of appropriate interventions to address non-compliance and reduce risks to drinking water safety.

- (4C) Are there any cost implications for you from this proposed change?

☐ ***Yes*** ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ~~Not applicable~~

DCC comments

The DCC expects that it will need to modify the electronic compliance software system it uses for DWQAR compliance monitoring and reporting to respond to the changes in non-compliance reporting for continuous monitoring rules. The cost of making modifications specific to compliance with rule G.RR.4 has not yet been estimated in detail.

However, the DCC's preliminary estimate of the costs of modifying its compliance system to address all changes covered by this proposal is in the tens of thousands of dollars.

- (4D) If there are costs - will these be internally or from purchasing services?

☐ ***internal costs*** ☐ ***purchasing services*** ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

Up-front costs would be from purchasing services, in the form of costs relating to the modification of the electronic compliance system to reflect the updated Rules. This service would be performed by the provider of the electronic compliance system. Internal costs in the form of increased staff time required for quality assurance checks on electronic non-compliance reporting may also be incurred on an ongoing basis.

G.RR.5

We would like your feedback on the following questions:

- (4E) Do you agree with including a rule that sets out the requirements specific to grab sampling for monitoring rules?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC agrees that the inclusion of a rule that sets out the requirements specific to grab sampling for monitoring rules is a helpful addition.

- (4F) Do you agree with changing some reporting that is currently annual into monthly reporting?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC agrees with the proposal to change some reporting that is currently annual to monthly reporting. The DCC considers this will be more efficient and reduce the scale of the annual reporting workload.

G.CM.3

We would like your feedback on the following question:

- (4G) Do you agree with the 24-hour grab sample time proposed to account for the missing source water or distribution zone continuous monitoring data with a limit of up to 48 hours?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC agrees with the 24-hour grab sample time proposed to account for missing source water or distribution zone continuous monitoring data with a limit of up to 48 hours. The DCC considers the proposed rule would provide suppliers with a practical pathway to maintain compliance and provide assurance that drinking water remains safe during periods of data loss from continuous monitoring analysers used for source water and in the distribution zone.

G.CM.4

We would like your feedback on the following question:

- (4H) Do you agree with the 60-minute grab sample time proposed to account for missing treatment continuous monitoring data?

☐ ***Yes*** ~~☐ No ☐ Don't know ☐ Not applicable~~

DCC comments

The DCC has experienced difficulties complying with the requirements of current rule G17, which requires grab samples to be taken at 30-minute intervals to demonstrate compliance when treatment continuous monitoring fails. This is largely due to travel time: the DCC has two water treatment plants at remote locations that cannot be reached for grab sampling purposes within 30 minutes unless a technician is coincidentally on-site or nearby when the continuous monitoring failure occurs. The 60-minute grab sample time increases the likelihood that DCC can maintain compliance with treatment monitoring rules when continuous monitoring fails at these plants.

The DCC recommends the Water Services Authority – Taumata Arowai publishes its rationale for the 60-minute threshold. How was 60-minutes determined as the appropriate interval for grab sampling – is it based on feasibility, or based on a drinking water safety risk analysis? The DCC considers the key feasibility challenge arising from current rule G17 is the ability to take the first grab samples within 30 minutes of the continuous monitoring failure. Taking subsequent grab samples at 30-minute intervals is generally feasible. The DCC recommends the Water Services Authority – Taumata Arowai considers, from a drinking water safety perspective and a practical feasibility perspective, the advantages and disadvantages of further modifying the rule so that it sets:

- *A time threshold for undertaking the first grab samples after continuous monitoring failure / data loss occurs; and*
- *A maximum time interval between subsequent grab samples required to maintain compliance.*

(5) Source water monitoring rules module

S3.CR.1

We would like your feedback on the following questions:

- (5A) Do you agree that an assessment to classify a source water class should only be undertaken by a suitably qualified and experienced person?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC agrees that an assessment to classify a source water class should only be undertaken by a suitably qualified and experienced person. However, the DCC would encourage the Water Services Authority – Taumata Arowai to consider if there are specific qualifications and/or experience thresholds expected of a 'suitably qualified and experienced person' for the purpose of source water classification assessments. If there are, the DCC would recommend that the Water Services Authority – Taumata Arowai makes these clear to drinking water suppliers to support them to comply with this rule. This could be achieved via guidance documentation published online, and/or via inclusion of a definition of 'suitably qualified and experienced person' in clause 3 of the Rules.

- (5B) Would there be any cost implications for your organisation?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

At this stage, the DCC does not expect this requirement to have cost implications for the DCC.

S3.AB.1

We would like your feedback on the following questions:

- (5C) Do you agree that an assessment to demonstrate a sanitary bore head should only be undertaken by a suitably qualified and experienced person?

~~☐ Yes~~ ~~☐ No~~ ~~☐ Don't know~~ ☐ ***Not applicable***

- (5D) Would there be any cost implications for your organisation?

~~☐ Yes~~ ~~☐ No~~ ~~☐ Don't know~~ ☐ ***Not applicable***

S3.AB.2

We would like your feedback on the following questions:

- (5E) Do you agree with only allowing representative sampling for Class A, Class A (Interim), Class B and Class B (Interim) source water?

☐ Yes ☐ No ☐ Don't know ☐ ***Not applicable***

- (5F) Do you agree with the proposal to remove the six bore limit for representative sampling?

☐ Yes ☐ No ☐ Don't know ☐ ***Not applicable***

S3.AB.4

We would like your feedback on the following question:

- (5G) Do you agree with the frequency for testing for a viral indicator being determined by the supplier's enteric viral monitoring programme?

☐ Yes ☐ No ☐ Don't know ☐ ***Not applicable***

S3.AB.5

We would like your feedback on the following question:

- (5H) Do you agree with the removal of the requirement to monitor for colour for Class A, Class A (Interim), Class B and Class B (Interim) source water?

