

Summary of All Table of Changes from Current DWQAR 2022 rev 2024 to new DWQAR 2026

These tables set out, for each section of the Rules modules, the original/current rule, with the final new rule. Some original or current rules have been shortened to keep these tables as short as possible – for the full Rules please see [Drinking Water Quality Assurance Rules](#).

Note – all non-reporting rules have no compliance period (CP) or reporting period (RP).

The below sections include:

- Changes to level 3 source water classes
- Changes to Representative sampling and sanitary boreheads
- Changes to General Rules
- Changes to level 3 Source Water Monitoring Rules
- Changes to level 3 Bacteria and Virus Treatment Rules
- Changes to level 3 Protozoa Treatment Rules
- Changes to level 3 Chemical Monitoring Rules
- Changes to level 3 Cyanotoxin Monitoring Rules
- Changes to level 3 Distribution System Rules
- Final interpretation terms

Changes to level 3 source water classes

Current class	Current requirement	Final class	Final requirement
N/A	N/A	Class A	<p>(1) Class A is groundwater abstracted from a depth of greater than 30 metres below ground level (with depth measured from ground level to the top of the upper most screen), and abstracted via a sanitary bore head, that meets the following requirements:</p> <p>(a) the drinking water supplier must demonstrate that—</p> <ul style="list-style-type: none"> (i) no <i>E. coli</i> or total coliforms has been detected from monitoring over the previous three years with 12 samples taken per year evenly spaced over the year; and (ii) an enteric viral indicator monitoring programme, including a written report prepared by an independent suitably qualified and experienced person, demonstrates that a health-outcome target of 1 enteric viral infection/10,000 people/year can be achieved and maintained for the supply: <p>(b) an assessment must be undertaken immediately if any monitoring result (including from source water rules monitoring) indicates that—</p> <ul style="list-style-type: none"> (i) <i>E. coli</i> or total coliforms have been detected; or (ii) enteric viral indicators have been detected at a level that demonstrates that the health-outcome target of 1 enteric viral infection/10,000 people/year cannot be achieved; or (iii) the integrity of the groundwater has been compromised: <p>(c) The assessment must—</p> <ul style="list-style-type: none"> (i) determine the likely cause; and (ii) identify any actions that need to be taken to protect public health; and (iii) include an investigative sampling programme based on the sampling requirements in Class A (Interim) (a) for the determinand not met and any other determinands deemed appropriate.

			(iv) determine whether the source water still meets the criteria for Class A or reassessment is required to determine the appropriate source water class.
N/A	N/A	Class A (Interim)	<p>(2) If a drinking water supplier does not have the required monitoring data to demonstrate that source water is Class A, Class A (Interim) status can be applied to achieve Class A status by meeting the following requirements:</p> <p>(a) the drinking water supplier must demonstrate that, after 52 weeks,—</p> <p>(i) no <i>E. coli</i> or total coliforms have been detected after consecutive daily monitoring for 36 days, followed by weekly monitoring for the remainder of the 52 weeks; and</p> <p>(ii) an enteric viral indicator monitoring programme, including a written report prepared by an independent suitably qualified and experienced person, demonstrates that a health-outcome target of 1 enteric viral infection/10,000 people/year can be achieved and maintained for the supply:</p> <p>(b) an assessment must be undertaken immediately if any monitoring result (including from source water rules monitoring) indicates that—</p> <p>(i) <i>E. coli</i> or total coliforms have been detected; or</p> <p>(ii) enteric viral indicators have been detected at a level that demonstrates that the health-outcome target of 1 enteric viral infection/10,000 people/year cannot be achieved; or</p> <p>(iii) the integrity of the groundwater has been compromised:</p> <p>(c) the assessment must—</p> <p>(i) determine the likely cause; and</p> <p>(ii) identify any actions that need to be taken to protect public health; and</p> <p>(iii) include an investigative sampling programme based on the sampling requirements in rule 8(1)(a) for the determinand not met and any other determinands deemed appropriate:</p> <p>(d) if Class A status cannot be established within 24 months of being classified as a Class A (Interim) source, the source water must be classified as Class B or Class C.</p>
Class 1 – Protozoa barrier not required.	Criteria: Groundwater sources (bore water) that draw water from a depth of more than 30 metres below ground level (with depth measured from ground level to the top of the upper most screen) and via a sanitary bore head in which <i>E. coli</i> and total coliforms have not been detected over a period of three years (monthly samples with a maximum of 45 days between samples). If a groundwater source has demonstrated Class 1 status but any result for <i>E. coli</i> or total coliforms is positive, the groundwater source must assume Interim Class 1 status.	Class B	<p>(3) Class B is groundwater abstracted from a depth of greater than 30 metres below ground level (with depth measured from ground level to the top of the upper most screen) and abstracted via a sanitary bore head that meets the following requirements:</p> <p>(a) the drinking water supplier must demonstrate that no <i>E. coli</i> or total coliforms has been detected from monitoring over the previous three years with 12 samples taken per year evenly spaced over the year:</p> <p>(b) an assessment must be undertaken immediately if any monitoring result (including from source water rules monitoring) indicates that—</p> <p>(i) <i>E. coli</i> or total coliforms have been detected; or</p> <p>(ii) the integrity of the groundwater has been compromised:</p> <p>(c) the assessment must—</p> <p>(i) determine the likely cause; and</p> <p>(ii) identify any actions that need to be taken to protect public health; and</p> <p>(iii) include an investigative sampling programme based on the sampling requirements in (a) for the determinand not met and any other determinands deemed appropriate; and</p> <p>(iv) determine whether the source water still meets the criteria for Class B or reassessment is required to determine the appropriate source water class.</p>
Interim Class 1	If a drinking water supplier intends to demonstrate Class 1 status for a groundwater source (bore water) but does not have the required <i>E. coli</i> or total coliforms data, they may	Class B (Interim)	(4) If a drinking water supplier does not have the required monitoring data to demonstrate Class B source water, Class B (Interim) status can be applied to achieve Class B status by meeting the following requirements:

	demonstrate Interim Class 1 status by monitoring <i>E. coli</i> and total coliforms in bore water 30 daily for 36 days, and then weekly until 52 weeks of data has accrued with no <i>E. coli</i> or total coliforms detected. If any sample for <i>E. coli</i> or total coliforms is positive, the process must begin again until 52 weeks of data has accrued with negative results. If Class 1 category cannot be established within 24 months of beginning sampling, the water source must be classified as Class 2.		<ul style="list-style-type: none"> (a) the drinking water supplier must demonstrate that, after 52 weeks, no <i>E. coli</i> or total coliforms have been detected after consecutive daily monitoring for 36 days, followed by weekly monitoring for the remainder of the 52 week period; (b) an assessment must be undertaken immediately if any monitoring result (including from source water rules monitoring) indicates that— <ul style="list-style-type: none"> (i) <i>E. coli</i> or total coliforms have been detected; or (ii) the integrity of the groundwater has been compromised; (c) the assessment must— <ul style="list-style-type: none"> (i) determine the likely cause; and (ii) identify any actions that need to be taken to protect public health; and (iii) include an investigative sampling programme based on the sampling requirements in rule 8(3)(a) for the determinand not met and any other determinands deemed appropriate; (d) if Class B status cannot be established within 24 months of being classified as a Class B (Interim) source, the source water must be classified as Class C.
Class 2 – Protozoa barrier – 3 log	Criteria: Groundwater sources that draw water from a depth of between 30 metres and 10 metres below ground level (with depth measured from ground level to the top of the upper most screen).	Class C	<ul style="list-style-type: none"> (5) Class C is— <ul style="list-style-type: none"> (a) groundwater abstracted from a depth of greater than 10m below ground level including groundwater abstracted from greater than 30m that is not class A or B (with depth measured from ground level to the top of the upper most screen); or (b) roof collected water; or (c) spring water that is not under the influence of surface water; or (d) Class D surface water, spring water or groundwater (abstracted from a depth of less than 10m) that has a low level of protozoa contamination risk based on an assessment carried out at least every five years and recorded in a written report set out in the source water risk management plan prepared by a suitably qualified and experienced person.
Class 4 – Protozoa Barrier – 3 log	Criteria: Drinking water supplies that require a minimum protozoa treatment barrier of 4-log may reduce the level of protozoa treatment to a minimum of 3-log if the source water risk management plan for the supply provides evidence that the source water has a low risk of protozoa contamination.		
Class 3 – Protozoa Barrier – 4 log	Criteria: Groundwater sources that draw water from a depth of less than 10 metres below ground level (with depth measured from ground level to the top of the upper most screen), groundwater sources that draw water from a depth of 10 or more metres below ground level without a sanitary bore head, spring water sources and surface water sources	Class D	<ul style="list-style-type: none"> (6) Class D is— <ul style="list-style-type: none"> (a) surface water that is not Class C; or (b) spring water that is not Class C; or (c) groundwater that is not Class A, Class A (Interim), Class B, Class B (Interim) or Class C.

Changes to Representative sampling and sanitary boreheads

Existing rule number	Existing requirement	Final rule	Final requirement
4.9.1 S3 Source Water Protozoa Log Credit Treatment Requirements Class 1 Footnote 29	Samples can be from individual bores or water combined from up to six bores if the water is from the same aquifer and has similar characteristics.	7 Representative sampling	<ul style="list-style-type: none"> a. For the purpose of the level 3 source water rules, representative sampling means the sampling of one bore that is representative of two or more bores that access the same aquifer. b. Representative sampling must meet the following requirements— <ul style="list-style-type: none"> (a) the drinking water supplier can demonstrate that the bore that is sampled is representative of the bores that are not sampled; and (b) the representative nature of the sampled bore is re-established at least every five years or after significant seismic activity; and

<p>4.9.1 S3 Source Water Protozoa Log Credit Treatment Requirements Interim Class 1 Footnote 30</p>	<p>Samples can be from individual bores or water combined from up to six bores if the water is from the same aquifer and has similar characteristics.</p>		<p>(c) the assessment and reassessments are undertaken by a suitably qualified and experienced person and recorded in writing.</p>
<p>Table 16. Source Water Monitoring Determinands Footnote 34</p>	<p>Where multiple bores access the same aquifer, one bore can be sampled to provide results that are representative of a number of bores if the water supplier can demonstrate that the bore that is sampled is representative of the bores that are not sampled. The representative nature of the sampled bore must be reestablished every five years or after significant seismic activity.</p>		
<p>Table 17. S3 Class 1, Class 2 and Class 3 Groundwater Source Monitoring Determinands Footnote 37</p>	<p>Where multiple bores access the same aquifer, one bore can be sampled to provide results that are representative of a number of bores if the water supplier can demonstrate that the bore that is sampled is representative of the bores that are not sampled.</p>		
<p>4.9.2 S3 Sanitary Bore Head Requirements</p>	<p>A bore head is considered a sanitary bore head if it meets all of the following criteria:</p> <ol style="list-style-type: none"> 1. The bore head is installed above ground. 2. The bore is installed in an area of ground that is not below the surrounding ground level such that ponding could occur around the bore head during rainfall. 3. The annulus of the casing is sealed taking account of the formation that the bore has been installed in, to prevent the ingress of surface water via the outside of the casing and the bore is grouted below ground to an appropriate depth. 4. A concrete apron is installed around the bore head, extending a minimum of one metre in all directions from the casing and sloping away from the casing so that any water on the ground surface is carried away from the bore. 5. All apertures into the bore (for cables etc) are sealed and watertight to prevent access from water and vermin-proofed to prevent access by small animals etc. 6. All air vents and any other apertures that are not watertight must be screened to prevent access by small animals, face downwards, and be elevated at least 0.5 metres above the surrounding ground level. 	<p>10 Requirements for a Sanitary Bore Head</p>	<p>A bore head is a sanitary bore head for the purpose of level 3 Rules Modules if all the following criteria are met:</p> <ol style="list-style-type: none"> (a) the bore head is installed above ground: (b) the bore is installed in an area of ground that is not below the surrounding ground level such that ponding could occur around the bore head during rainfall: (c) the annulus of the casing is sealed, taking into account the formation that the bore has been installed in, to prevent the ingress of surface water via the outside of the casing and the bore is grouted below ground to an appropriate depth: (d) a concrete apron is installed around the bore head, extending a satisfactory distance in all directions from the casing and sloping away from the casing so that any water on the ground surface is carried away from the bore: (e) all openings into the bore (for cables etc) are sealed and watertight to prevent access from water and vermin-proofed to prevent access by small animals etc: (f) all air vents and any other openings that are not watertight must be screened to prevent access by small animals, face downwards, and be elevated at least 0.5 metres above the surrounding ground level: (g) reasonable security measures are in place to protect the bore head from unauthorised access or interference: (h) if the bore head is in an area where livestock are present, it must be fenced to exclude those animals from an area extending at least five metres from the bore head: (i) a mechanism prevents backflow at the bore head: (j) the bore head is inspected monthly for damage or defects and records kept of all inspections for at least five years.

	<ol style="list-style-type: none">7. Reasonable security measures are in place to protect the bore head from unauthorised access or interference.8. If the bore head is in an area where farm animals are present, it must be fenced to exclude those animals from an area extending at least five metres in all directions from the bore head.9. A mechanism prevents backflow at the bore head.10. The bore head is inspected monthly for damage or defects and records kept of all inspections for at least five years.		
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Changes to General rules

Current Rule number	Current requirement	Current parameter	Final Rule number	Final requirement	Final parameter
General rules module					
G1	Drinking water suppliers following level 1 modules must report annually— (a) whether they complied with each monitoring rule requirement; and (b) the number of quarters for which each monitoring rule requirement was not complied with during each calendar year; and (c) the supply component ID, sample ID, sample date, and test results for all samples analysed by a laboratory during the year; and (d) within 40 working days of the end of each calendar year; and in an approved form.	Assurance CP: 1 Year RP: 1 Year	G.RR.2	Drinking water suppliers demonstrating compliance against level 1 monitoring rules modules must report at the end of the compliance year— (a) the rule number and the test results required under each monitoring rule; and (b) the supply component ID, sample ID, sample date and test results for each sample analysed by or on behalf of the supplier for compliance with these rules; and (c) where continuous monitoring has been used in place of grab sampling— (i) the maximum value of the non-compliant determinand for rules with maximum limits, the minimum value of the non-compliant determinand for rules with minimum limits; and (ii) the period that any data was not recorded including the start time, finish time and duration; and (d) within 40 working days after the end of each compliance year; and (e) in an approved form.	Non-reporting
G2.1	Drinking water suppliers following level 2 monitoring rules must report quarterly— (a) whether they complied with each monitoring rule requirement; and (b) the number of months for which each monitoring rule requirement was not complied with during each quarter; and (c) the supply component ID, sample ID, sample date, and test results for all samples analysed by a laboratory taken during the quarter; and (d) within 20 working days of the end of each quarter; and (e) in an approved form.	Assurance CP: 1 Year RP: 1 Year	G.RR.3	Drinking water suppliers demonstrating compliance against level 2 monitoring rules must report at the end of each quarter for rules with a one-month or three-month compliance periods and at the end of the compliance year for rules with a one-year compliance periods— (a) the rule number and the test results required under each monitoring rule; and (b) the supply component ID, sample ID, sample date and test results for each sample analysed by or on behalf of the supplier for compliance with these rules; and (c) whether the supply complied with each monitoring rule or not for the compliance period; and (d) the number of compliance periods that each rule was not complied with; and (e) where continuous monitoring has been used in place of grab sampling— (i) the maximum value of the non-compliant determinand for rules with maximum limits, the minimum value of the non-compliant determinand for rules with minimum limits; and (ii) the period that any data was not recorded, start time, finish time and duration; and (f) within 20 working days of the end of each quarter for rules with a one-month or three-month compliance period; and (g) within 40 working days after the end of each compliance year for rules with one-year compliance periods; and (h) in an approved form.	Non-reporting
G2.2	Drinking water suppliers following level 2 assurance rules must report annually— (a) whether they complied with each assurance rule during each calendar year; and (b) within 40 working days of the end of each calendar year; and	Assurance CP: 1 Year RP: 1 Year	G.RR.4	Drinking water suppliers demonstrating compliance against level 2 assurance rules must report— (a) whether the supply complied with each assurance rule for the compliance year; and (b) within 40 working days after the end of each compliance year; and	Non-reporting

	(c) (c) in an approved form.			(c) in an approved form.	
G3	Drinking water suppliers demonstrating compliance against level 3 Rules must report to Taumata Arowai the water quality monitoring information set out in tables 5, 6 and 7.	Assurance. As set out in tables 5, 6 and 7 RP: monthly (Tables 5, 6, 7). Annually – other monitoring rules.	G.RR.5	Drinking water suppliers demonstrating compliance against level 3 treatment and distribution monitoring rules that require continuous monitoring must report monthly— (a) the rule number; and (b) the supply component ID and the determinand being continuously monitoring for compliance with these rules; and (c) whether the supply complied with each monitoring rule for the month; and (d) for every non-compliance— (i) the number of days that the rule was not complied with; and (ii) the date and duration of the non-compliance; and (iii) the maximum value of the non-compliant determinand for rules with maximum limits, the minimum value of the non-compliant determinand for rules with minimum limits; and (iv) the period that any data was not recorded, start time, finish time and duration; and (e) within 20 working days of the end of each reporting period; and (f) in an approved form.	Non-reporting
G4	Drinking water suppliers reporting against level 3 monitoring rules that are not included in tables 5, 6, and 7 must report annually within 40 working days of the end of each calendar year.				
G3 Table 5	Bacterial reporting requirements for level 3 Rules <i>If chlorine is the primary disinfectant:</i> T3.2, Chlorine C.T, CP 1 day, RP 1 month <i>If chlorine dioxide is the primary disinfectant:</i> T3.8, Chlorine dioxide C.t, CP 1 day, RP 1 month <i>If ozone is the primary disinfectant:</i> T3.13, Ozone residual, – CP 1 day, RP 1 month <i>If UV is the primary disinfectant:</i> T3.17, UV dose, CP 1 day, RP 1 month				
G3 Table 6	Protozoal reporting requirements for level 3 Rules <i>For Coagulation, Flocculation and Sedimentation without Filtration:</i> T3.24, turbidity, CP 1 day, RP 1 month <i>For Coagulation, Flocculation and Sedimentation with Filtration, Second Stage Filtration, Slow Sand Filtration, Membrane Filtration or Cartridge Filtration</i> Depending on process used, either: (T3.27 and T3.28), (T3.31 and T3.32), (T3.35 and T3.36), (T3.39 and T3.40), (T3.43 and T3.44), (T3.47 and T3.48), (T3.51 and T3.52), (T3.60 and T3.61), (T3.65 and T3.66), (T3.76 and T3.77), Turbidity, CP 1 day, RP 1 month <i>For Ozone:</i> T3.81, Ozone C.t, CP 1 day, RP 1 month <i>If UV is the primary disinfectant:</i> T3.86, UV dose, CP 1 day, RP 1 month				
G3 Table 7	Distribution zone reporting requirements for level 3 Rules D3.19, FAC, CP 1 month, RP 1 month D3.29, <i>E. coli</i> , total coliforms, CP 1 month, RP 1 month				
G3 and G4	Drinking water suppliers reporting against level 3 monitoring rules that are not included in tables 5, 6, and 7 must report annually within 40 working days of the end of each calendar year.	Assurance As set out in the relevant rules	G.RR.6	Drinking water suppliers demonstrating compliance against level 3 monitoring rules that require grab samples must report each month for rules with a one-month reporting period and after completion of the compliance year for rules with a one-year reporting period— (a) the rule number; and (b) the supply component, sample ID, sample date and sample test result for each sample analysed by or on behalf of the supplier for compliance with these rules; and (c) whether the supply complied with each rule or not for the compliance period; and (d) the number of compliance periods that each rule was not complied with; and (e) the supply component, sample ID, sample date and the sample test results for each sample analysed by or on behalf of the supplier for compliance with these rules; and (f) within 20 working days of the end of each month for rules with a one-month reporting period; and	Non-reporting
Tables 5, 6 and 7	See above for tables 5, 6 and 7.				

				(g) within 40 working days after the end of the compliance year for rules with a one-year reporting period; and (h) in an approved form.	
G5	Drinking water suppliers demonstrating compliance with level 3 rules, must report on their performance against all assurance rules annually within 40 days of the end of each calendar year.	Assurance CP: 1 Year RP: 1 Year	G.RR.7	Drinking water suppliers demonstrating compliance against level 3 assurance rules must report each month for assurance rules with a one-month reporting period and after the completion of the compliance year for assurance rules with a one-year reporting period— (a) the rule number; and (b) whether the supply complied with the assurance rule during each compliance period; and (c) within 20 working days of the end of the compliance period for assurance rules with a one-month reporting period; and (d) within 40 working days after the end of each compliance period for assurance rules with a one-year reporting period; and (e) in an approved form.	Non-reporting
N/A	N/A	N/A	G.RR.1	Drinking water suppliers demonstrating compliance against level 1, level 2, and level 3 Rules modules must include in each report— (a) the rule numbers that each reported result relates to; and (b) the supply ID and supply component of the supply being reported on; and (c) the start and end dates of reporting period (for example, the first and last day of the month, quarter, or calendar year); and (d) whether the results are from continuous monitoring, grab sampling or grab samples that substitute for continuous monitoring; and (e) the date the report was submitted; and (f) the name and email of the person submitting the report.	Non-reporting
G.SM	Sampling and monitoring rules				
G6	All samples collected from drinking water supplies for monitoring that are analysed by laboratories, must be labelled with the unique source, treatment plant, distribution zone, or Water Carrier Service identifier allocated by Taumata Arowai, to show where the sample was collected from and the time and date that the sample was collected	Assurance CP: 1 Year RP: 1 Year	G.SM.1	All samples collected from drinking water supplies for monitoring that are analysed by laboratories or on-site analysis equipment; must be labelled with— (a) the unique sample identifier; and (b) the supply ID and, where applicable, the supply component ID from which the sample was collected; and (c) the date that the sample was collected.	Assurance CP: 1 Year RP: 1 Year
G7	Drinking water suppliers must take reasonably practicable steps to ensure that samples for <i>E. coli</i> , total coliforms, or other microbiological contaminants are delivered to a laboratory within 24 hours of the sample being collected, and at a water temperature that is no higher than the water temperature at the time of sampling but above zero degrees Celsius.	Assurance CP: 1 Year RP: 1 Year	G.SM.2	Reasonably practicable steps must be taken to ensure that— (a) samples for <i>E. coli</i> , total coliforms, or other microbiological contaminants are delivered to a laboratory or analysed on-site within 24 hours of the sample being collected; and (b) samples are at a water temperature that is no higher than the water temperature at the time of sampling but above zero degrees Celsius.	Assurance CP: 1 Year RP: 1 Year
G8	All water samples that require laboratory analysis and are used to demonstrate compliance with these Rules must be: (a) analysed by a laboratory accredited by IANZ for the type of analysis being undertaken; and (b) collected according to any instructions and specifications provided by the laboratory.	Assurance CP: 1 Year RP: 1 Year	G.SM.3	All water samples that are analysed by or on behalf of a water supplier for microbiological or chemical determinands and are used to demonstrate compliance with these Rules must be— (a) analysed by a laboratory or on-site analysis system accredited by IANZ for the type of analysis being undertaken; and (b) collected according to any instructions and specifications provided by the laboratory or on-site testing equipment supplier.	Assurance CP: 1 Year RP: 1 Year

G9	Equipment used for the analysis of single samples (grab samples) by drinking water suppliers, to demonstrate compliance with any rule, must be calibrated/verified in accordance with the instrument manufacturer's specified procedures and frequency.	Assurance CP: 1 Year RP: 1 Year	G.SM.4	Equipment used for the analysis of single samples/grab samples to demonstrate compliance with these Rules, must be calibrated/verified at least in accordance with the instrument manufacturer's specified procedures and frequency.	Assurance CP: 1 Year RP: 1 Year
G.CH Capability and hygiene rules					
G10	All work (planned or unplanned) on a water supply must be completed by suitably trained or experienced personnel.	Assurance CP: 1 Year RP: 1 Year	G.CH.1	All work (planned or unplanned) on a drinking water supply must be completed by suitably trained or experienced personnel.	Assurance CP: 1 Year RP: 1 Year
G11	Drinking water suppliers must prepare a hygiene code of practice for people working on a water supply which must include: (a) maintenance of personal hygiene at all times; and (b) prohibition of people working on a water system who are experiencing any gastrointestinal illness; and (c) protection of the work site, materials, and tools from contamination; and (d) how all reasonable steps will be taken to minimise the entry of contamination into the water supply during any activity.	Assurance CP: 1 Year RP: 1 Year	G.CH.2	A hygiene code of practice must be prepared and implemented for people working on, or visitors to a drinking water supply facility and must include— (a) maintenance of personal hygiene at all times; and (b) prohibition of people working on a water system who are experiencing any gastrointestinal illness; and (c) protection of the work site, materials, and tools from contamination; and (d) how all reasonable steps will be taken to minimise the entry of contamination into the water supply during any activity.	Assurance CP: 1 Year RP: 1 Year
G12					
G12	Continuous on-line monitoring equipment used to demonstrate compliance with any rule must: (a) be calibrated in accordance with the instrument manufacturer's specified procedures and frequency; and (b) have calibration verified in accordance with the instrument manufacturer's specified procedures.	Assurance CP: 1 Year RP: 1 Year	G.CM.1	Continuous on-line monitoring equipment used to demonstrate compliance with these Rules must— (a) be calibrated in accordance with the instrument manufacturer's specified procedures and at least at the minimum frequency; and (b) have calibration verified in accordance with the instrument manufacturer's specified procedures.	Assurance CP: 1 Year RP: 1 Year
G13	For continuous monitoring equipment that is used to demonstrate compliance against treatment Rules (T1, T2, T3), the separation between data records must be no more than 1 minute. ⁷	Assurance CP: 1 Year RP: 1 Year	G.CM.2	Continuous monitoring equipment that is used to demonstrate compliance must be configured to record data at the following intervals for continuous monitoring rule requirements: (a) up to five minutes for FAC and fluoride analysers where the minimum cycle time specified by the manufacturer exceeds one minute; (b) up to one minute for all other determinands in level 1, level 2 and level 3 treatment rules; (c) up to 30 minutes for all determinands in level 3 source water rules and level 3 distribution rules.	Assurance CP: 1 Year RP: 1 Year
G13 Footnote 7	Separation between data records of up to five minutes is allowed for FAC analysers and fluoride analysers where the minimum cycle time specified by the analyser manufacturer exceeds 1 minute.				
G15	For continuous monitoring equipment that is used to assess source water or to demonstrate compliance against distribution zone Rules, the separation between data records must be no more than 30 minutes.				
G14	Generation of continuous monitoring data that is used to demonstrate compliance against T3 treatment Rules or D3 Distribution Rules, must not be interrupted for a period of more than 15 consecutive minutes, or for a total of more than 72 minutes in any one-day compliance period, for compliance to be achieved.	Assurance CP: 1 Year RP: 1 Year	G.CM.3	Where continuous monitoring is used to collect data for level 3 source water rules and continuously monitored data cannot be recorded— (a) Data recording may be interrupted for a period of up to 7 days (consecutive or intermittent) in each month; and (b) if data is interrupted for more than 7 days and/or the data cannot be recorded after a month, test results from grab samples may be used to verify compliance with relevant water quality thresholds where one grab sample	Assurance CP: 1 Year RP: 1 Year

				may be used to account for up to 7 days of lost continuous monitoring data for a period of up to 1 further month.	
			G.CM.5	Where continuous monitoring is used to demonstrate compliance with level 3 distribution rules and continuously monitored data cannot be recorded— (a) data recording may be interrupted for a period of up to 48 hours before a grab sample must be taken and grab sampling compliant with rules D3.RD.3, D3.RD.4 and D3.RD.5 must be continued; and (b) if a grab sample is used to replace continuous monitoring data fails to meet the continuous monitoring maximum/minimum limit, it must be reported as part of the reporting framework (rule G.RR.4) with a 60 minute duration for the sample datetime.	Assurance CP: 1 Year RP: 1 Year
G17	Where continuous monitoring equipment that is used to demonstrate compliance (excludes source water monitoring) fails, or is not otherwise able to provide data, grab samples can be taken to substitute for continuous data if analyses of the parameters is undertaken for at least every 30-minute period that the continuous monitoring equipment is not operating.	Assurance CP: 1 Year RP: 1 Year	G.CM.4	When continuous monitoring is used to demonstrate compliance with level 1, level 2 or level 3 treatment rules and continuously monitored data cannot be recorded— (a) data recording may be interrupted for a period of no more than 5 consecutive minutes, or for a total of no more than 15 minutes in any one-day compliance period; and (b) If data is interrupted for more than 5 consecutive minutes test results from grab samples may be used to verify compliance with relevant water quality thresholds where one grab sample may be used to account for up to 60 consecutive minutes of lost continuous monitoring data for up to 24 hours; and (c) if a grab sample used to replace supplement continuous monitoring data fails to meet the continuous monitoring maximum/minimum limits the supply must be reported as considered non-compliant with the relevant rule for the day compliance period and the supplier must report (i) the date and duration of the non-compliance; and (ii) the duration of the non-compliance.	Assurance CP: 1 Year RP: 1 Year
G16	Continuous monitoring equipment used to monitor FAC in distribution zones must be appropriately pH and temperature compensated.	Assurance CP: 1 Year RP: 1 Year	N/A	Removed	N/A