☐ Yes ☐ No ☐ Don't know ☐ ***Not applicable***

S3.AB.6

We would like your feedback on the following questions:

- (5I) Do you agree with requiring continuous monitoring for conductivity, pH and turbidity for Class A, Class A (Interim), Class B and Class B (Interim) source waters?

☐ Yes ☐ No ☐ Don't know ☐ ***Not applicable***

- (5J) Would there be any cost implications for your organisation?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

S3.AB.7 and S3.CD.4

We would like your feedback on the following questions:

- (5K) Do you agree with the proposed addition of boron, fluoride and hardness?

☐ ***Yes*** ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ~~Not applicable~~

DCC comments

The DCC considers the addition of hardness monitoring compensates for the removal of monitoring requirements for calcium and magnesium.

- (5L) Do you agree with the proposed removal of barium, calcium and magnesium?

☐ ***Yes*** ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ~~Not applicable~~

DCC comments

The DCC considers the addition of hardness monitoring compensates for the removal of monitoring requirements for calcium and magnesium.

S3.AB.9

We would like your feedback on the following question:

- (5M) Do you agree that testing for radiological determinands should only be required for Class A, Class A (Interim), Class B and Class B (Interim) source waters?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

Class C and Class D source water rules

S3.CD.6

We would like your feedback on the following questions:

- (5N) Do you agree with the change to an assessment of the likelihood of the presence of cyanobacteria in source water and moving the assessment of cyanobacteria risk to the source water risk management plan?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC supports the proposed change to an assessment of the likelihood of the presence of cyanobacteria in source water.

However, the DCC notes that cyanobacteria likelihood can change based on changes in source water conditions. The DCC recognises that the five-year renewal period for the likelihood assessment in rule S3.CD.6(b) is intended to be an 'at minimum' requirement, but would encourage the Water Services Authority – Taumata Arowai to consider adding further wording to the rule to make it clear to drinking water suppliers that they should also reassess cyanobacteria likelihood if source water conditions change. This could be achieved by the use of wording along the following lines: "The assessment must be undertaken by a suitably qualified and experienced person, recorded in writing and renewed whenever there is a substantive change in baseline source water conditions and at least once every five years." This would help to reduce the potential for suppliers to treat the five yearly renewal requirement as a default setting (as opposed to an 'at minimum') and potentially miss material increases in cyanobacteria likelihood as a result.

Finally, the DCC notes the suggestion in this question that the cyanobacteria risk assessment will be moved to the source water risk management plan. However, it is not clear which rules within the DWQAR would give effect to this move. The DCC recommends that the Water Services Authority – Taumata Arowai considers the regulatory method for ensuring that drinking water suppliers incorporate a cyanobacteria risk assessment in their source water risk management plans, if that is the intention, and make changes to the rules to give effect to this intention.

- (5O) Do you agree that the likelihood assessment should only be undertaken by a suitably qualified and experienced person?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC agrees that an assessment of cyanobacteria likelihood should only be undertaken by a suitably qualified and experienced person. However, the DCC would encourage the Water Services Authority – Taumata Arowai to consider if there are specific qualifications and/or experience thresholds expected of a 'suitably qualified and experienced person' for the purpose of cyanobacteria likelihood assessments. If there are, the DCC would recommend that the Water Services Authority – Taumata Arowai makes these clear to drinking water suppliers to support them to comply with this rule. This could be achieved via guidance documentation published online, and/or via inclusion of a definition of 'suitably qualified and experienced person' in clause 3 of the Rules.

S3.CD.7 and S3.CD.8

We would like your feedback on the following questions:

- (5P) Do you agree with the change from requiring suppliers to prepare a cyanobacteria/cyanotoxin response plan to prescribing monitoring?

☐ **Yes** ☐ ***No*** ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC agrees with prescribing requirements cyanobacteria monitoring in the source water and considers the inclusion of clear thresholds for monitoring within the DWQAR will be very helpful for suppliers.

However, the DCC does not agree with removing the requirement for drinking water suppliers to prepare a cyanobacteria / cyanotoxin response plan and considers that prescribed cyanobacteria monitoring would be a useful complement to the response plan (rather than a replacement for it). The DCC notes that the distribution rules prescribe monitoring for disinfection, disinfection by-products, plumbosolvent metals and microbiological determinands ***and*** *require the preparation and implementation of response procedures for 'out of specification' results (see rules D3.RD.2 and D3.MM.1). The DCC recommends the requirement to prepare and implement a response plan (or response procedures) for 'out of specification' cyanobacteria and cyanotoxin results is retained in the DWQAR.*

The DCC also supports the proposed approach to specifying monitoring requirements for benthic and planktonic cyanobacteria in separate rules. The DCC would recommend that appropriate methods for benthic mat coverage monitoring are clarified in the rule itself and in accompanying guidance. The DCC notes that 'visual assessment' is mentioned in the consultation material (change table 03: source water monitoring rules) but not in the proposed wording of rule S3.CD.8. The DCC recommends the addition of 'visual' to the wording of rule S3.CD.8 to improve clarity.

The DCC recommends the Water Services Authority – Taumata Arowai provides a rationale for specifying 5% benthic mat coverage as the threshold for cyanobacteria biovolume monitoring in rule S3.CD.8. The

DCC notes that a presentation by Jonathan Puddick of the Cawthron Institute at the 2024 Cyanobacteria Workshop hosted by Taumata Arowai referred to examples where cyanotoxin concentration was detected after 20% benthic mat coverage was reached (not 5%).