Changes to level 3 Source Water Monitoring Rules

Existing rule number	Existing requirement	Existing parameter	Final Updated number	Final Updated requirement	Final Updated parameter
S3 Source Water Common Rules					
S3.1	Water suppliers must determine the class of source water for each of the source waters that are used, based on the Source Water Protozoa Log Credit Treatment Requirements.	Assurance CP: 1 Year RP: 1 Year	S3.CR.1	The source water class of each source of a drinking water supply must be determined: (a) based on the source water classes set out in rule 8 – (level 3 Source water classes) and recorded in writing; and (b) For Class A, Class A (Interim), Class B, Class B (Interim) or, Class C (excluding (b) roof water), by a suitably qualified and experienced person (c) For Class A, Class B, or, Class C (excluding (b) roof water), a reassessment must be completed whenever there is a substantive change in baseline source water conditions and at least every five years.	Assurance CP: 1 Year RP: 1 Year
S3.3 Table 16 Footnote 34	Where multiple bores access the same aquifer, one bore can be sampled to provide results that are representative of a number of bores if the water supplier can demonstrate that the bore that is sampled is representative of the bores that are not sampled. The representative nature of the sampled bore must be re-established every five years or after significant seismic activity	Monitoring RP: 1 Year	S3.CR.2	Representative sampling may be used to demonstrate compliance if— (a) the source water is or is being determined to be, Class A, Class A (Interim), Class B or Class B (Interim), Class C ((a) groundwater); and (b) the representative sampling meets the requirements for representative sampling set out in rule 7 – Representative sampling.	Assurance CP: 1 year RP: 1 Year
S3.4 Table 17 Footnote 37	See above wording.				
S3.4	All groundwaters must be monitored for the radiological determinands set out in Table 17.	Monitoring	S3.CR.3	Each Class A, Class B and Class C (a) groundwater source must be monitored at least once every 10 years for the following radiological and chemical determinands: (a) gross alpha activity: (b) gross beta activity: (c) potassium 40.	Non-reporting
S3.4 Table 17 Table 17 Footnote 38	S3 Class 1, Class 2 and Class 3 Groundwater Source Monitoring Determinands Determinands monitored at each source ^{36 37} Radiological – sampled every 10 years: Gross alpha activity and Gross beta activity Chemical – sampled every ten years: Potassium ³⁸ When samples are analysed for alpha and beta emitting particles a sample for potassium must also be analysed so that the potassium 40 contribution to beta emitting particles can be determined.	RP: 1 Year Sampling Frequency: Every ten years			
Class A, Class A (Interim), Class B and Class B (Interim) Source Water Rules					
S3.2	A drinking water supplier demonstrating Class 1 or Interim Class 1 groundwater must document whether or not the bore meets the requirements of a sanitary bore head.	Assurance CP: 1 Year RP: 1 Year	S3.AB.1	(a) Each bore must meet the requirements for a sanitary bore head set out in rule 9 (Requirement for a sanitary bore head). (b) A sanitary bore head must be demonstrated to meet the requirements by a written assessment from a suitably qualified and experienced person at least once every five years.	Assurance CP: 1 year RP: 1 Year
S3.3	All source waters must be monitored for the determinands and at the frequencies set out in Table 16 ...	Monitoring	S3.AB.2	Each Class A and Class B groundwater source must be monitored at least twice every month for the following:	Monitoring

		RP: 1 Year		(a) <i>E. coli</i> : (b) Total coliforms.	CP: 1 month RP: 1 Month
Table 16	Determinands to be tested at each abstraction point ^{33 34} <i>E. coli</i> and total coliforms monitored twice a month	Sampling Frequency: 2 per month			
N/A	N/A	N/A	S3.AB.3	Class A groundwater sources must be monitored for evidence of F-specific bacteriophage by analysis of three evenly spaced samples at least each compliance year.	Monitoring CP: 1 Year RP: 1 Year
S3.3 Table 16	Determinands to be tested at each abstraction point ^{33 34} Iron manganese, colour, nitrate monitored monthly.	Monitoring RP: 1 Year Sampling Frequency: Monthly	S3.AB.4	(a) Each groundwater source must be monitored at least once every month for the following: (i) Iron: (ii) Manganese: (iii) Nitrate. (b) Where 12 consecutive sampling results for iron or manganese sampled under (a) are not more than 50% of the MAV, sampling may reduce to once every twelve months, but if a result exceeds 50% of the MAV, sampling must return to monthly under (a).	Monitoring CP: 1 month RP: 1 Month
S3.3	All source waters must be monitored for the determinands and at the frequencies set out in ... Table 18.	Monitoring RP: 1 Year Sampling Frequency: Monthly for 12 months Every 6 months if there is no significant variation in the initial 12 months of samples.	S3.AB.5	Each groundwater source or the water from a combination of groundwater sources must be monitored continuously for the following: (a) conductivity (must be prior to raw water storage or treatment): (b) pH (can be monitored post treatment if a treatment process that affected pH [excluding chlorination and fluoridation] is not used): (c) turbidity (can be monitored post treatment the turbidity is not changed by a treatment process).	Assurance CP: 1 year RP: 1 year
Table 18	Determinands to be tested at each abstraction point ^{33 34} Conductivity, pH, turbidity				
S3.3 Table 16	S3 Source Water Monitoring Determinands Determinands to be tested at each abstraction point ^{33 34} - Alkalinity, antimony, arsenic, barium, cadmium, calcium, chloride, chromium, copper, lead, magnesium, mercury, nickel, sodium, sulphate monitored annually ³⁵	Monitoring RP: 1 Year Sampling Frequency: Annually	S3.AB.6	(a) Each groundwater source must be monitored at least once every 12 months for the following: (i) alkalinity: (ii) antimony: (iii) arsenic: (iv) boron (v) cadmium: (vi) chloride: (vii) chromium: (viii) copper: (ix) fluoride (x) hardness (xi) lead: (xii) mercury: (xiii) nickel:	Monitoring CP: 1 Year RP: 1 Year
S3.6	Monitoring of source water must be undertaken for any determinand additional to those set out in Table 16 and 18 if the determinand has been identified in the drinking water supply Source Water Risk Management Plan as presenting a potential risk to the drinking water supply.	Monitoring RP: 1 Year As determined by the Source Water Risk			

Table 16 Footnote35	Must be sampled monthly if the determinand exceeds 50% of its MAV. Sampling may return to annually after 12 consecutive samples are less than 50% of the MAV.	Management Plan		(xiv) sodium: (xv) sulphate. (b) Where a sampling result for a determinand in (a) exceeds 50% of the MAV, sampling must increase to at least every month until 12 consecutive monthly test results are not more than 50% of the MAV, then annual sampling can resume under (a).	
Class C and D Source Water Rules					
S3.3 Table 18	Class 2, 3 & 4 - Conductivity, pH, Turbidity monitored continuously ⁴¹	Monitoring RP: 1 Year	S3.CD.1	Each source water or the combined water from multiple sources must be monitored continuously for the following: a. conductivity: b. pH: c. Turbidity.	Assurance CP: 1 Day RP: 1 Year
Footnote 39	If water is abstracted from more than one source and combined at the treatment plant, only the combined water needs to be analysed and this can be done at the treatment plant before any form of treatment.				
S3.3 Table 16	Determinands to be tested at each abstraction point ^{33 34} - <i>E. coli</i> and total coliforms monitored twice a month	Monitoring RP: 1 Year	S3.CD.2	Each source water must be monitored at least twice every month for the following: (a) <i>E. coli</i> : (b) total coliforms.	Monitoring CP: 1 month RP: 1 Month
S3.3 Table 16	Determinands to be tested at each abstraction point ^{33 34} ³⁴ • Iron manganese, colour, nitrate	Monitoring RP: 1 Year	S3.CD.3	(a) Each source water must be monitored at least once every month for the following: (i) iron: (ii) Manganese: (iii) nitrate: (iv) Colour (not required for Class C (a) groundwater) (b) Where 12 consecutive sampling results for iron or manganese sampled under (a) are not more than 50% of the MAV, sampling may reduce to every twelve months, but if a result exceeds 50% of the MAV, sampling must return to monthly under rule (a).	Monitoring CP: 1 month RP: 1 Month
S3.3 Table 16	S3 Source Water Monitoring Determinands Determinands to be tested at each abstraction point ^{33 34} - Alkalinity, antimony, arsenic, barium, cadmium, calcium, chloride, chromium, copper, lead, magnesium, mercury, nickel, sodium, sulphate monitored annually ³⁵	Monitoring RP: 1 Year	S3.CD.4	(a) Each source water must be monitored at least every 12 months for the following: (i) alkalinity: (ii) antimony: (iii) arsenic: (iv) boron: (v) cadmium: (vi) chloride: (vii) chromium: (viii) copper: (ix) fluoride: (x) hardness: (xi) lead: (xii) mercury: (xiii) nickel: (xiv) sodium: (xv) Sulphate. (a) (b) Where a sampling result for a determinand in (a) exceeds 50% of the MAV, sampling must increase to at least every month until 12 consecutive monthly results are not more than 50% of the MAV, then annual sampling can resume under (a).	Monitoring CP: 1 year RP: 1 Year
S3.6 Footnote 35	See S3.AB.8 above.	Monitoring RP: 1 year (determined by SWRMP)			

S3.7	Water sources must be categorised as either low-risk, medium-risk or high-risk for the presence of cyanobacteria.	Assurance CP: 1 Year RP: 1 Year	S3.CD.5	<p>(a) Each Class C source water that meets rule 8(5)(d) and Class D source water must be assessed to determine—</p> <ul style="list-style-type: none"> (i) whether it has a high, medium, or low likelihood for the presence of planktonic and/or benthic cyanobacteria and /or cyanotoxins in water at the point of abstraction; and (ii) Locations/habitats in the source water where cyanobacteria are most likely to be present. (iii) when cyanobacteria are most likely to be present (including October to May). <p>(b) The assessment must be:</p> <ul style="list-style-type: none"> (i) undertaken by a suitably qualified and experienced person; and (ii) recorded in writing; and (iii) and renewed whenever there is a substantive change in baseline source water conditions and at least every five years. 	Assurance CP: 1 year RP: 1 Year
N/A	N/A	N/A	S3.CD.6	Where source waters have a low likelihood of planktonic or benthic cyanobacteria, visual or other suitable inspections of the source water and area around the point of abstraction must be undertaken at least every month during the period when cyanobacteria are most likely to be present to determine if cyanobacteria are likely to be present and if evidence of cyanobacteria is found, the assessment of the likelihood must be repeated without delay.	Assurance CP: 1 year RP: 1 Year
S3.8	When a water supply is categorised as medium or high-risk under rule S3.7, a cyanobacteria / cyanotoxin response plan must be prepared which includes vigilance levels for assessing the presence of cyanobacteria and alert levels related to the presence of cyanotoxins, monitoring for cyanobacteria/cyanotoxins and the action that will be taken to protect consumers.	Assurance CP: 1 Year RP: 1 Year	S3.CD.7	<p>Where source waters that have a medium or high likelihood of planktonic cyanobacteria or cyanotoxins at the point of abstraction, either (a) or (b) or (c) and (d) must be followed:</p> <ul style="list-style-type: none"> (a) water leaving the treatment plant must be tested in accordance with rules T3.CY.1(a) and T3.CY.2 during the period identified in rule S3.CD.5 as the period that cyanobacteria are most likely to be present (including October to May): (b) the source water must be tested for cyanotoxins that have a MAV— <ul style="list-style-type: none"> (i) monthly during the period identified in rule S3.CD.5 as the period that cyanobacteria are most likely to be present (including October to May); and (ii) where cyanotoxins are identified those cyanotoxins must be tested in water leaving the treatment plant in accordance with rules T3.CY.1(b) and T3.CY.2: (c) source water samples must be analysed by microscopy (cell counts, and biovolumes for picocyanobacteria) during the period that cyanobacteria are likely to be present (including October to May)— <ul style="list-style-type: none"> (i) weekly if the source has been assessed as having high likelihood in rule S3.CD.5; or (ii) monthly if the source has been assessed as having medium likelihood in rule S3.CD.5; and (d) if cyanobacterial cell concentrations or bio-volumes (picocyanobacteria) exceed any of the following thresholds: <ul style="list-style-type: none"> • 550 cells/mL for potential anatoxin-producing cyanobacteria: • 50 cells/mL for potential cylindrospermopsin-producing cyanobacteria: • 65 cells/mL for potential microcystin- / nodularin-producing cyanobacteria: • 220 cells/mL for potential saxitoxin-producing cyanobacteria: 	Monitoring CP: 1 month RP: 1 Month
S3.9	If a water supplier becomes aware of the presence of cyanobacteria in source water, monitoring to determine the level of cyanobacteria and/or cyanotoxin levels must be considered in accordance with the cyanobacteria/cyanotoxin response plan.	Assurance CP: 1 Year RP: 1 Year			

				<ul style="list-style-type: none"> 0.0012 mm³/L for potential microcystin-producing picocyanobacteria (including <i>Synechocystis</i> sp.); <p>then either—</p> <ul style="list-style-type: none"> (i) water leaving the treatment plant must be tested for the relevant cyanotoxins (depending on the cyanobacteria threshold exceeded) in accordance with rules T3.CY.1(b) and T3.CY.2; or (ii) the source water must be tested for the presence of either— <ul style="list-style-type: none"> a. cyanotoxin production genes; or b. relevant cyanotoxins (depending on the cyanobacteria threshold exceeded); and c. where cyanotoxin production genes are identified or cyanotoxins are identified then water leaving the treatment plant must be tested for those cyanotoxins in accordance with rules T3.CY.1(b) and T3.CY.2. 	
S3.8 and S3.9	See S3.CD.7 above	See above	S3.CD.8	<p>Where source waters that have a medium or high likelihood of benthic cyanobacteria or cyanotoxins at the point of abstraction, either (a) or (b) or (c) must be followed:</p> <ul style="list-style-type: none"> (a) water leaving the treatment plant must be tested in accordance with rules T3.CY.1(a) and T3.CY.2 during the period identified in rule S3.CD.5 as the period that cyanobacteria are most likely to be present (including October to May): (b) the source water must be tested for cyanotoxins that have a MAV, monthly during the period identified in rule S3.CD.5 as the period that cyanobacteria are most likely to be present (including October to May) and where cyanotoxins are identified those cyanotoxins must be tested in water leaving the treatment plant in accordance with rules T3.CY.1(b) and T3.CY.2; or (c) the source water must be monitored by visual or other inspection for the presence of cyanobacteria mats during the period that cyanobacteria mats are likely to be present— <ul style="list-style-type: none"> (i) weekly if the source has been assessed as having high likelihood in rule S3.CD.5; or (ii) monthly if the source has been assessed as having medium likelihood in rule S3.CD.5; and (iii) if benthic <i>Microcoleus</i> has been identified, either— <ul style="list-style-type: none"> a. the water leaving the treatment plant must be tested for anatoxin in accordance with rule T3.CY.1(b) and T3.CY.2; or b. a mat coverage assessment must be undertaken and if mat cover exceeds 20% or floating mats are observed on the water surface or the edges of the stream, the source water tested monthly or treated water must be tested in accordance with rule T3.CY.1(b) and T3.CY.2 for the presence of anatoxins; and (iv) if benthic cyanobacteria other than <i>Microcoleus</i> are observed, mat samples must be analysed for cyanobacterial identification and if potential toxin producing cyanobacteria are identified, either— 	Monitoring CP: 1 Month RP: 1 Month

				<ul style="list-style-type: none"> a. the water leaving the treatment plant must be tested for the cyanotoxins produced by those cyanobacteria in accordance with rules T3.CY.1(b) and T3.CY.2; or b. monthly testing must be undertaken on the cyanobacterial mats for cyanotoxin production genes or relevant cyanotoxins (depending on the cyanobacterial species identified) or the source water for relevant cyanotoxins (depending on the cyanobacterial species identified); and c. if cyanotoxins or cyanotoxin production genes are identified from testing source water or benthic mats, the water leaving the treatment plant must be tested for those cyanotoxins in accordance with rules T3.CY.1(b) and T3.CY.2. 	
S3.5	Additional monitoring of Class 2, Class 3 and Class 4 source waters must be undertaken either during or immediately after a severe or extreme weather event or other events which could adversely affect source water quality. ^{31 32}	Monitoring	N/A	Removed	N/A
S3.5 Footnote 31 and 32	Samples of raw water may be collected at the treatment plant for this purpose. Samples should not be collected if there are health and safety risks to people collecting samples that are not appropriately eliminated or minimised.	RP: Annually (Event based)			
Table 16 Footnote 33	Samples may be collected either at the source abstraction point or at the treatment plant before any form of treatment, if water is from a single source. If multiple sources are used, samples must be collected from each source at points	N/A	N/A	Removed	N/A
Table 17 Footnote 36	Samples may be collected either at the source abstraction point or at the treatment plant before any form of treatment, if water is from a single source. If multiple sources are used, samples must be collected from each source at points before any mixing of source water occurs.	N/A	N/A	Removed	N/A
Table 18 Footnote 40	If a six monthly sample varies significantly from previous samples, sampling should return to monthly for 12 months.	N/A	N/A	Removed	N/A
Table 18 Footnote 41	Where continuous monitoring analysers fail or require maintenance, daily grab samples can be taken until the continuous monitoring equipment can be brought back into service.	N/A	N/A	Removed	N/A

Changes to level 3 Bacteria and Virus Treatment Rules

Current rule number	Current requirement	Current parameter	Final rule number	Final requirement	Final parameter
T3 Bacteria and Virus Treatment common Rules					
T3.1	All water passing through the treatment plant must be treated with chlorine and must be monitored in accordance with Table 19	Monitoring CP: 1 Day RP: 1 Year	T3.BC.1	All drinking water supplied must pass through a treatment plant and if Class B, Class B (Interim), Class C or Class D source water is used, fully comply with the relevant bacteria and virus monitoring Rules to provide an effective barrier to bacterial and viral contaminants each day.	Assurance CP: 1 day RP: 1 Month
T3.7	All water passing through the treatment plant must be treated with chlorine and must be monitored in accordance with Table 19				
T3.12	All water passing through the treatment plant must pass through the ozone contactor and must be monitored in accordance with Table 21.				
T3.15	All water passing through the treatment plant must pass through the UV reactor(s) and be within the reactor's certified flow range and must be monitored in accordance with Table 22				
Section 4.10.1	T3 Bacterial Rules One or more of the following options must be used to demonstrate bacterial compliance: 1. Disinfection with chlorine ⁴² 2. Disinfection with chlorine dioxide 3. Disinfection with ozone 4. Disinfection with UV light	N/A	T3.BC.2	For Class B, Class B (Interim), Class C and Class D source waters, one or more of the following treatment options must be used to demonstrate bacteria and virus barrier compliance: (a) FAC (b) chlorine dioxide (c) ozone: (d) UV light.	Assurance CP: 1 Year RP: 1 Year
Section 4.10.1 Footnote 42	For Self-supplied Buildings supplies that provide water to more than a single building chlorine must be used to demonstrate bacterial compliance.				
T3.1 Table 19	T3 Requirements for Drinking Water Disinfected with Chlorine Parameters that need to be continuously monitored and where they need to be monitored: FAC and pH	Monitoring CP: 1 Day RP: 1 Year	T3.BC.3	Drinking water leaving a treatment plant must be continuously monitored for the following: (a) FAC (at a point after which chlorine has been well-mixed): (b) pH (at a point after which chlorine has been well-mixed): (c) Turbidity (post treatment but can be prior to contact tanks or storage). <i>Note: This rule does not apply to Self-supplied Buildings.</i>	Assurance CP: 1 Year RP: 1 Year
T3.1	All water passing through the treatment plant must be treated with chlorine and must be monitored in accordance with Table 19	Monitoring CP: 1 Day RP: 1 Year	T3.BC.4	Drinking water leaving a treatment plant must meet the following limits: (a) FACE of not less than 0.2 mg/L: (b) turbidity less than 5 NTU for at least 98% of the time the plant is producing drinking each day. (c) Turbidity must not exceed 10NTU at any time. <i>Note: This rule does not apply to Self-supplied Buildings.</i>	Monitoring CP: 1 Day RP: 1 Month
T3.3	Treated water must have a FACE of no less than 0.2 mg/L.				
T3.5	Turbidity of water leaving the treatment plant must be less than 1.0 NTU for at least 95% of each day.				

T3 Bacterial Rules for Water Disinfected with Chlorine					
T3.1	All water passing through the treatment plant must be treated with chlorine and must be monitored in accordance with Table 19	Monitoring CP: 1 Day RP: 1 Year	T3.BF.1	Drinking water treated by FAC treatment processes must be continuously monitored for the following: (a) Turbidity (after the outlet of the contact tank, before the lime is dosed, where lime is used for post-treatment pH adjustment): (b) FAC (after the outlet of the contact tank): (c) PH (after the outlet of the contact tank): (d) FACE (calculated with FAC and pH): (e) flow (at the outlet of the contact tank; the inlet of the contact tank if a high-level outlet weir is installed or a calculated outlet flow based on inlet flow and contact level change): (f) contact tank level (if used to determine T ₁₀ contact time and C.t value): (g) T ₁₀ contact time: (h) C.t value.	Assurance CP: 1 Year RP: 1 Year
T3.1 Table 19	T3 Requirements for Drinking Water Disinfected with Chlorine Parameters that need to be continuously monitored and where they need to be monitored: FAC, pH, Turbidity, Flow, Water level, FACE, T10 Contact Time, C.t.	Monitoring CP: 1 Day RP: 1 Year			
T3.5 Footnote 43	Where lime is used for post-treatment pH adjustment, analysis may be undertaken before the lime is dosed				
T3.2	Treated water must achieve a chlorine C.t value of at least 15 min.mg/L for at least 95 % of each day.	Monitoring CP: 1 Day RP: 1 Month	T3.BF.2	Drinking water treated with FAC leaving the treatment plant must meet the following requirements: (a) chlorine C.t value must be at least 15 min.mg/L for at least 95% of the time the plant is producing drinking water each day: (b) T ₁₀ contact time must be demonstrated to be of at least 5 minutes: (c) turbidity must be less than 1.0 NTU for at least 95% of the time the plant is producing drinking each day: (d) turbidity must not exceed 2.0 NTU for more than 15 consecutive minutes.	Monitoring CP: 1 Day RP: 1 Month
T3.4	T ₁₀ contact time of at least 5 minutes must be demonstrated.	Monitoring CP: 1 Day RP: 1 Year			
T3.5	Turbidity of water leaving the treatment plant must be less than 1.0 NTU for at least 95% of each day. ⁴³				
T3.6	Turbidity must not exceed 2.0 NTU for the duration of any consecutive 15-minute period.				
T3 Bacterial Rules for Water Disinfected with Chlorine Dioxide					
T3.8	Treated water must achieve a chlorine C.t value of at least 15 min.mg/L for at least 95 % of each day.	Monitoring CP: 1 Day RP: 1 Year	T3.BD.1	Drinking water treated by chlorine dioxide treatment processes must be continuously monitored for the following: (a) chlorine dioxide residual (at the outlet of the contact tank - alternative monitoring sites may be used if the drinking water supplier can demonstrate that they provide equivalent accuracy to monitoring at the outlet of the contact tank); (b) turbidity (at a point immediately before or after the contact tank or point that can be shown to be equivalent, i.e. no significant change in turbidity); (c) flow (at the outlet of the contact tank or inlet of the contact tank, if a high-level outlet weir is installed): (d) temperature of water leaving the contact tank; (e) the water level in the contact tank (if not controlled at a constant level by a weir or similar); (f) T10 contact time; (g) C.t value.	Assurance CP: 1 Year RP: 1 Year
T3.7 Table 20	Parameters that need to be continuously monitored and where they need to be monitored: Chlorine dioxide, FAC, pH, Turbidity, Flow, Water level in the contact tank (if used) Values that need to be continuously monitored: FACE if chlorine is used in combination with chlorine dioxide, Total disinfectant, T10 contact time and C.t	Monitoring CP: 1 Day RP: 1 Year			
T3.10 Footnote 44	Where lime is used for pH adjustment, samples may be taken before the lime is dosed				

T3.9	T ₁₀ contact time of at least 5 minutes must be demonstrated.	Monitoring CP: 1 Day RP: 1 Year	T3.BD.2	Drinking water treated by chlorine dioxide leaving the treatment plant must meet the following requirements: (a) the total chlorine dioxide dose used in the process must be less than 0.8 mg/l; (b) chlorine dioxide C.t value must be at least 33 min.mg/L for at least 95% of the time the plant is producing drinking water each day; (c) T ₁₀ contact time must be demonstrated to be of at least 5 minutes; (d) turbidity must be less than 1.0 NTU for at least 95% of the time the plant is producing drinking water each day; (e) turbidity must not exceed 2.0 NTU for more than 15 consecutive minutes.	Monitoring CP: 1 Day RP: 1 Month
T3.10	Turbidity of water leaving the treatment plant must be less than 1.0 NTU for at least 95% of each day. ⁴⁴	Monitoring CP: 1 Day			
T3.11	Turbidity must not exceed 2.0 NTU for the duration of any consecutive 15-minute period.	RP: 1 Year			
T3 Bacterial Rules for Water Disinfected with Ozone					
T3.12 Table 21	Requirements for Water Disinfected with Ozone Parameters that need to be continuously monitored and where they need to be monitored: Ozone Residual, Turbidity, Flow, level of water in the contact tank (if used), T ₁₀ Contact Time and C.t.	Monitoring CP: 1 Day RP: 1 Year	T3.BO.1	Drinking water treated by ozone treatment processes must be continuously monitored for the following: (a) ozone residual at the outlet of the contact tank (alternative monitoring sites may be used if the water supplier can demonstrate that they improve the accuracy of the monitoring information); (b) turbidity (at a point immediately before or after the contact tank); (c) flow (at the outlet of the contact tank or inlet of the contact tank, if a high-level outlet weir is installed); (d) temperature of water leaving the contact tank; (e) the water level in the contact tank; (f) T ₁₀ Contact Time; and (g) C.t.	Assurance CP: 1 Year RP: 1 Year
Table 21 Footnote 45	Additional monitoring sites may be used in addition to the contact tank exit point if the water supplier can demonstrate that they improve the accuracy of the monitoring information.				
T3.13	C.t of at least 1.2 mg.min/L for more than 95% of each day must be achieved.	Monitoring CP: 1 Day RP: 1 Month	T3.BO.2	The following requirements must be met for turbidity and ozone: (a) turbidity of water leaving the contact tank must not exceed 5.0 NTU for the duration of any consecutive 15-minute period. (b) an ozone C.t value of at least 1.2 min.mg/L for at least 95% of the time the plant is producing drinking water each day.	Monitoring CP: 1 Day RP: 1 Month
T3.14	Turbidity must not exceed 5.0 NTU for the duration of any consecutive 15-minute period.	Monitoring CP: 1 Day RP: 1 Year			
T3 Bacterial Rules for Water Disinfected with Ozone					
T3.15 Table 22	UV certification/validation: The equipment must be certified and operated to meet the RED dose of 40 mJ/cm ² (or equivalent) using at least one of the: <i>Ultraviolet Disinfection Guidance Manual (USEPA 2006b).</i> <i>DVGW Technical Standard W294 (DVGW 2006)</i> <i>ÖNORM M 5873-1: 2020 01 01.</i> ⁴⁸ <i>NSF/ANSI 55 (NSF, ANSI nd) for Class A systems (for populations of up to 5000) – 3-log.</i>	Monitoring CP: 1 Day RP: 1 Year	T3.BU.1	UV units must be validated to (and operated within the specifications of) a designated UV validation standard.	Assurance CP: 1 Year RP: 1 Year
Table 22 Footnote 48	UV reactors installed before 1 January 2020 can be certified to öNORM M5873 (Osterreichisches Normungsinstitut 2001).				

T3.15 Table 22	T3 Requirements for UV Disinfection Parameters that need to be continuously monitored and where they need to be monitored: UVT, Turbidity, UVI or dose, Flow	Monitoring CP: 1 Day RP: 1 Year	T3.BU.2	Drinking water treated by UV light must be continuously monitored for the following: (a) UVT, at a point where water enters or leaves the UV unit(s), except UV units validated to NSF/ANSI 55 - Class A: (b) turbidity, at a point where water enters or leaves the UV unit(s), including upstream filter monitoring if there is no other process between the filters and the UV unit(s): (c) UVI or UV dose, (at the designated points in the UV unit as that used for certification/validation): flow, at a point representative of water entering or leaving the units, which meets the relevant validation requirements.	Assurance CP: 1 Year RP: 1 Year
Table 22 Footnote 47	Does not apply to UV units certified to <i>NSF/ANSI 55 (NSF, ANSI nd) for Class A systems (for populations of up to 5000) – 3-log.</i>				
T3.85	All water passing through the treatment plant must pass through the UV reactor(s) and be within the reactor’s certified flow range for at least 95% of each day.	Assurance CP: 1 Year RP: 1 Year	T3.BU.3	Water flow rate must be within the UV unit’s certified flow range for at least a minimum RED dose of 40 mJ/cm ² (or equivalent) for at least 95% of the time the UV unit(s) is/are operating each day.	Assurance CP: 1 Year RP: 1 Year
T3.16	A reduction equivalent dose (RED) of not less than 40 mJ/cm ² (or equivalent) must be achieved for not less than 95 % of each day.	Monitoring CP: 1 Day RP: 1 Year	T3.BU.4	A RED-of not less than 40 mJ/cm ² (or equivalent) must be achieved for not less than 95% of the time the UV units(s) is/are producing drinking water each day.	Monitoring CP: 1 Day RP: 1 Month
T3.17	The RED UV dose must be not less than 40 mJ/cm ² for any consecutive 15-minute period.	Monitoring CP: 1 Day RP: 1 Year	T3.BU.5	The RED delivered by a UV unit(s) must not be less than 40 mJ/cm ² (or equivalent) for the duration of any consecutive 15-minute period.	Monitoring CP: 1 Day RP: 1 Month
T3.18	Turbidity must not exceed 5.0 NTU for the duration of any consecutive 15-minute period.	Monitoring CP: 1 Day RP: 1 Year	T3.BU.6	Turbidity of water entering the UV unit(s) when it is in service must not exceed 5.0 NTU for the duration of any consecutive 15-minute period.	Monitoring CP: 1 Day RP: 1 Month
T3.19	For UV units certified to Ultraviolet Disinfection Guidance Manual (USEPA 2006b) monitored UVI, UVT and flow must be used to calculate dose.	Assurance CP: 1 Year RP: 1 Year	T3.BU.7	UV units validated to USEPA UVDGM must calculate dose using— (a) UVI and flow, if set-point dose approach is used; or (b) UVI, flow, and UVT, if calculated dose approach used.	Non-reporting
T3.20	For UV units certified to DVGW Technical Standard W294 (DVGW 2006) or ÖNORM M 5873-1: 2020 01 01 ⁴⁶ monitored flow must be used for UVI control or the reactor run at full power. UVI and UVT must be more than the validated value for the respective flow.	Assurance CP: 1 Year RP: 1 Year	T3.BU.8	UV units validated to DVGW; ÖNORM; or DIN must— (a) use monitored flow for UVI control; or (b) be run at full power; and (c) UVI and UVT must be more than the validated value for the respective flow.	Non-reporting
T3.21	For UV units certified to NSF/ANSI 55 Class A (NSF, ANSI n.d.); (for populations of up to 5000) – 3-log a fault must be generated when any parameter exceeds the certified value.	Assurance CP: 1 Year RP: 1 Year	T3.BU.9	UV units validated to NSF/ANSI 55 – Class A must generate a fault when any parameter exceeds the validated value.	Non-reporting
Table 22	UVI sensor checking and standardisation: Duty UVI sensors must be checked at least monthly against the reference sensor. If the difference between the two readings exceeds the manufacturer’s specified limits, then the Duty UVI sensor must be replaced.	Monitoring CP: 1 Month RP: 1 Year	T3.BU.10	UVI sensors must meet the following requirements: (a) duty UVI sensors must be— (i) checked at least every month against the reference sensor; and	Assurance CP: 1 Year RP: 1 Year