- (5Q) Do you agree with the requirements to monitor cyanobacteria biovolume when source waters have a medium or high likelihood of planktonic or benthic cyanobacteria being present?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC agrees with the requirement to monitor cyanobacteria biovolume when source waters have a medium or high likelihood of planktonic or benthic cyanobacteria being present. The DCC understands that biovolume provides a better indicator of cyanotoxin concentration than cyanobacteria and assumes this has been associated with an estimated worst-case intra-cellular concentration. Providing this worst-case intra-cellular concentration estimation would be useful for suppliers to estimate the raw water toxin concentration, and the expected post-treatment concentrations (i.e. to assess the WTP's capability for toxin removal).

The DCC notes that to calculate biovolume, a cell count needs to be measured and then multiplied by a species-specific cell volume, which means that suppliers will still need to measure cell counts.

- (5R) Do you agree that suppliers do not need to undertake monitoring of source water for planktonic or benthic cyanobacteria if they have a cyanotoxin removal process as part of their treatment?

~~☐ Yes~~ ☐ ***No*** ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC considers there is insufficient certainty about the effectiveness of cyanotoxin treatment processes and is concerned that removing the requirement to monitor cyanobacteria (i.e. cell counts / biovolume) in the source water could increase risks to drinking water safety. The DCC would draw a parallel with DWQAR monitoring requirements for E.coli: treatment processes for removing microbiological contaminants are highly effective, yet the DWQAR still require monitoring of E.coli in the source water. This helps drinking water suppliers better understand their source water and manage their treatment processes appropriately to maintain safe drinking water. It is unclear why the approach taken for E.coli monitoring should not also be taken for cyanobacteria / cyanotoxins.

The DCC also notes that cyanotoxin removal can occur from treatment processes that drinking water suppliers put in place for other reasons. For example, the DCC understands that chlorine is expected to

have reactivity with microcystins, nodularins and cylindrospermopsins. However, many drinking water suppliers (including the DCC) will use chlorine as part of their treatment process for the primary purpose of removing microbiological determinands. Similarly, some treatment processes installed for the purpose of taste and odour removal may also be effective at removing some cyanotoxins.

Cyanotoxin monitoring is very expensive and the DCC understands there is currently only one laboratory in New Zealand that can test for cyanotoxins to the required sensitivity. Additionally, turn-around time for cyanotoxin testing is approximately 5 working days, which is not very effective for responding to elevated levels. Cyanobacteria monitoring in the source water provides a more timely and effective mechanism to maintain awareness of cyanobacteria / cyanotoxin risk and initiate appropriate responses.

As such, the DCC does not agree that having a cyanotoxin treatment process should exempt drinking water suppliers from the requirement to monitor cyanobacteria in the source water and recommends that the Water Services Authority – Taumata Arowai amends rules S3.CD.7 and S3.CD.8 in a manner that makes it clear that all suppliers must monitor cyanobacteria in the source water.

S3.CD.9

We would like your feedback on the following question:

- (5S) Do you agree with the cyanobacteria biovolume threshold prescribed for initiating the commencement of cyanotoxin monitoring in treated water?

~~☐ Yes~~ ~~☐ No~~ ☐ ***Don't know*** ~~☐ Not applicable~~

DCC comments

The DCC agrees with prescribing a cyanobacteria biovolume threshold for initiating the commencement of cyanotoxin monitoring in treated water. The DCC notes that the 0.25mm^3/L threshold included in proposed rule S3.CD.9 is 50% of the recreational limit for cyanobacteria biovolume in freshwater, but the Water Services Authority – Taumata Arowai has not provided a scientific rationale for why this threshold is considered appropriate for the purposes of this rule. The DCC recommends that the Water Services Authority – Taumata Arowai provides a rationale for selecting the 0.25mm^3/L threshold.

S3.5 (existing rule) – Remove

We would like your feedback on the following question:

- (5T) Do you agree with the proposed removal of additional event-based monitoring of Class C and D source waters from the Rules?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC agrees with the proposed removal of additional event-based monitoring of Class C and Class D source waters from the Rules. The DCC has found it difficult to operationalise and assess compliance with this rule. Event based monitoring can be challenging to plan for: each is very case-specific and in some cases the event may limit the ability to do additional monitoring. DCC also has water treatment plants that are designed to have secondary options if source water is affected by weather events, via selective abstraction. The DCC considers that removing this rule would not change DCC's operational approach and would not have any negative impacts on drinking water safety.

Footnotes 33, 36 and 40 (existing footnotes) – Remove

We would like your feedback on the following question:

- (5U) Do you agree with the proposed removal of footnotes on the collection of samples from the Rules?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ***Don't know*** ☐ ~~Not applicable~~

DCC comments

The DCC considers these footnotes provide useful guidance for drinking water suppliers on implementing particular source water monitoring rule. The DCC notes the Water Services Authority – Taumata Arowai's intention to replace this footnote with new, separate guidance for drinking water suppliers on sampling that would sit outside (but alongside) the DWQAR. The DCC is not able to comment on the impact of removing the footnotes from the DWQAR without seeing the guidance that would replace them.

(6) Level 3 Treatment rules module

Bacteria and virus treatment rules

T3.BV.C2

We would like your feedback on the following questions:

- (6A) Do you agree with removing chlorine dioxide as an option for bacteria and virus treatment?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

- (6B) Do you agree with removing the requirement for Self-supplied buildings providing water to more than one building to use chlorine?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

(7) Protozoa Treatment rules

T3.PZ.C3

We would like your feedback on the following questions:

- (7A) Do you agree with removing the coagulation, flocculation and sedimentation process without filtration process option?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

- (7B) Do you agree with removing the current coagulation, flocculation and direct filtration process option for achieving 3 log and 3.5 log credits?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

- (7C) Do you agree with removing the reference to flocculation in the current coagulation, flocculation and direct filtration process?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

- (7D) Are you using coagulation and direct filtration to achieve 3 log or 3.5 log credits?