	The reference UVI sensor must be standardised at least annually in accordance with Ultraviolet Disinfection Guidance Manual (USEPA 2006b) or other traceable procedure. Alternatively, after 12 months the drinking water supplier can use the reference sensor as a duty sensor and purchase a new standardised sensor for use as a reference sensor.			<ul style="list-style-type: none"> (ii) replaced if the difference between the duty and reference readings exceeds the manufacturer’s specified limits: (b) a reference UVI sensor must— <ul style="list-style-type: none"> (i) have been purchased in the last 24 months; or (ii) be standardised at least every 12 months in accordance with the USEPA UVDGM or other traceable procedure: (c) after 24months of use, the reference sensor can be used as a duty sensor and a new standardised sensor must be used as a reference sensor. 	
T3.20 Footnote 46	Or UV reactors certified to öNORM M5873 (Osterreichisches Normungsinstitut 2001)	N/A	N/A	Removed.	N/A
Table 32 Footnote 56	These requirements do not apply to UV disinfection systems that automatically adjust the UV dose as the UVT of the water flowing through the reactor varies.	N/A	N/A	Removed	N/A

Changes to level 3 Protozoa Treatment Rules

Current rule number	Current requirement	Current parameter	Final rule number	Final requirement	Final parameter
T3 Protozoa Treatment Common Rules					
T3.26	All water passing through the treatment plant must pass through the coagulation, flocculation, and filtration process	Assurance CP: 1 Year RP: 1 Year (for all Rules)	T3.PC.1	All drinking water supplied must— (a) pass through a treatment plant; and (b) If Class C or Class D source water is used, fully comply with the relevant protozoa monitoring Rules to provide an effective barrier to protozoal contaminants each day.	Assurance CP: 1 Day RP: 1 Month
T3.38, T3.42 and T3.46	All water passing through the treatment plant must pass through the coagulation, flocculation, sedimentation, and filtration process.				
T3.63	All water passing through the treatment plant must pass through the cartridge filtration process.				
T3.73	All water passing through the treatment plant must pass through the membrane filtration process.				
T3.80	All water passing through the treatment plant must pass through the ozone process.				
T3.85	All water passing through the treatment plant must pass through the UV reactor(s) and be within the reactor’s certified flow range for at least 95% of each day.				
T3.22	Drinking water supplies must have a protozoa barrier that provides treatment equal to or exceeding the log level of the water class identified by the Source Water Protozoa Log Credit Treatment Requirements.	Assurance CP: 1 Year RP: 1 Year	T3.PC.2	The following minimum levels of protozoa treatment must be met by treatment processes based on the source water class determined rule 8 (level 3 source water classes): (a) Class A, Class A (Interim), Class B, Class B (Interim): 0-log (protozoa treatment not required): (b) Class C: 3-log: (c) Class D: 4-log.	Assurance CP: 1 Year RP: 1 Year
Section 4.10.2	Treatment processes and log credit allocations The processes that can be used for protozoal treatment, and the log credits that can be achieved are: <ol style="list-style-type: none"> 1. Coagulation, flocculation and sedimentation process without filtration [0.5-Log] 2. Coagulation, flocculation and direct filtration [2.5-3.5-Log] 3. Coagulation, flocculation, sedimentation, and filtration [3-4-Log] 4. Second stage filtration [0.5-Log] 5. Slow sand filtration [2.5-Log] 6. Membrane filtration [up to 4.0-Log] 7. Cartridge filtration [2.0-Log] 8. Ozone [0.25 to 3.0-Log] 9. Ultraviolet light [up to 4-Log] 	N/A	T3.PC.3	Class C and Class D source water must be treated to control protozoa to the level determined in rule T3.PC.2 by one or more of the following treatment processes: (a) coagulation and direct filtration (2.5-log and 3.0 log): (b) coagulation, flocculation, sedimentation (includes dissolved air floatation), and filtration (3.0-log to 4-log): (c) cartridge filtration (2.0-log): (d) membrane filtration (up to 4.0-log): (e) ozone (3.0-log): (f) ultraviolet light (3.0-log or 4.0-log).	Assurance CP: 1 Year RP: 1 Year

Section 4.10.2	The cumulative log credits of a process that includes filtration or sedimentation and a disinfection process can be calculated by adding the log credits of the qualifying processes that are used.	N/A	T3.PC.4	Where multiple treatment processes are used to meet log credit requirements, cumulative log credits can be calculated if the processes include— (a) one filtration process recognised under rule T3.PC.3 (a) to (d); and (b) one disinfection process recognised under rule T3.PC.3 (e) or (f).	Non-reporting
T3.29, Table 24	T3 Requirements for Coagulation, Flocculation and Direct Filtration	Monitoring CP: 1 Day	T3.PC.5	The following requirements apply to recycling of water from run to waste and treatment processes: (a) water recycled from the filter backwash, thickening and dewatering process must – (i) undergo effective solids/liquid separation; and (ii) water recovered from the solids/liquid separation process must be monitored for turbidity to demonstrate that the process has been effective: (b) recovered water from the solids/liquids separation process may be discharged to raw water storage, if the total recovered water volume in the raw water storage is less than 20% of the stored raw water volume at any time. (c) recovered water from the solids/liquids separation process may be returned prior to the first stage of the treatment process if— (i) it undergoes the full treatment process; and (ii) it is subject to flow equalisation demonstrated by continuous monitoring so that— a. the instantaneous total recycled water return rate does not exceed 10% of the plant inflow; or b. one or more metrics developed by a suitably qualified and experienced person and recorded in writing ensures the volumetric ratio of recycle water to raw water and/or plant inflow does not exceed 10% for more than 95% of each day or 15% for more than 15 consecutive minutes; and (iii) it does not detrimentally affect treatment processes downstream of the recycling return point (d) filter (media or membrane) run to waste water may be returned to the treatment process at any stage of the treatment process upstream of the coagulant dosing point. (e) filter clean in place (CIP) chemical wash water must not be recycled to the treatment plant, it may be reused for CIP processes.	Assurance CP: 1 Year RP: 1 Year
T3.41, T3.45 T3.49, Table 25	T3 Requirements for Coagulation, Flocculation, Sedimentation and Filtration Process limitations:	RP: 1 Year			
T3.79, Table 29	T3 Requirements for Membrane Filtration				
T3.29-recy. T3.41-recy. T3.45-recy T4.49-recy. T3.79-recy	Process limitations: Water treatment plants that recycle waste streams (excluding water from rapid media filters being diverted during restart after backwash, often called 'filter to waste') must return the recycle stream so that it undergoes the full treatment process and provide flow equalisation such that the instantaneous total return rate does not exceed 10% of the plant inflow.				
T3.29-turb T3.41-turb. T3.45-turb T3.49-turb. T3.79-turb	Process limitations: Turbidity monitoring is required to demonstrate that the recycle water has received effective solids/liquid separation. If instantaneous total return rate flows of greater than 10% of the plant inflow are recycled, separate treatment of the recycled stream is required to inactivate or kill protozoa and bacteria before the waste stream is returned to the plant inlet.				
Section 4.10.2	If two filtration processes are used, the second filtration process is considered to be second stage filtration and can add only 0.5-Log to the cumulative log credits.	N/A	N/A	Removed	N/A
T3 Protozoal Rules for Coagulation, Flocculation and Sedimentation without Filtration [0.5-Log]					
T3.23	All water passing through the treatment plant must pass through the coagulation, flocculation and sedimentation process.	Assurance CP: 1 Year RP: 1 Year	N/A	Removed	N/A
T3.24	The sedimentation process must achieve at least a 70% reduction in raw water turbidity each day, based on the arithmetic mean of the turbidity of the raw water and the water leaving the sedimentation process.	Monitoring CP: 1 Day	N/A	Removed	N/A

T3.25 Table 23	T3 Requirements for Coagulation, Flocculation and Sedimentation without Filtration Parameters that need to be continuously monitored and where they need to be monitored: Turbidity	RP: 1 Month	N/A	Removed	N/A
T3.25-lmts	Process Limitations: Sedimentation includes dissolved air flotation. Water from any treatment processes must not be added to the raw water and recycled through the plant.	Assurance CP: 1 Year RP: 1 Year			
T3 Protozoal Rules for Coagulation, Flocculation and Direct Filtration [2.5-Log]					
T3.29 Table 24	T3 Requirements for Coagulation, Flocculation and Direct Filtration Process Limitations: Filtration is of a rapid media design (pressure or gravity equivalent).	Assurance CP: 1 year RP: 1 year	T3.PD.1	Filtration must be of a rapid media design (pressure or gravity).	Non-reporting
T3.29 Table 24	T3 Requirements for Coagulation, Flocculation and Direct Filtration Parameters that need to be continuously monitored and where they need to be monitored: Turbidity and Service State	Monitoring CP: 1 Day RP: 1 Year	T3.PD.2	The turbidity of filtered water must be continuously monitored on the outlet of each filter while it is in service.	Assurance CP: 1 Year RP: 1 Year
T3.27	Turbidity must not exceed 0.3 NTU for more than 5% of each day.	Monitoring	T3.PD.3	The turbidity of filtered water leaving any filter must not exceed the following limits: (a) 0.3 NTU for more than 5% of the time the filter is in operation each day: (b) 0.5 NTU for the duration of any consecutive 15-minute period in each day.	Monitoring CP: 1 Day RP: 1 Month
T3.28	Turbidity must not exceed 0.5 NTU for the duration of any consecutive 15-minute period.	CP: 1 Day RP: 1 Month			
T3.29	All of the requirements in Table 24 must be met.	Assurance CP: 1 Year RP: 1 Year	N/A	Removed	N/A
T3 Protozoal Rules for Coagulation, Flocculation, and Direct Filtration [3.0-Log]					
T3.30	All water passing through the treatment plant must pass through the coagulation, flocculation, and filtration process.	Assurance CP: 1 Year RP: 1 Year	N/A	Removed	N/A
T3.31	Turbidity must not exceed 0.15 NTU for more than 5% of each day.	Monitoring	N/A	Removed	N/A
T3.32	Turbidity must not exceed 0.5 NTU for the duration of any consecutive 15-minute period.	CP: 1 Day RP: 1 Month	N/A	Removed	N/A
T3.33 Table 24	All of the requirements in Table 24 must be met. As above	Assurance CP: 1 Year RP: 1 Year	N/A	Removed.	N/A
T3 Protozoal Rules for Coagulation, Flocculation, and Direct Filtration [3.5-Log]					
T3.34	All water passing through the treatment plant must pass through the coagulation, flocculation and filtration process.	Assurance CP: 1 Year	N/A	Removed.	N/A

		RP: 1 Year			
T3.35	Turbidity must not exceed 0.1 NTU for more than 5% of each day.	Monitoring	N/A	Removed.	N/A
T3.36	Turbidity must not exceed 0.3 NTU for the duration of any consecutive 15-minute period.	CP: 1 Day RP: 1 Month	N/A	Removed.	N/A
T3.37 Table 24	T3 Requirements for Coagulation, Flocculation and Direct Filtration	Assurance CP: 1 Year RP: 1 Year	N/A	Removed.	N/A
T3 Protozoal Rules for Coagulation, Flocculation, Sedimentation, and Filtration [3-Log]					
T3.41 Table 25	T3 Requirements for Coagulation, Flocculation, Sedimentation and Filtration Process Limitations: Filtration is of a rapid media design (pressure or gravity equivalent).	Assurance CP: 1 Year RP: 1 Year	T3.PF.1	Filtration must be of a rapid media design (pressure or gravity).	Non-reporting
T3.41 Table 25	T3 Requirements for Coagulation, Flocculation, Sedimentation and Filtration Parameters that need to be continuously monitored and where they need to be monitored: Turbidity and Service State	Monitoring CP: 1 Day RP: 1 Year	T3.PF.2	The turbidity of filtered water must be continuously monitored on the outlet of each filter while it is in service.	Assurance CP: 1 Year RP: 1 Year
T3.39	Turbidity must not exceed 0.3 NTU for more than 5% of each day.	Monitoring	T3.PF.3	The turbidity of filtered water leaving any filter must not exceed the following limits: (a) 0.3 NTU for more than 5% of the time the filter is in operation each day: (b) 0.5 NTU for the duration of any consecutive 15-minute period in each day.	Monitoring CP: 1 Day RP: 1 Month
T3.40	Turbidity must not exceed 0.5 NTU for the duration of any consecutive 15-minute period.	CP: 1 Day RP: 1 Month			
T3 Protozoal Rules for Coagulation, Flocculation, Sedimentation, and Filtration [3.5-Log]					
T3.45 Table 25 T3.41-lmts	T3 Requirements for Coagulation, Flocculation, Sedimentation and Filtration Process Limitations: Filtration is of a rapid media design (pressure or gravity equivalent).	Assurance CP: 1 Year RP: 1 year	T3.PZ.F4	Filtration must be of a rapid media design (pressure or gravity).	Non-reporting
T3.45 Table 25	T3 Requirements for Coagulation, Flocculation, Sedimentation and Filtration Parameters that need to be continuously monitored and where they need to be monitored: Turbidity and Service State	Monitoring CP: 1 Day RP 1 Year	T3.PZ.F5	The turbidity of filtered water must be continuously monitored on the outlet of each filter while it is in service.	Assurance CP: 1 Year RP: 1 Year
T3.43	Turbidity must not exceed 0.15 NTU for more than 5% of each day.	Monitoring	T3.PZ.F6	The turbidity of filtered water leaving any filter must not exceed the following limits: (a) 0.15 NTU for more than 5% of the time the filter is in operation each day: (b) 0.5 NTU for the duration of any consecutive 15-minute period in each day.	Monitoring CP: 1 Day RP: 1 Month
T3.44	Turbidity must not exceed 0.5 NTU for the duration of any consecutive 15-minute period.	CP: 1 Day RP: 1 Month			
T3 Protozoal Rules for Coagulation, Flocculation, Sedimentation, and Filtration [4-Log]					
T3.49 Table 25	T3 Requirements for Coagulation, Flocculation, Sedimentation and Filtration Process Limitations: Filtration is of a rapid media design (pressure or gravity equivalent).	N/A	T3.PF.7	Filtration must be of a rapid media design (pressure or gravity).	Non-reporting
T3.49 Table 25	T3 Requirements for Coagulation, Flocculation, Sedimentation and Filtration	Monitoring CP: 1 Day	T3.PF.8	The turbidity of filtered water must be continuously monitored on the outlet of each filter while it is in service.	Assurance CP: 1 Year