☐ ~~Yes~~ ☐ ***No*** ☐ ~~Don't know~~ ☐ ~~Not applicable~~

- (7E) Do you agree with removing the second stage filtration process option?

[Refer to: Change table 05: T3 Protozoa Treatment Rules page 2]

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

- (7F) Do you agree with removing the slow sand filtration process option?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

- (7G) Will removing these options create any challenges for your organisation?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

T3.PZ.C5

We would like your feedback on the following question:

- (7H) Do you agree with the proposed changes for managing recycled water at treatment plants?

☐ ***Yes*** ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ~~Not applicable~~

DCC comments

The DCC agrees with allowing more options for flow equalisation of recycled water flow rate. In particular, this makes compliance with the recycling rules more achievable for water treatment plants that use membrane filtration as a protozoa barrier. An unintended consequence of the wording of the current recycling rule is that a recycle system at a DCC water treatment plant using membrane filtration has needed to be turned off at times due to challenges arising from operating within the constraints of instantaneous flow requirements.

The DCC recommends that the Water Services Authority – Taumata Arowai makes further changes to the wording of proposed rule T3.PZ.C5 to enhance clarity by defining and/or further explaining the following terms:

- *'during restart' (T3.PZ.C5(b)) – it is not clear what this is intended to mean. Is the intention to refer to restarting a stop/start treatment plant that has been 'off' due to low consumer demand, or is the intention to refer to restarting a filtration system after regular maintenance such as backwashing, for example?*
- *'effective solids/liquid separation' (T3.PZ.C5(c)(ii) and (iii)) – this term is subjective and would benefit from definition and/or the addition of specific criteria to the rule.*
- *'mean total recycled water return rate' (T3.PZ.C5(c)(v)(a)) – this mean needs to be accompanied by a time period over which the mean should be calculated.*
- *'be returned to the head of the plant…' (T3.PZ.C5(c)(i)) – this should specify whether water can be returned to a raw water reservoir or must be returned directly into the WTP inflow stream. The DCC has experienced varying interpretations across consultants and the municipal water treatment industry. DCC experience has been that returning to recycle water to the WTP inflow stream directly causes instabilities for coagulant dosing control with fluctuation of raw water colour Hazen and the subsequent automated coagulant dosing rate.*

T3.PZ.C6

We would like your feedback on the following question:

- (7I) Do you agree with the inclusion of this rule about the turbidity of filtered water?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ***Don't know*** ☐ ~~Not applicable~~

DCC comments

The DCC notes that the wording of proposed rules T3.PZ.C6 differs between the rule change table (Table 04), which refers to 'media filter', and the draft rules document, which refers to 'any filter'. The DCC assumes the wording of the draft rules document ('any filter') is correct and that this rule is not intended to apply only to media filters.

The DCC is unclear whether this rule adds any value when other rules specifying turbidity thresholds for filtrate are already in place (for example, rules requiring filtrate to maintain a turbidity <0.1 NTU for the majority of the day – eg. rules T3.PZ.F9 and T3.PZ.M2).

The DCC would also note that feasible options for locating pre-filtration analysers are likely to differ for different types of treatment processes and could become complicated at more complex water treatment plants. The DCC considers that measuring turbidity upstream of any flocculation process could be more beneficial.

Options for determining pre-filtration turbidity at DCC water treatment plants include:

- *Using raw water turbidity monitored at the inflow to the water treatment plant*
- *Calculating an average turbidity of treatment streams prior to filtration (e.g. turbidity of water produced in four coagulated Dissolved Air Flotation Streams)*
- *Monitoring turbidity on dedicated coagulated water sample line(s) pre-filtration (e.g. floc tanks).*

The DCC recommends the Water Services Authority – Taumata Arowai further clarifies the wording of the rule to allow suppliers flexibility to determine the appropriate method for determining pre-filtration turbidity for the purposes of this rule.

The DCC notes that if the wording remains rigid and is interpreted as requiring the installation of turbidity analysers immediately upstream of the filtration process, the installation of new turbidity analysers would potentially have large costs implications for suppliers.

T3.PZ.X4

We would like your feedback on the following question:

- (7J) Do you agree with the removal of the option to use AS/NZS 4348:1995 in conjunction with AS/NZS 3497:1998 (updated 2001)?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ***Not applicable***

(8) Chemical monitoring rules

T3.CH.1

We would like your feedback on the following questions:

- (8A) Do you agree with requirements for suppliers to demonstrate that chemicals dosed into drinking water are safe for use?

☐ ***Yes*** ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ~~Not applicable~~

DCC comments

The DCC agrees in principle with the requirement for drinking water suppliers to demonstrate that chemicals dosed into drinking water are safe for use via certificates of analysis or certificates of compliance. However, the DCC recommends that the Water Services Authority – Taumata Arowai makes further changes to the wording of proposed rule T3.CH.1 to enhance clarity by defining and/or further explaining the following terms:

- *'chemical dosed into the drinking water supply' – the DCC assumes this is not intended to include cleaning chemicals used at water treatment plants (e.g. CIP chemicals), and recommends the wording of the rule is updated to make this clear*
- *'agreed chemical standard' – the DCC considers compliance would be enhanced if these standards were specified for common chemicals used in water treatment*
- *'potential impurities' – this requires clarification, and/or the setting of limitations on how it would be assessed and managed in practise. Is the expectation of the rule that all elements would be tested for in all chemicals used?*

- (8B) Will meeting the requirements of this proposed rule create challenges for your organisation?

☐ ***Yes*** ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ~~Not applicable~~

DCC comments

The DCC's experience is that chemical suppliers have variable procedures for producing certificates of analysis. The DCC has found that certificates can be difficult and/or slow to obtain. Drinking water suppliers' ability to comply with this rule will depend on improvements to certification procedures in the chemical supply sector.

The DCC also considers that meeting the requirements of the proposed rule may lead to additional costs for testing, and potential delays in the ability to use chemicals if they need to be further analysed before use.

T3.CH.2

We would like your feedback on the following question:

- (8C) Do you agree with this proposed rule requiring preparation of a schedule of chemicals used in treatment?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC agrees in principle with the requirement for drinking water suppliers to prepare a schedule of chemicals used in treatment. However, the DCC notes that most chemical products dosed will not have a MAV. As such, the DCC recommends the Water Services Authority – Taumata Arowai retains table 34 (or similar) from the current DWQAR as a reference guide for proposed rule T3.CH.2. This table shows common treatment chemicals and the corresponding determinands to be monitored in drinking water. This will help to ensure there is a consistent approach to identifying determinands for monitoring based on common treatment chemicals used.

The DCC notes that most drinking water suppliers will maintain a chemical inventory as part of chemical storage health and safety requirements. The DCC considers there may be an opportunity for suppliers to adapt existing chemical registers prepared for other purposes to meet the requirements of this rule.

T3.CH.3

We would like your feedback on the following question:

- (8D) Do you agree with the increase in monitoring frequency to monthly for chemicals that were previously determined to have standard values?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

Although the increased monitoring requirements will contribute to increased costs for drinking water suppliers, the DCC considers the additional monitoring would be beneficial for helping to improve understanding and management of chemicals in drinking water.

The DCC notes that 'chemicals that may be formed in the treatment process' is a very broad scope and recommends that table 34 (or similar) from the current DWQAR is retained in the updated rules as a reference guide for proposed rule T3.CH.3. This table shows common treatment chemicals and the corresponding determinands to be monitored. This will help to ensure there is a consistent approach to identifying determinands for monitoring based on common treatment chemicals used.

T3.96 (existing rule) – remove

We would like your feedback on the following question:

- (8E) Do you agree that the requirement for event-based monitoring should be removed from the Rules and managed by the supplier on a case-by-case basis?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC agrees with the proposed removal of additional event-based monitoring of treated water and for this to be left to drinking water suppliers to manage on a case-by-case basis in accordance with their Drinking Water Safety Plans. The DCC has found it difficult to operationalise and assess compliance with this rule. Event based monitoring can be challenging to plan for: each is very case-specific and in some cases the event may limit the ability to do additional monitoring. DCC also has water treatment plants that are designed to have secondary options if source water is affected by weather events, via selective abstraction. The DCC considers that removing this rule would not change DCC's operational approach and would not have any negative impacts on drinking water safety.

(9) Cyanotoxin monitoring rules

T3.CY.1

We would like your feedback on the following question:

- (9A) Do you agree with this proposed rule on when cyanotoxin monitoring must be undertaken in treated water?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC agrees with this proposed rule in principle but recommends that the Water Services Authority – Taumata Arowai publishes more detail on the scientific and risk-based rationale that has informed the requirements of the rule.

Cyanotoxin monitoring is very expensive (at approximately $2000 per sample) and the DCC understands there is currently only one laboratory in New Zealand that can test for cyanotoxins to the required sensitivity. Additionally, turn-around time for cyanotoxin testing is approximately 5 working days, which is not very effective for responding to elevated levels. The DCC would like to understand whether the Water Services Authority – Taumata Arowai has considered alternative ways to monitor cyanotoxin risk in treated water that may be more efficient (both in terms of time and cost), including monitoring of proxies such as 2MIB and/or Geosmin, or continuation of cyanobacteria sampling in raw water when cyanotoxin treatment processes are used. The DCC is concerned that the costs of mandatory regular cyanotoxin testing may disincentivise installations of cyanotoxin removal processes.

The DCC also notes that cyanotoxin removal can occur from treatment processes that drinking water suppliers put in place for other reasons. For example, the DCC understands that chlorine is expected to have reactivity with microcystins, nodularins and cylindrospermopsins. However, many drinking water suppliers (including the DCC) will use chlorine as part of their treatment process for the primary purpose of removing microbiological determinands. Similarly, some treatment processes installed for the purpose of taste and odour removal may also be effective at removing some cyanotoxins. The DCC assumes that the cyanotoxin monitoring requirements "if a treatment process is being used to remove cyanotoxins from the source water" are only intended to apply when drinking water suppliers have installed a treatment process specifically for the purpose of cyanotoxin removal (but not for a different purpose where cyanotoxin removal may be incidental). The DCC recommends the wording of the rule is amended to make this clear.

T3.CY.2

We would like your feedback on the following question:

- (9B) Do you agree with this proposed change to the sampling frequency of cyanotoxins?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

Notwithstanding the DCC's comments on proposed rule T3.CY.1, the DCC agrees with proposed rule T3.CY.2 that provides clear thresholds (in terms of cyanotoxin levels) for determining cyanotoxin monitoring frequency.

However, the current wording of proposed rule T3.CY.2 is insufficiently clear and open to misinterpretation in terms of number and frequency of samples required. For example, a supplier could arguably satisfy the

requirements of part (a) of the rule (as currently written) by taking one sample on day 1 of the first two week period and then a second sample on day 13 of the second two week period. In this scenario, there would be 27 days between the two samples.

The DCC assumes this is not the intention of the rule. To improve clarity, the DCC recommends that the wording of the rule is further amended to clearly identify (for each of (a)-(c)):

- *The minimum number of samples to be taken in a given time period*
- *The maximum interval of time between two samples.*

This approach would make the rule consistent with the approach taken in the rules for FAC and microbiological monitoring in distribution zones.

(10) Level 3 Distribution rules module

D3.PM.1

We would like your feedback on the following questions:

- (10A) Do you agree with the proposal to require continuous monitoring of pressure in distribution zones?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC agrees with the proposal to require continuous monitoring of pressure in distribution zone and considers it is likely to contribute to drinking water safety and asset management benefits.