	Parameters that need to be continuously monitored and where they need to be monitored: Turbidity and Service state	RP: 1 Year			RP: 1 Year
T3.47	Turbidity must not exceed 0.1 NTU for more than 5% of each day.	Monitoring	T3.PF.9	The turbidity of filtered water leaving any filter must not exceed the following limits: (a) 0.1 NTU for more than 5% of the time the filter is in operation each day: (b) 0.3 NTU for the duration of any consecutive 15-minute period in each day.	Monitoring CP: 1 Day RP: 1 Month
T3.48	Turbidity must not exceed 0.3 NTU for the duration of any consecutive 15-minute period.	CP: 1 Day RP: 1 Month			
T3 Protozoal Rules for Second Stage Filtration [0.5-Log]					
T3.50	All water passing through the treatment plant must pass through the second stage filtration process.	Assurance CP: 1 Year RP: 1 Year	N/A	Removed.	N/A
T3.51	Turbidity must not exceed 0.1 NTU for more than 5% of each day.	Monitoring	N/A	Removed.	N/A
T3.52	Turbidity must not exceed 0.3 NTU for the duration of any consecutive 15-minute period.	CP: 1 Day RP: 1 Month	N/A	Removed.	N/A
T3.53 Table 26	T3 Requirements for Second Stage Filtration Parameters that need to be continuously monitored and where they need to be monitored: Turbidity and Service state.	Monitoring CP: 1 Day RP: 1 Year	N/A	Removed.	N/A
T3.53-lmts	T3 Requirements for Second Stage Filtration <i>Process Limitations:</i> A second filtration stage consists of media or granular activated carbon, other fine grain media in a separate stage after granular media filtration with preceding coagulation.	Assurance CP: 1 Year RP: 1 Year	N/A	Removed.	N/A
T3 Protozoal Rules for Slow Sand Filtration [2.5-Log]					
T3.54	All water passing through the treatment plant must pass through the slow sand filtration process.	Assurance CP: 1 Year	N/A	Removed.	N/A
T3.55	The filter must not dry out.	RP: 1 Year	N/A	Removed.	N/A
T3.56	Disinfecting chemicals must not be dosed so that they leave a residual disinfectant upstream of the filter beds.		N/A	Removed.	N/A
T3.57	Following filter maintenance, when a filter is brought back into operation, water must be discharged to waste until the filtration process has been demonstrated to be effective.		N/A	Removed.	N/A
T3.58	The filters must be operated at a surface loading rate of less than 0.35 m ³ /m ² /h.		N/A	Removed.	N/A
T3.59	The temperature of the water entering the filter must not drop below 6°C at any time.	Monitoring CP: 1 Day RP: 1 Year	N/A	Removed.	N/A
T3.60	Turbidity must not exceed 0.5 NTU for more than 5% of each day.	Monitoring	N/A	Removed.	N/A

T3.61	Turbidity must not exceed 1.0 NTU for the duration of any consecutive 15-minute period.	CP: 1 Day RP: 1 Month	N/A	Removed.	N/A
T3.62 Table 27	T3 Requirements for Slow Sand Filtration Parameters that need to be continuously monitored and where they need to be monitored: Temperature, Turbidity, Flow Values that need to be continuously monitored: Surface loading rate. Process limitations: Water treatment plants that recycle waste streams must return the recycle stream so that it undergoes the full treatment process and provide flow equalisation such that the instantaneous total return rate does not exceed 10% of the plant inflow. Turbidity monitoring is required to demonstrate that the recycle water has received effective solids/ liquid separation. If flows of greater than 10% are recycled, separate treatment of the recycled stream is required to inactivate or kill protozoa and bacteria before the waste stream is returned to the plant inlet.	Monitoring CP: 1 Day RP: 1 Year	N/A	Removed.	N/A
T3 Protozoal Rules for Cartridge Filtration [2.0-Log]					
T3.64	Rapid pressure fluctuations on either side of the cartridges must be avoided. Pumps must not be connected directly to the discharge side of a cartridge filter. After filtration, the filtrate must pass to a tank if there is subsequent pumping.	Assurance CP: 1 Year RP: 1 Year	T3.PA.1	The following requirements must be met where cartridge filtration is used: (a) pumps must not be connected directly to the discharge side of any cartridge filter; (b) where pumping occurs after filtration, the filtrate must first discharge directly to a tank; (c) differential pressure must be measured across each cartridge filter and must not exceed the cartridge filter manufacturer's specifications; (d) the flow through any filters, measured on the inlet or outlet of each filtration housing, must be within the manufacturer's design specifications for the treatment processes at all times; (e) the minimum differential pressure must always exceed the differential pressure established at commissioning with a new cartridge; (f) individual cartridges must be able to be clearly identified in relation to the manufacturer and the part number that relates to the validation/certification.	Assurance CP: 1 Year RP: 1 Year
T3.68	The equipment is operated within the flow range for which it was certified at all times.				
T3.69	Differential pressure across cartridges must be measured and kept within the manufacturer's recommendations at all times.				
T3.70	The minimum differential pressure must always exceed the differential pressure established at commissioning with a new cartridge and must be kept within the manufacturer's recommendations.				
T3.71	Individual cartridges must be able to be clearly identified in relation to the manufacturer and the part number that relates to the validation/certification.				
T3.72 Table 28	T3 Requirements for Cartridge Filtration Parameters that need to be continuously monitored and where they need to be monitored: Differential Pressure, Flow and Service State	Monitoring CP: 1 Day RP: 1 Year			
T3.72 Table 28	T3 Requirements for Cartridge Filtration Parameters that need to be continuously monitored and where they need to be monitored: Turbidity	Monitoring CP: 1 Day RP: 1 Year	T3.PA.2	The turbidity of filtered water from each filter housing must— (a) be continuously monitored on the combined inlet to the process; and (b) be continuously monitored on the outlet of each filtration housing.	Assurance CP: 1 Year RP: 1 Year
T3.65	Filtered water turbidity does not exceed 1.0 NTU for more than 5% of each day.	Monitoring CP: 1 Day RP: 1 Month	T3.PA.3	The turbidity of filtered water from each filter housing must— (a) not exceed 1.0 NTU for more than 5% of the time the filter is in operation each day; and (b) not exceed 1.0 NTU for the duration of any consecutive 15-minute period; and	Monitoring CP: 1 Day RP: 1 Month
T3.66	Filtered water turbidity does not exceed 1.0 NTU for the duration of any consecutive 15-minute period.				
T3.67	The filtrate turbidity from each filter housing must not exceed the turbidity of the cartridge feed water for the duration of any consecutive 15-minute period. ⁴⁹				

		CP: 1 Day RP: 1 Year		(c) not exceed the turbidity of the cartridge feed water for the duration of any consecutive 15-minute period (exceedances of not more than 2% are allowable to take account of measurement accuracy).	
Footnote 49	Exceedances of not more than 2% are allowable to take account of measurement accuracy.	N/A			
T3.72 Table 28	T3 Requirements for Cartridge Filtration Cartridge Validation/ Certification: Each cartridge must have a certified Cryptosporidium (oo)cyst removal efficiency of at least 3-log and be certified to one of the following: 1. the USEPA (2010)'s Long Term 2 Enhanced Surface Water Treatment Rule: Toolbox Guidance Manual Part 8: Bag and Cartridge Filters. 2. the (oo)cyst reduction conditions of Drinking Water Treatment Units: Health effects, NSF/ANSI 53 (NSF, ANSI 2002). 3. The (oo)cyst removal requirements of a standard recognised by Taumata Arowai as being equivalent (e.g., AS/NZS 4348:1995 in conjunction with AS/NZS 3497:1998 (updated 2001)).	Assurance CP: 1 Year RP: 1 Year	T3.PA.4	Each filtration cartridge must have a certified Cryptosporidium (oo)cyst removal efficiency of at least 3-log and be certified/validated to one of the following: (a) the USEPA (2010) Long Term 2 Enhanced Surface Water Treatment Rule: Toolbox Guidance Manual Part 8: Bag and Cartridge Filters: (b) the (oo)cyst reduction conditions of Drinking Water Treatment Units: Health effects, NSF/ANSI 53 (NSF, ANSI 2002). (c) The (oo)cyst removal requirements of AS/NZS 4348:1995 in conjunction with AS/NZS 3497:1998 (updated 2001).	Assurance CP: 1 Year RP: 1 Year
T3 Protozoal Rules for Membrane (microfiltration/ultrafiltration) Filtration [up to 4.0-Log]					
T3.74	Direct integrity tests must be performed on each membrane filtration unit at least daily (midnight to midnight) if the membrane filtration unit has been in service at any point during the day.	Assurance CP: 1 Day RP: 1 Year	T3.PM.1	The following requirements must be met where membrane filtration is used: (a) direct integrity tests must be performed on each membrane filtration unit at least daily if the membrane filtration unit has been in service at any point during the day (midnight to midnight): (b) direct integrity tests must be performed on any membrane unit that has been out of service for maintenance, or any other reason (not including normal operational modes like stand-by and backwashing), for more than 6 hours before the unit is returned to service: (c) direct integrity tests must be performed on any membrane unit if the turbidity of filtrate from that unit exceeds 0.1 NTU for more than 15 minutes: (d) no membrane unit may be used if it has failed its direct integrity test: (e) turbidity of filtered water of each membrane unit (rack, train or cell) must be continuously monitored.	Assurance CP: 1 Year RP: 1 Year
T3.75	No membrane unit may be used while it has failed its direct integrity test.	Assurance CP: 1 Year RP: 1 Year			
T3.76	If the turbidity of the membrane filtrate exceeds 0.1 NTU for more than 15 consecutive minutes the membrane unit must be run to waste and not returned to supply until it has passed a direct integrity test.	Monitoring CP: 1 Day RP: 1 Month			
T3.78	If the membrane unit has been out of service for maintenance or any other reason for more than 6 hours, a direct integrity test must be completed before the unit is returned to service.	Assurance CP: 1 Year RP: 1 Year			
T3.79 Table 29	T3 Requirements for Membrane Filtration Parameters that need to be continuously monitored and where they need to be monitored: Turbidity, Service state	Monitoring CP: 1 Day RP: 1 Year			
T3.79 Table 29	T3 Requirements for Membrane Filtration Parameters that need to be non-continuously monitored and where they need to be monitored: Membrane Integrity. <i>Where it needs to be monitored:</i> Each membrane filtration unit.	N/A			
T3.77	Filtrate turbidity must not exceed 1 NTU at any time.	Monitoring	T3.PM.2	Filtered water from each membrane unit must not exceed the following limits:	Monitoring

T3.76	See above	CP: 1 Day RP: 1 Month		(a) 0.1 NTU for more than 15 consecutive minutes: (b) 1.0 NTU at any time.	CP: 1 Day RP: 1 Month
T3.79 Table 29	T3 Requirements for Membrane Filtration Membrane Validation/Certification: Membranes must be certified to comply with <i>NSF/ANSI 61: Drinking Water System Components – Health Effects and NSF/ANSI 419 Public Drinking Water Equipment Performance – Filtration or equivalent.</i>	Assurance CP: 1 Year RP: 1 Year	T3.PM.3	Membranes must be certified/validated/verified to comply with <i>NSF/ANSI 61: Drinking Water System Components – Health Effects and NSF/ANSI 419 Public Drinking Water Equipment Performance – Filtration or equivalent.</i>	Non-reporting
T3.79 Table 29	T3 Requirements for Membrane Filtration Membrane Validation/ Certification: The maximum number of log credits (up to a maximum of 4.0) that a membrane filtration process is eligible to receive for protozoa removal depends on third party certification of the log removal that the filter plant can deliver. The manufacturer’s certificate (or validation) must specify the operational requirements under which the membrane units must be operated to meet the specification and the integrity testing procedure that the water supplier must carry out to demonstrate that the plant is operating at the claimed log credit rating at 3-micron resolution.	Assurance CP: 1 Year RP: 1 Year	T3.PM.4	Membranes must be operated— (a) to achieve only the log credits that validation specifies; and (b) according to the operational requirements under which the membranes have been validated; and (c) so that when a direct integrity test is undertaken, a 3 µm hole affects the membrane filtration unit’s response to the test.	Assurance CP: 1 Year RP: 1 Year
T3.79 Table 29	T3 Requirements for Membrane Filtration Process Limitations: Membrane filtration includes microfiltration and ultrafiltration.	N/A	N/A	Removed	N/A
Footnote 50	This may be source water turbidity before coagulation when membrane filtration is the only process. It may be the average of turbidity from in-service pre-treatment units.	N/A	N/A	Removed	N/A
T3.79 Table 29	T3 Requirements for Membrane Filtration Parameters that need to be non-continuously monitored and where they need to be monitored: Direct Integrity test requirements: The test is applied in such a manner that a 3 µm hole affects the response from the test. The test can verify the log removal value claimed for the membrane process.	Monitoring CP: 1 Day RP: 1 Year	N/A	Removed	N/A
T3 Protozoal Rules for Ozone Disinfection [3.0-Log]					
T3.84	All of the monitoring requirements in Table 31 must be met.	Monitoring CP: 1 Day RP: 1 Month	T3.PO.1	Drinking water treated by ozone disinfection must be continuously monitored for the following: (a) ozone residual at the outlet of the contact tank (alternative monitoring sites may be used if the water supplier can demonstrate that they improve the accuracy of the monitoring information); (b) turbidity at a point immediately before or after the contact tank: (c) flow at the— (i) outlet of the contact tank; or (ii) inlet of the contact tank, if a high-level outlet weir is installed: (d) temperature of water leaving the contact tank: (e) the water level in the contact tank: (f) T10 Contact Time: (g) C.t.	Assurance CP: 1 Year RP: 1 Year
T3.84 Table 31	T3 Requirements for Ozone Disinfection Parameters that need to be continuously monitored and where they need to be monitored: Ozone residual, Temperature, Turbidity, Flow, Water level in the contact tank (if used).				
T3.84-flow	Parameters: Flow. Where it needs to be monitored: Water leaving the contact tank unless there is a high-level outlet weir in which case water entering the contact tank is acceptable. A calculated outlet flow based on inlet flow and contact level change is also an acceptable approach.				
T3.84 Table 31	T3 Requirements for Ozone Disinfection Values that need to be continuously monitored: T10 Contact Time and C.t (Ozone x T10 Contact Time).	Monitoring CP: 1 Day RP: 1 Month			