- (10B) Do you agree with the requirements of the proposed rule?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

- (10C) Do you currently have pressure monitoring in place in any of your distribution zones?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC has pressure monitoring in place in some distribution zones but does not have a level of coverage across the entire system that would enable it to comply with the rule as written.

- (10D) Are there any cost implications for you of this proposed change?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

Installation of new continuous monitoring analysers would be required to achieve full compliance with this rule for the DCC. This will have a capital expenditure cost implication for the DCC. The size of the costs has not yet been estimated.

D3.PM.2

We would like your feedback on the following question:

- (10E) Do you agree with the proposed pressure limits in distribution zones?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC considers 100kPa is low for a lower limit and would expect to receive customer complaints if pressure in its network fell to that threshold. The 150kPa for 85% of each day requirement is achievable for the DCC but will require work (and additional costs) to demonstrate compliance with live continuous monitoring data.

D3.RD.1

We would like your feedback on the following questions:

- (10F) Do you agree with the proposed rule on monitoring Free Available Chlorine (FAC) in a distribution zone?

~~☐ Yes~~ ~~☐ No~~ ☐ ***Don't know*** ~~☐ Not applicable~~

DCC comments

The DCC agrees with proposed rule D3.RD.1 in principle but makes further comments on aspects of the FAC monitoring rules in its responses to questions 10G, 10H and 11H below.

- (10G) Do you agree with meeting compliance requirements by using either continuous or grab sampling options?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

The DCC agrees with retaining the option for drinking water suppliers to meet FAC monitoring requirement in the distribution zone by using either continuous monitoring or grab sampling.

- (10H) Do you agree that continuous monitoring of FAC should be required for all distribution zones?

~~☐ Yes~~ ☐ ***No*** ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC comments

While continuous monitoring has significant advantages, the DCC notes that continuous FAC monitoring requirements for the distribution network appear to be substantially more difficult to comply with than the FAC sampling requirements (specifically in terms of the gap between data points). A supplier can comply with the grab sampling requirements so long as it does not have a gap of more than 2 days between samples. For continuous analysers the tolerable gap between data points will be significantly shorter (minutes).

The DCC notes that changing to continuous FAC monitoring from grab sampling would likely come at a substantial cost to suppliers. Installations of continuous monitoring analysers in the distribution network are likely to be complex, requiring access to power and communications / SCADA connectivity among other things.

(11) Seeking feedback on other matters

Rule type changes:

We would like your feedback on the following question:

- (11A) Do you have any comments on the proposed rule type changes or changes to reporting frequency?

☐ ***Yes*** ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ~~Not applicable~~

DCC comments

The DCC agrees with the changes to reporting frequency.

Interpretation changes:

We would like your feedback on the following question:

- (11B) Do you agree with the proposed changes to the definitions in the interpretation rules?

☐ ~~Yes~~ ☐ ***No*** ☐ ~~Don't know~~ ☐ ~~Not applicable~~

DCC comments

The DCC agrees with the removal of definitions that already appear in the Water Services Act 2021. However, the DCC would recommend other definitions proposed for removal are retained to support clarity and consistency in interpretation and implementation of the Rules.

Costs for your organisation:

We would like your feedback on the following questions:

- (11C) Do you agree with our assessment of the cost implications of the proposed Rules changes?

☐ ~~Yes~~ ☐ ~~No~~ ☐ ***Don't know*** ☐ ~~Not applicable~~

DCC Comments

Please see DCC comments on costs elsewhere in this submission.

- (11D) Do you have any comments on the cost implications of the proposed Rules changes?

DCC Comments

Please see DCC comments on costs elsewhere in this submission. The DCC recommends the Water Service Authority – Taumata Arowai considers how it can offset the up-front costs for suppliers to update their electronic compliance reporting systems to reflect the changes to the rules (including changes to rule numbering) and proposes that this cost is funded by Water Service Authority – Taumata Arowai using existing levies. These costs are likely to be unbudgeted for suppliers.

Formatting changes:

We would like your feedback on the following questions:

- (11E) Do the proposed changes make it easier to follow the Rules?

~~☐ Yes ☐ No~~ ☐ ***Don't know*** ~~☐ Not applicable~~

DCC comments

The DCC agrees in principle with the new format of the rules, particularly the removal of footnotes and most tables. However, the DCC considers it is too early to determine whether the new format will have a material impact on the ability of suppliers and the regulator to interpret and implement the rules.

- (11F) Do you agree with the revised Rules numbering system?

~~☐ Yes ☐ No~~ ☐ ***Don't know*** ~~☐ Not applicable~~

DCC comments

The DCC agrees in principle with the revised Rules numbering system but considers it will take time for it to become familiar. The DCC considers it is too early to determine whether the revised numbering system will have a material impact on the ability of suppliers and the regulator to interpret and implement the rules.

- (11G) Do you have any comments on the proposed formatting changes?

~~☐ Yes~~ ☐ ***No*** ~~☐ Don't know ☐ Not applicable~~

General comments:

We would like your feedback on the following questions:

- (11H) Do you have any comments on any other proposed rule changes?