Table 31 Footnote 53	Additional monitoring sites may be used in addition to the contact tank entry or exit point if the water supplier can demonstrate that they improve the accuracy of the monitoring information	N/A																																																														
T3.81	The C.t and water temperature required for the log credit claimed (Table 30) must be achieved for more than 95% of each day.	Monitoring CP: 1 Day RP: 1 Month	T3.PO.2	The flowing requirements must be met where ozone disinfection is used: (a) turbidity of water leaving the contact tank must not exceed 5.0 NTU for the duration of any consecutive 15-minute period: (b) the C.t and water temperature required for the log credit claimed (Table 1) must be achieved for more than 95% of the time the plant is producing drinking water to be distributed to consumers each day: (c) the C.t and water temperature must not be less than 80% of the values required for the log credit claimed (see Table 1) for the duration of any consecutive 15-minute period. C.t values (min.mg/L) for cryptosporidium inactivation by ozone valid for ozone concentrations in the range 0.2-5.0mg/L	Monitoring CP: 1 Day RP: 1 Month																																																											
T3.82	The C.t and water temperature must not be less than 80% of the values required for the log credit claimed (Table 30) for the duration of any consecutive 15-minute period.	Monitoring CP: 1 Day RP: 1 Year																																																														
T3.83	Turbidity must not exceed 5.0 NTU for the duration of any consecutive 15-minute period.																																																															
Footnote 51	The C.t data in this table are valid for ozone concentrations in the range 0.2-5.0mg/L	N/A																																																														
Footnote 52	C.t values between the indicated temperatures may be determined by interpolation.	N/A																																																														
T3.82 Table 30	T3 C.t values⁵¹ (min.mg/L) for <i>Cryptosporidium</i> inactivation by ozone <table border="1" data-bbox="320 856 866 1440"> <thead> <tr> <th rowspan="2">Log Credit</th> <th colspan="6">Water Temperature (oC)⁵²</th> </tr> <tr> <th>1</th> <th>5</th> <th>10</th> <th>15</th> <th>20</th> <th>25</th> </tr> </thead> <tbody> <tr> <td>0.25</td> <td>5.8</td> <td>4.0</td> <td>2.5</td> <td>1.6</td> <td>1.0</td> <td>0.6</td> </tr> <tr> <td>0.5</td> <td>12</td> <td>7.9</td> <td>4.9</td> <td>3.1</td> <td>2.0</td> <td>1.2</td> </tr> <tr> <td>1.0</td> <td>23</td> <td>16</td> <td>9.9</td> <td>6.2</td> <td>3.9</td> <td>2.5</td> </tr> <tr> <td>1.5</td> <td>35</td> <td>24</td> <td>15</td> <td>9.3</td> <td>5.9</td> <td>3.7</td> </tr> <tr> <td>2.0</td> <td>46</td> <td>32</td> <td>20</td> <td>12</td> <td>7.8</td> <td>4.9</td> </tr> <tr> <td>2.5</td> <td>58</td> <td>40</td> <td>25</td> <td>16</td> <td>9.8</td> <td>6.2</td> </tr> <tr> <td>3.0</td> <td>69</td> <td>47</td> <td>30</td> <td>19</td> <td>12</td> <td>7.4</td> </tr> </tbody> </table>	Log Credit				Water Temperature (oC) ⁵²						1	5	10	15	20	25	0.25	5.8	4.0	2.5	1.6	1.0	0.6	0.5	12	7.9	4.9	3.1	2.0	1.2	1.0	23	16	9.9	6.2	3.9	2.5	1.5	35	24	15	9.3	5.9	3.7	2.0	46	32	20	12	7.8	4.9	2.5	58	40	25	16	9.8	6.2	3.0	69	47	30	19
Log Credit	Water Temperature (oC) ⁵²																																																															
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3.0	69	47	30	19	12	7.4																																																										
Ultraviolet Light Disinfection [3-log or 4-Log]																																																																
T3.90	UVT must not be less than 80% of the lowest UVT for which the reactor has been certified for the duration of any consecutive 15-minute period. ⁵⁵	Monitoring CP: 1 Day	T3.PU.1	UV units must be validated to meet the protozoa log credits required from the UV unit and be operated within the specifications of a designated UV validation standard.	Assurance CP: 1 Year RP: 1 Year																																																											
T3.90 Footnote 55	These requirements do not apply to UV disinfection systems that automatically adjust the UV dose as the UVT of the water flowing through the reactor varies.	RP: 1 Year N/A																																																														
T3.91 Table 32	T3 Requirements for UV Disinfection UV certification/ validation: The equipment must be certified to meet the required log credit using at least one of:	Assurance CP: 1 Year																																																														

T3.91-cert	<ol style="list-style-type: none"> 1. the <i>Ultraviolet Disinfection Guidance Manual (USEPA 2006b)</i> – variable log credits. 2. <i>DVGW Technical Standard W294 (DVGW 2006)</i>. 3. <i>ÖNORM M 5873-1: 2020 01 01.41F57F¹</i> <i>NSF/ANSI 55 (2019) for Class A systems (for populations of up to 5,000) – 3 log.</i>	RP: 1 Year			
Table 32 Footnote 58	UV reactors installed before 1 January 2020 can be certified to <i>öNORM M5873 (Osterreichisches Normungsinstitut 2001)</i> .	N/A			
T3.90	See above	See above	T3.PU.2	Drinking water treated by UV light must be continuously monitored for the following: (a) UVT, at a point where water enters or leaves the UV reactor(s) (b) turbidity, at a point before the water enters or leaves the UV unit(s) including upstream filter monitoring if there is no other process between the filters and the UV unit(s); (c) UVI or UV dose, at the designated points in the UV unit as that used for certification/validation: (d) flow, at a point representative of water entering or leaving the units, which meets the relevant certification/validation requirements.	Assurance CP: 1 Year RP: 1 Year
T3.91 Table 32	T3 Requirements for UV Disinfection Parameters that need to be continuously monitored and where they need to be monitored: UVT, Turbidity, UVI or UV Dose, Flow	Monitoring CP: 1 Day RP: 1 Year			
Footnote 56	These requirements do not apply to UV disinfection systems that automatically adjust the UV dose as the UVT of the water flowing through the reactor varies.				
Footnote 57	<i>Or UV reactors certified to öNORM M5873 (Osterreichisches Normungsinstitut 2001).</i>				
T3.85	All water passing through the treatment plant must... be within the reactor's certified flow range for at least 95% of each day.	Assurance CP: 1 Year RP: 1 Year	T3.PU.3	Water flow rate must be within the UV units certified flow range for the claimed log credit at least 95% of the time the UV unit(s) is/are operating each day.	Assurance CP: 1 Year RP: 1 Year
T3.86	The UV dose must meet or exceed that required to achieve the claimed log credit for at least 95% of each day.	Monitoring CP: 1 Day RP: 1 Year	T3.PU.4	A RED of not less than that the validated dose for the log credits claimed must be achieved for not less than 95 % of the time the UV units is/are producing drinking water each day.	Monitoring CP: 1 Day RP: 1 Month
T3.87	The UV dose must not be less than that required to achieve the claimed log credit for the duration of any consecutive 15-minute period.		T3.PU.5	The RED delivered by a UV unit(s) must not be less than the validated dose for the protozoa log credits claimed for the duration of any consecutive 15-minute period.	Monitoring CP: 1 Day RP: 1 Month
T3.88	Turbidity must not exceed 5.0 NTU for the duration of any consecutive 15-minute period.		T3.PU.6	Turbidity of water entering the UV unit(s) when it is in service must not exceed 5.0 NTU for the duration of any consecutive 15-minute period.	Monitoring CP: 1 Day RP: 1 Month
T3.86	The UV dose must meet or exceed that required to achieve the claimed log credit for at least 95% of each day.	Monitoring CP: 1 Day RP: 1 Month	T3.PU.7	UV units validated to USEPA UVDGM must calculate dose using— (a) UVI and flow, if set-point dose approach is used; or (b) UVI, flow, and UVT, if calculated dose approach used.	Non-reporting
T3.89	UVT must meet or exceed 95% of the UVT for which the reactor has been certified for at least 95% of each day. ⁵⁴	Monitoring CP: 1 Day RP: 1 Year			

T3.86 T3.89	See above.	See above.	T3.PU.8	UV units validated to DVGW; ÖNORM; or DIN must— (a) use monitored flow for UVI control; or (b) be run at full power; and (c) UVI and UVT must be more than the validated value for the respective flow.	Non-reporting
Footnote 54	These requirements do not apply to UV disinfection systems that automatically adjust the UV dose as the UVT of the water flowing through the reactor varies.	N/A			
T3.21	For UV units certified to NSF/ANSI 55 Class A (NSF, ANSI n.d.); (for populations of up to 5000) – 3-log a fault must be generated when any parameter exceeds the certified value.	Assurance CP: 1 Year RP: 1 Year	T3.PU.9	UV units validated to NSF/ANSI 55 – Class A must generate a fault when any parameter exceeds the validated value.	Non-reporting
T3.91 Table 32	T3 Requirements for UV Disinfection UV sensor checking and standardisation: Duty UVI sensors must be checked at least monthly against the reference sensor. If the difference between the two readings exceeds the manufacturer’s specified limits, then the duty UVI sensor must be replaced. Reference UVI sensor must be standardised at least annually in accordance with the Ultraviolet Disinfection Guidance Manual (USEPA 2006b) or other traceable procedure. Alternatively, after 12 months the supplier can use the reference sensor as a duty sensor and purchase a new standardised sensor for use as a reference sensor. Other instrumentation must be calibrated in accordance with the instrument manufacturer’s specified procedures and frequency.	Monitoring CP:1 Month RP: 1 Year	T3.PU.10	UVI sensors must meet the following requirements: (a) duty UVI sensors must be— (i) checked at least every month against the reference sensor; and (ii) replaced if the difference between the duty and reference readings exceeds the manufacturer’s specified limits: (b) a reference UVI sensor must— (i) have been purchased in the last 24 months; or (ii) be standardised at least every 24 months in accordance with the USEPA UVDGM or other traceable procedure: (c) after 24 months of use, the reference sensor can be used as a duty sensor and a new standardised sensor must be used as a reference sensor.	Assurance CP: 1 Year RP: 1 Year

Changes to level 3 Chemical Monitoring Rules

Current rule number	Current requirement	Current parameter	Final rule number	Final requirement	Final parameter
N/A	N/A	N/A	T3.CH.1	<p>Any chemical dosed into the drinking water supply (excluding on-site generated sodium hypochlorite and chlorine dioxide) must be demonstrated to be safe for use in drinking water by either—</p> <p>(a) a certificate of analysis for each batch used including the following information:</p> <ul style="list-style-type: none"> (i) an analysis of all chemicals and potential impurities in the product: (ii) the purity of each chemical by mass or volume (ppm, concentration or percentage); or <p>(b) a certificate of conformance to a specified standard for the chemical.</p>	<p>Assurance</p> <p>CP: 1 Year</p> <p>RP: 1 Year</p>
Section 4.10.3	<p>In the first 12 months of monitoring,⁵⁹ 15 samples must be taken over a 12-month period (with no more than two samples collected in any calendar month) to determine the range of values for determinands in water leaving a treatment plant.</p> <p>Values must be identified for determinands in the water leaving the treatment plant if:</p> <ol style="list-style-type: none"> 1. the determinand has a MAV; <i>and</i> 2. the determinand is: <ul style="list-style-type: none"> a) present in the source water at a concentration more than 50% of its MAV (as determined by the supply source water risk management plan); <i>and/or</i> b) a chemical added during treatment, or a possible contaminant in a treatment chemical; <i>and/or</i> c) formed as the result of a treatment process and is not expected to change in concentration beyond the treatment plant. <p>Following collection of the first 15 samples to establish the typical range of a determinand, the determinand must be monitored at the frequencies set out in Table 33</p> <p>Some of the determinands that may arise from treatment chemicals are listed in Table 34. Drinking water suppliers must test for determinands resulting from any other treatment chemicals that they use.</p>	N/A	T3.CH.2	<p>(a) A schedule of all chemicals that are used for treatment and chemicals that may be formed in the treatment process must be prepared.</p> <p>(b) The schedule must identify which of those chemicals have a MAV.</p>	<p>Assurance</p> <p>CP: 1 Year</p> <p>RP: 1 Year</p>
T3.92	<p>Values for determinands in treated water that:</p> <ol style="list-style-type: none"> 1. exceed 50% of their MAV in the source water, or 2. are added or formed in the treatment process (as well as impurities in treatment chemicals), <p>must be identified by the collection and analyses of 15 samples over a 12-month period (with no more than two samples collected in any calendar month).</p>	<p>Assurance</p> <p>CP: 1 Year</p> <p>RP: 1 Year</p>			

Section 4.10.3 Footnote 59	Where coagulants are used intermittently, the water supplier must undertake an appropriate sampling programme to determine the range of values for determinands in water leaving the treatment plant.				
T3.92	See above	See above	T3.CH.3	(a) Water must be monitored (excluding chlorine and fluoride) at a point after the treatment processes (including contact tanks) at least every month for— (i) Chemicals identified in source water monitoring that exceed or their MAV or (ii) chemicals on the schedule prepared in rule T3.CH.2 that have a MAV. (b) Where 12 consecutive sampling results for a determinand under (a) are not more than 50% of the MAV, sampling may reduce to every twelve months, but if a result exceeds 50% of the MAV, monthly sampling must resume under (a).	Monitoring CP: 1 Month RP: 1 Month
T3.93	Determinands identified by the sampling programme outlined in rule T3.92 must be categorised as either standard typical range or elevated typical range and must be sampled at the frequency set out in Table 33.	Monitoring CP: 1 Month RP: 1 Year			
T3.94	Samples must be taken from a point directly after the final treatment process (including chlorine contact tanks as they are part of the treatment process).	Assurance CP: 1 Year RP: 1 Year			
T3.93 Table 33	T3 Treatment Chemical Determinand Minimum Sampling Frequencies Minimum Sampling frequency: Standard typical range determinands (typical value <50% MAV) Annually Elevated typical range determinands (Value range 50% - 100% MAV) Monthly	Monitoring CP: 1 Month RP: 1 Year			
Table 34	T3 Possible Treatment Chemical Determinand Monitoring <i>Treatment chemical: Aluminium based coagulants/flocculants, Determinand to monitor: Aluminium, antimony, cadmium, copper, chromium, lead, mercury, nickel</i> <i>Treatment chemical: Iron based coagulants/flocculants, Determinand to monitor: Antimony, cadmium, copper, chromium, lead, mercury, nickel</i> <i>Treatment chemical: Polyacrylamide (polyelectrolyte), Determinand to monitor: Acrylamide</i> <i>Treatment chemical: EP-DMA (polyelectrolyte), Determinand to monitor: Epichlorohydrin</i> <i>Treatment chemical: Ozone, Determinand to monitor: Bromate</i> <i>Treatment chemical: Permanganate, Determinand to monitor: Manganese</i>	N/A			
Footnote 63	Monitoring is only required for treatment chemicals that are used or formed in a treatment process.				
4.10.3	Typical Value Range A drinking water supplier must sample the water leaving a treatment plant to determine the typical value range for specified chemical determinands to identify if any values exceed the MAV in the Drinking Water Standards and to determine the ongoing monitoring frequency for those determinands. Standard typical range refers to a determined for which sample results are always less than 50% of the MAV. Elevated typical range refers to a determinand for which any sample exceeds 50% of the MAV but does not exceed 100% of the MAV.				