☐ ***Yes*** ☐ ~~No~~ ☐ ~~Don't know~~ ☐ ~~Not applicable~~

Rule number	DCC comment	DCC recommendation
Clause 8(5)(d)	The DCC considers an assessment of the 'likelihood' of protozoa presence would be more appropriate than an assessment of protozoa 'risk' – much like the approach taken to cyanobacteria assessments in proposed rule S3.CD.6.	Amend the wording as follows: "…has a low <u>likelihood</u> ~~level~~ of protozoa contamination ~~risk~~ based on…"
G.SM.4/G.CM.1	The DCC has found that instrument manufacturers do not commonly specify calibration and verification frequency requirements. Rather, manufacturers will frequently refer suppliers back to the regulator's rules. When the regulator does not specify requirements, this creates a loop of uncertainty.	Amend the rule and/or provide accompanying guidance to set minimum frequency for calibration and verification of common compliance monitoring instruments.
S3.CD.5	1) The wording of the rule does not specify how 'determinands identified' will be identified. 2) The DCC has found it difficult to obtain public health advice from public health organisations on health risks of determinands in drinking water (including those with MAVs). At present it is not clear how setting thresholds for acceptable health risk for determinands without MAVs is to be achieved by suppliers in a consistent and appropriate manner.	1) Clarify where/how the determinands are to be identified. 2) Provide guidance for determining health risks of determinands without MAVs.

Rule number	DCC comment	DCC recommendation
T3.BV.C4	The DCC supports the incorporation of pH into this rule. However, the 6.5-8 pH range is lower than the range previously provided in the drinking water aesthetic values. The DCC understands network corrosion impacts become more likely at pH <7.	Amend the rule so that it uses pH 7.0-8.5 as the acceptable range, consistent with the aesthetic values.
T3.BV.F1	Locations of FAC, pH and turbidity analysers at DCC water treatment plants could be inconsistent with the locations described in the proposed wording of this rule. The DCC provides the following examples: • *DCC Water Treatment Plant A*: lime is dosed on the upstream side of the contact tank, then goes to the Treated Water Reservoirs. C.t. calculation includes Treated Water Reservoirs (with a low baffling factor). FAC/pH/Turbidity is measured as the water leaves the Treated Water Reservoirs. • *DCC Water Treatment Plant B*: lime is dosed on the outlet of the contact tank, however, C.t. calculation includes Treated Water Reservoirs (with a low baffling factor). FAC/pH/Turbidity is measured as the water leaves the Treated Water Reservoirs. • *DCC Water Treatment Plant C*: lime is dosed into the chlorine pumping well and then is pumped to the contact tank. C.t. calculation includes Treated Water Reservoirs. FAC/pH/Turbidity is measured as the water leaves the Treated Water Reservoirs	Amend the wording of the rule (if appropriate) to clarify whether (or not) 'after the outlet of the contact tank' can be interpreted as 'at any point after the outlet of the contact tank'.

Rule number	DCC comment	DCC recommendation
T3.BV.U1	The DCC notes that the Water Services Authority – Taumata Arowai intends to provide further guidance on UV treatment.	Specify one or more 'designated UV validation standard' considered appropriate either in the rule, or in accompanying guidance.
T3.PZ.M1(b)	The requirement for a PDT after a membrane unit has been 'out of service for maintenance, or any other reason, for more than 6 hours' is very broad and does not appear to meaningfully capture additional risk. The DCC understands the intention of this rule is to ensure that PDTs are carried out where heavy maintenance has occurred and 'broken the seal' of the process in a manner that means that physical damage to the membranes could have occurred. Prior engagement between Taumata Arowai staff and DCC staff led to a workable interpretation on the current version of this rule (rule T3.78) involving the definition of 'heavy maintenance' and specifying this rule is specific to 'heavy maintenance'. This approach was captured on the 'rule clarifications' page on the Taumata Arowai website. As currently written, this rule unnecessarily imposes PDT compliance requirements on water treatment plants that regularly stop and start on the basis of consumer demand, and where no obvious impact to the integrity of the membrane process would be expected to occur following a standard plant shut down >6 hours.	Amend the wording of the rule to clarify intention of the rule, as per previous DCC-Taumata Arowai communication on T3.78 and the rule clarification published on the Taumata Arowai website.
T3.PZ.M2	The DCC observes that the requirements of the membrane filtration rules appear to be more difficult to comply with compared to the rules for rapid-sand filters. This appears to	Amend the wording of the rule to clarify in response to DCC comments.

Rule number	DCC comment	DCC recommendation
	be counter to the general industry concept that a well-operated membrane filtration process would produce higher levels of risk mitigation than a well-operated rapid-sand filter due to the physical barrier and generally small pore size (<0.2um) that membranes provide. For example, in current rule T3.77 filtrate turbidity cannot exceed 1 NTU at any time. This contrasts with current rule T3.48, which states that filtrate turbidity must not exceed 0.3 NTU for the duration of any consecutive 15-min period. In practice, a turbidity >0.3 NTU would be acceptable for a consecutive 15-min period with rapid-sand filters while any turbidity >1.0 NTU would not be acceptable for membranes. Given than membrane plants have a high degree of start-stop behaviour (i.e. due to regular backwashing and approximately 30-minute intervals), and that start-stop behaviour has the potential to cause bubbles in turbidity sample lines - this rule could be adjusted slightly and still allow a good level of protection. In addition, most run-to-waste or shutdown sequences will take time to trigger (e.g. approximately 1 minute) and will likely trigger a non-compliance in compliance reporting even though the sequence has correctly triggered. A possible alternative would be to incorporate a short time delay into the requirements of proposed rule T3.PZ.M2 such as 2 or 3 mins to allow operations to stabilise. In addition, the limit (applied after the appropriate time delay) could also be lowered to strike a suitable risk balance (e.g. 0.5 NTU).	

Rule number	DCC comment	DCC recommendation
	If damage to a membrane filter has occurred, it is unlikely that this would be transient and would not continue after the short time delay period has elapsed. Therefore, any instance would still be likely to be detected via the triggering of a non-compliance.	
T3.PZ.U7	The DCC notes that the Water Services Authority – Taumata Arowai intends to provide further guidance on UV treatment.	Specify one or more 'designated UV validation standard' considered appropriate either in the rule, or in accompanying guidance.
T3.CH.4	3) The DCC has found it difficult to obtain public health advice from public health organisations on health risks of determinands in drinking water (including those with MAVs). At present it is not clear how setting thresholds for acceptable health risk for determinands without MAVs is to be achieved by suppliers in a consistent and appropriate manner. 1) The DCC observes that the proposed wording of this rule would mean that a one-off >50% MAV result in source water would lead to increased monitoring of that determinand in treated water continuing indefinitely. In other words, the rule does not appear to allow for monitoring frequency to reduce after a period of time if subsequent results in source water are consistently <50% MAV.	1) Provide guidance for determining health risks of determinands without MAVs. 2) Amend the rule to provide the ability for monitoring frequency to reduce after a period of time if subsequent results are consistently <50% MAV.
T3.CH.5	Bromate is excluded from the requirement.	Clarify if bromate is intended to be included or not.

Rule number	DCC comment	DCC recommendation
D3.RD.3	The DCC considers this is an overly complicated rule.	Simplify the rule by removing the 85% requirement and the 0.1mg/L lower limit, and by replacing these with a requirement for FAC to be 0.2 mg/L or more at all times (applicable to both grab samples and continuous monitoring).
D3.RD.9 and D3.RD.10	The current wording of proposed rule D3.RD.9 is insufficiently clear and open to misinterpretation in terms of number and frequency of samples required. To improve clarity, the DCC recommends that the wording of the rule is further amended to clearly identify: • The minimum number of samples to be taken in a given time period • The maximum interval of time between two samples. This approach would make the rule consistent with approach taken in the rules for FAC and microbiological monitoring in distribution zones. The requirements in D3.RD.10(a) to sample peripheral and central locations in the zone introduce a further complication to determining sampling frequency. The DCC recommends the Water Services Authority – Taumata Arowai clarifies whether or not the intention is that for each zone, the supplier must take at least two samples per quarter (at quarterly intervals)? This way, each monitoring event would ensure both centre and periphery are monitored each monitoring round. The DCC notes that if the supplier is able to reduce to annual monitoring under	Amend the wording of the rule to clarify in response to DCC comments.

Rule number	DCC comment	DCC recommendation
	rule D3.RD.10(d), it is not possible to represent both peripheral and central locations in the zone (per D3.RD.10(a)) with only one sample per monitoring round. Finally, the DCC recommends the term 'positive result' is defined / clarified – is this intended to mean any result above the laboratory level of detection?	
D3.RD.11	The current wording of proposed rule D3.RD.11 is insufficiently clear and open to misinterpretation in terms of number and frequency of samples required. To improve clarity, the DCC recommends that the wording of the rule is further amended to clearly identify: • The minimum number of samples to be taken in a given time period • The maximum interval of time between two samples. This approach would make the rule consistent with approach taken in the rules for FAC and microbiological monitoring in distribution zones.	Amend the wording of the rule to clarify in response to DCC comments.
G.CM.3 and interaction with S, T and D rules that require continuous monitoring	One interpretation of the interaction of these rules is that when a treatment continuous analyser has lost data, a supplier is non-compliant for both G.CM.3 and the treatment rule (e.g. T3.BV.C4 FAC >=0.2 mg/L) as the supplier cannot prove that the process variable is within acceptable limits.	Amend the wording of the rule to clarify its intention.

Rule number	DCC comment	DCC recommendation
	One disadvantage of this interpretation for the regulator is that there will be a conflation of measured non-compliances and potential non-compliances under the treatment rule reporting (i.e. it cannot be known if the non-compliance was measured, or could not be disproved due to the lack of data). These are not the same thing and do not have the same risk profile.	
D3.RD and D3.MM	Multiple terms are used in relation to sample point locations in the distribution zone without standard definitions. These are general terms open to interpretation. Without definition, these terms may be applied inconsistently by different drinking water suppliers.	Define the following terms in the relevant rule, or in the interpretation section: • Peripheral • Central • Centre • Extremity • High risk of deterioration • Population exposure Provide best practice guidance on how to determine sample point locations.
D3.MM.4	The definition of storage facilities not clear, and the expectation for sampling through the year also not clear. As worded it appears that a single sample taken at a storage facility per zone per year would meet this rule.	Amend the rule to clarify requirements, including by clarifying: • Whether or not 'storage facilities' include the treated water reservoir at a water treatment plant for the purpose of this rule (or only storage in the network); and • sampling frequency.
T3.BV.U10 and T3.PZ.U10	The proposed wording of this rule is consistent with previous communications between DCC staff and Taumata	N/A

Rule number	DCC comment	DCC recommendation
	Arowai staff regarding whether the duty UV sensor is required to be <1 year old. The DCC thanks the Water Services Authority – Taumata Arowai for incorporating this clarification into the proposed update.	
S3.CD and T3.CY – cyanobacteria / cyanotoxin	The Ministry of Health May 2020 Guidance for Cyanobacteria indicates the possibility for chlorine treatment of microcystins/nodularins/cylindrospermopsins.	Provide advice on whether the Water Services Authority – Taumata Arowai considers chlorine treatment is an appropriate barrier in the instance where these cyanotoxins are present in raw water.

- (11I) Do you have any general comments you would like to make about the proposed changes?

☐ ***Yes*** ~~☐ No~~ ~~☐ Don't know~~ ~~☐ Not applicable~~

DCC Comments

Compliance reporting accreditation: the DCC has observed variation in how the monitoring rules are being implemented in compliance reporting software systems. Where there is variation, the regulator's ability to accurately monitor and compare performance of drinking water suppliers is compromised.

The DCC recommends the Water Services Authority – Taumata Arowai investigates the possibility of an accreditation for DWQAR compliance reporting software systems and provides generic examples of how a supplier should code the compliance reports so there is consistency between suppliers.

This will also help to reduce the time and costs implications for suppliers of setting up compliance reporting systems.