	Some of the determinands that may arise from treatment chemicals are listed in Table 34. Drinking water suppliers must test for determinands resulting from any other treatment chemicals that they use.				
Section 4.10.3 Table 34	T3 Possible Treatment Chemical Determinand Monitoring Treatment Chemical: Sodium hypochlorite, Determinand to Monitor: Chlorate	Monitoring CP: 1 Month RP: 1 Year	T3.CH.4	(a) Where sodium hypochlorite solution is used for disinfection, water leaving the treatment plant must be monitored for chlorate at least every week. (b) Where 12 consecutive sampling results are not more 50% of the MAV, sampling may reduce to every month, but if a result exceeds 50% of the MAV, sampling must return to weekly under (a).	Monitoring CP: 1 Month RP: 1 Month
T3.93 Table 33	T3 Treatment Chemical Determinand Minimum Sampling Frequencies Minimum sampling frequency: Chlorate, Weekly				
Footnote 60	If sodium hypochlorite is used for disinfection.				
Footnote 62	Sampling may reduce to monthly if 12 consecutive samples are below 50% of the MAV. If a sample exceeds 50% of the MAV, sampling must return to weekly.				
T3.93	See above.	See above.	T3.CH.5	(a) Where chlorine dioxide is used for disinfection, water leaving the treatment plant must be monitored for chlorite and chlorate at least every week. (b) Where 12 consecutive sampling results under (a) are not more than 50% of the MAV, sampling may reduce to every month, but if a result exceeds 50% of the MAV, sampling must return to weekly under (a).	Monitoring CP: 1 Month RP: 1 Month
T3.93 Table 33	T3 Treatment Chemical Determinand Minimum Sampling Frequencies Minimum Sampling frequency: Fluoride, Continuous	Monitoring CP: 1 Day RP: 1 Year	T3.CH.6	If fluoride is added as part of the treatment process, it must be monitored continuously after the fluoride chemical is fully mixed.	Assurance CP: 1 year RP: 1 year
Footnote 61	If fluoride is added as part of the treatment process.				
T3.96	Event based monitoring (determined by the water supplier) must be undertaken for any event that may rapidly introduce high concentrations of health-significant chemical determinands into the water at the source or at the treatment plant.	Monitoring CP: 1 Year RP: 1 Year	N/A	Removed	N/A
T3.95	Containers used for collecting samples must be obtained from a laboratory and appropriate for the target determinand.	Assurance CP: 1 Year RP: 1 Year	N/A	Removed	N/A

Changes to level 3 Cyanotoxin Monitoring Rules

Current rule number	Current requirement	Current parameter	Final rule number	Final requirement	Final parameter
T3.97	If cyanotoxins are identified in treated water, cyanotoxin testing must be undertaken in accordance with the supply cyanobacteria/cyanotoxin response plan or at least twice weekly (whichever is more frequent) until cyanotoxins are not present.	Monitoring CP: 1 Month RP: 1 Year	T3.CY.1	If testing of water leaving a treatment plant is required under rules S3.CD.6 and/or S3.CD.7 it must be monitored monthly for — (a) cyanotoxins that have a MAV; or (b) any specific cyanotoxin(s) that have been identified in source water testing or in cyanotoxin production gene(s) testing under rules S3.CD.6 and/or S3.CD.7.	Monitoring CP: 1 Month RP: 1 Month
			T3.CY.2	If any cyanotoxins that have a MAV are detected monitoring-from rule T3.CY.1 water leaving the treatment plant must be monitored at the following frequencies: (a) weekly if any-cyanotoxins are detected not more than 25% of their respective MAV: (b) twice weekly if any of the above cyanotoxins are between 25% and 50%-of the respective MAV: daily if any cyanotoxins-exceed 50% of the respective MAV.	Rule type: Assurance CP: 1 year RP: 1 year

Changes to level 3 Distribution System Rules

Current rule number	Current requirement	Current parameter	Final rule number	Final requirement	Final parameter
D3 Backflow Protection Rules					
D3.1	Drinking water suppliers must prepare and implement a backflow prevention programme to protect their distribution system against the risk of backflow.	Assurance CP: 1 Year RP: 1 Year	D3.BF.1	A backflow prevention programme to protect a distribution system against the risk of backflow must be— (a) prepared by a suitably qualified and experienced person; and (b) implemented; and (c) recorded in writing.	Assurance CP: 1 Year RP: 1 Year
D3.2	Periodic surveys of backflow risks to a distribution system to determine medium and high-risk sites must be undertaken by the drinking water supplier at least once every five years to assess the adequacy of backflow protection across the distribution system.	Assurance CP: 1 Year RP: 1 Year	D3.BF.2	A survey of backflow risks to each distribution zone must be undertaken at least once every five years to— (a) determine medium and high-risk sites; and (b) assess the adequacy of backflow protection across the distribution system.	Assurance CP: 1 Year RP: 1 Year
D3.3	Where backflow requirements at a point of supply are deemed inadequate, the drinking water supplier must notify the local authority with details of the situation and risk, determine the backflow device that should be installed at the point of supply and ensure that it is installed in a timeframe commensurate with the risk but as soon as reasonably practicable.	Assurance CP: 1 Year RP: 1 Year	D3.BF.3	Where backflow requirements at a point of supply are deemed inadequate, the drinking water supplier must— (a) notify the local authority with details of the situation and risk; and (b) determine the type of backflow device that should be installed at the point of supply; and (c) ensure the appropriate backflow device is installed in a timeframe commensurate with the risk but as soon as reasonably practicable.	Non-reporting
D3.4	Testing of all testable backflow prevention devices installed at a point of supply specifically to protect the network (generally boundary devices) ⁶⁴ must be undertaken, at least annually.	Assurance CP: 1 Year RP: 1 Year	D3.BF.4	All testable backflow prevention devices installed at a point of supply specifically to protect a distribution system (generally boundary devices) must be tested by a suitably qualified and experienced person at least every 12 months.	Assurance CP: 1 Year RP: 1 Year
Footnote 64	Does not include devices that are installed downstream of the point of supply and/or within buildings that have the primary purpose of protecting building users.				
D3.5	A drinking water supplier must maintain a register of the location of all point of supply testable backflow protection devices, device types, assessed risk level and the results of testing of all devices.	Assurance CP: 1 Year RP: 1 Year	D3.BF.5	A drinking water supplier must maintain a register of all points of supply with testable backflow protection devices for each distribution zone, including at least the following information: (a) location; (b) device type; (c) assessed risk level; (d) test results.	Assurance CP: 1 Year RP: 1 Year
D3.6	Access to a water network through use of a standpipe is not permitted except by Fire and Emergency New Zealand, other emergency services, the drinking water supplier, or authorised contractors to the drinking water supplier where it is reasonably necessary to access the network for the operation of the drinking water supply.	Assurance CP: 1 Year RP: 1 Year	D3.BF.6	A drinking water supplier must not permit access to a distribution system through use of a standpipe, except by any of the following people: (a) employees of the supplier:	Assurance CP: 1 Year RP: 1 Year

Current rule number	Current requirement	Current parameter	Final rule number	Final requirement	Final parameter
				(b) agents or contractors of the supplier carrying out reasonably necessary work on the supply; (c) Fire and Emergency New Zealand; (d) other emergency services.	
D3 New and Repaired Watermains Hygiene Procedures Rules					
D3.7	Before carrying out or commissioning repairs to pipes in a water distribution system, a drinking water supplier must undertake and keep records of a risk assessment to determine the risk of contamination of the network and the procedures required to minimise that risk.	Assurance CP: 1 Year RP: 1 Year	D3.HP.1	Before carrying out or commissioning repairs to pipes in a distribution system, a drinking water supplier must— (a) undertake a risk assessment to determine the risk of contamination of the distribution zone; and (b) determine procedures required to minimise the risk; and (c) record (a) and (b) in writing.	Assurance CP: 1 Year RP: 1 Year
D3.8	All materials used in construction and repairs must be free of visible contamination and remain protected from contamination until installation	Assurance CP: 1 Year RP: 1 Year	D3.HP.2	All materials used in construction and repairs in a distribution system must— (a) be free of visible contamination; and (b) remain protected from contamination until installation.	Non-reporting
D3.9	All tools contacting the water supply or its parts, particularly cutting surfaces, must be adequately disinfected prior to commencing work and subsequently as necessary when tools contact soil or backfill material.	Assurance CP: 1 Year RP: 1 Year	D3.HP.3	All tools contacting any part of a distribution system must be adequately disinfected— (a) prior to commencing work; and (b) after contact with soil or backfill material.	Non-reporting
D3.10	Disinfection of mains (when required) must follow best management practices including but not limited to methods such as tablet, slug, spray chlorination, or equivalent as appropriate.	Assurance CP: 1 Year RP: 1 Year	D3.HP.4	Disinfection of mains pipes must follow best management practices including but not limited to methods such as tablet, slug, spray chlorination, or equivalent.	Assurance CP: 1 Year RP: 1 Year
D3.11	Drinking water suppliers must develop and document standard operating procedures for planned, unplanned and emergency repairs.	Assurance CP: 1 Year RP: 1 Year	D3.HP.5	Standard operating procedures for planned and unplanned repairs in a distribution system must be— (a) developed; and (b) implemented; and (c) recorded in writing.	Assurance CP: 1 Year RP: 1 Year
D3 Facilities Operation, Maintenance and Disinfection Rules					
D3.12	Drinking water suppliers that have storage facilities within a distribution system must prepare a water storage management plan for the operation of storage facilities which includes the minimum and maximum operating levels, target turnover rates, inspection, and cleaning.	Assurance CP: 1 Year RP: 1 Year	D3.FO.1	A drinking water storage management plan for a distribution system that includes storage must— (a) be developed; and (b) be under implementation; and (c) be recorded in writing; and (d) include at least the following— (i) minimum and maximum operating levels; (ii) target turnover rates:	Assurance CP: 1 Year RP: 1 Year

Current rule number	Current requirement	Current parameter	Final rule number	Final requirement	Final parameter
				(iii) inspection: (iv) security measures: (v) protection from contamination: (vi) cleaning.	
D3.13	All storage facilities must be subject to an annual security and contamination inspection and assessment by the drinking water supplier.	Assurance CP: 1 Year RP: 1 Year	D3.FO.2	Inspections of drinking water storage facilities in a distribution system must be carried out at least every 12 months, and— (a) identify of any points of potential ingress by contaminants; and (b) identify any signs of actual security breaches and contamination incidents; and (c) be recorded in writing.	Assurance CP: 1 Year RP: 1 Year
D3.14	Drinking water suppliers must prepare and use written disinfection procedures for storage facilities that are consistent with industry best management practices.	Assurance CP: 1 Year RP: 1 Year	D3.FO.3	Disinfection procedures for drinking water storage facilities that are consistent with industry best management practices must be— (a) developed; and (b) implemented; and (c) recorded in writing.	Assurance CP: 1 Year RP: 1 Year
D3.15	All new storage facilities, and existing storage facilities that have been drained for maintenance purposes, must be cleaned and disinfected and tested for <i>E. coli</i> prior to being brought (back) into use.	Assurance CP: 1 Year RP: 1 Year	D3.FO.4	All new drinking water storage facilities, and existing storage facilities that have been drained for maintenance purposes, prior to being brought (back) into use, must be— (a) cleaned; and (b) disinfected; and (c) tested for <i>E. coli</i> .	Assurance CP: 1 Year RP: 1 Year
D3.16	Divers' suits, rafts, remotely operated vehicles (ROVs) and other materials used during inspection, maintenance or other activities within storage facility interiors must be made from materials acceptable for contact with drinking water and suitable for disinfection.	Assurance CP: 1 Year RP: 1 Year	D3.FO.5	Divers' suits, rafts, remotely operated vehicles and other materials used during inspection, maintenance or other activities inside drinking water storage facilities must be made from materials acceptable for contact with drinking water and suitable for disinfection.	Non-reporting
D3.17	All equipment and materials entering storage facilities must be disinfected immediately prior to entry according to industry best management practices.	Assurance CP: 1 Year RP: 1 Year	D3.FO.6	All equipment and materials entering drinking water storage facilities must be disinfected immediately prior to entry according to industry best management practices.	Non-reporting
D3 Residual Disinfection, Disinfection By-product, and Plumbosolvent Metal Rules					
Explanatory note in Section 4.11.4	Alternative FAC Continuous Monitoring Rules for Distribution Systems Water suppliers may continuously monitor FAC in a distribution zone in accordance with rules D3.25 to D3.27 as an alternative to demonstrating compliance against rules D3.20 and D3.21.	N/A	D3.RD.1	FAC monitoring in a distribution zone must be undertaken in compliance with— (a) rules D3.RD.3, D3.RD.4, D3.RD.5 for grab sampling; or (b) rules D3.RD.3, D3.RD.6, D3.RD.7, D3.RD.8 for continuous monitoring.	Non-reporting
D3.18	A written sampling plan for determinands to be sampled in relation to disinfection, disinfection by-products and plumbosolvent metals must be prepared including a system map indicating sampling locations and response procedures to be followed when sample results do not meet prescribed levels.	Assurance CP: 1 Year RP: 1 Year	D3.RD.2	A sampling plan for disinfection, disinfection by-products and plumbosolvent metals in a distribution system must— (a) be prepared; and (b) be implemented; and	Assurance CP: 1 Year RP: 1 Year

Current rule number	Current requirement	Current parameter	Final rule number	Final requirement	Final parameter
				(c) be recorded in writing; and (d) include— (i) a system map indicating sampling locations; and (ii) response procedures to be followed when sample test results do not meet prescribed levels.	
D3.19	A FAC of at least 0.2 mg/L must be maintained in 85% of samples (or 85% of the time if continuously monitored). Up to 15% of samples (or 15% of the time if continuously monitored) may have a FAC of less than 0.2 mg/L but must be greater than 0.1 mg/L.	Monitoring CP: 1 Month RP: 1 Month	D3.RD.3	FAC must be maintained in each distribution zone to meet the following limits — (a) FAC is at least 0.2 mg/L in more than 85% of grab samples or (b) FAC is at least 0.2 mg/L for more than 85% of each day for all continuous monitoring and (c) FAC is no less than 0.1 mg/L at all times for grab samples or continuous monitoring.	Monitoring RP: 1 Month CP: 1 Month
D3.20	Samples must be collected for FAC at the frequencies outlined in table 35. ⁶⁵	Monitoring CP: 1 Month RP: 1 Year	D3.RD.4	Drinking water suppliers that have elected the grab sampling option, must prepare a FAC sampling schedule for each distribution zone to meet the sampling frequencies set out below (a) for a distribution zone population of no more than 25,000,— (i) at least 12 samples analysed each month; and (ii) no more than 4 days elapsed between consecutive samples; and (iii) samples collected on at least 5 different days of the week: (b) for a distribution zone population of 25,001-50,000,— (i) at least 16 samples analysed each month; and (ii) no more than 3 days elapsed between consecutive samples; and (iii) samples collected on at least 6 different days of the week: (c) for a distribution zone population of 50,001-100,000,— (i) at least 20 samples analysed each month; and (ii) no more than 2 days elapsed between consecutive samples; and (iii) samples collected on at least 6 different days of the week: (d) for a distribution zone population of more than 100,000,— (i) 24 samples analysed each month; and (ii) no more than 2 days elapsed between consecutive samples; and (iii) samples collected on 7 different days of the week.	Assurance CP: 1 Year RP: 1 Year
Footnote 65	Demonstrating compliance with this rule (D3.20) is not required if FAC is continuously monitored according to rules D3.25 to D3.27.				
Table 35	For Distribution zone population of <25,000, 3 samples per week, with maximum interval between samples of 4 days, with a minimum number of 5 days of the week used. For Distribution zone population of 25,001-50,000, 4 samples per week, with maximum interval between samples of 3 days, with a minimum number of 6 days of the week used For Distribution zone population of 50,001-100,000, 5 samples per week, with maximum interval between samples of 2 days, with a minimum number of 6 days of the week used (at least two Saturdays and two Sundays sampled each year). For Distribution zone population of >100,000, 6 samples per week, with maximum interval between samples of 2 days, with a minimum number of 7 days of the week used (at least four Saturdays and four Sundays sampled each year).				
D3.21 Footnote 66	Routine sampling sites must be located to adequately represent the distribution system and areas associated with higher risk of deterioration in drinking water quality and population exposure. ⁶⁶ Demonstrating compliance with this rule (D3.21) is not required if FAC is continuously monitored according to rules D3.25 to D3.27.	Assurance CP: 1 Year RP: 1 Year	D3.RD.5	Routine sampling sites for monitoring for compliance with rules D3.RD.3 and D3.RD.4 zone must be located to— (a) adequately represent water quality across a distribution zone; and (b) include both peripheral and central locations in the distribution zone; and (c) include areas with higher risk of deterioration in drinking water quality occurs and population density is highest.	Assurance CP: 1 Year RP: 1 Year

Current rule number	Current requirement	Current parameter	Final rule number	Final requirement	Final parameter
D3.25	Continuous monitoring analysers for FAC must be installed in each distribution zone at the following locations: i) At a point where water is provided to a distribution zone, e.g. a reservoir outlet or bulk point of supply. (ix) At a supply main within the zone near to the centre or near to the extremity of the distribution zone.	Assurance CP: 1 Year RP: 1 Year	D3.RD.7	Continuous monitoring analysers for FAC must be installed in at least the following places in each distribution zone: (a) the point where drinking water is provided to a distribution zone, e.g. a reservoir outlet or bulk point of supply; and (b) a point in the supply main near to— (i) the centre of the distribution zone; or (ii) the extremity of the distribution zone.	Assurance CP: 1 Year RP: 1 Year
D3.26 Table 36	Continuous monitoring analysers for FAC in each distribution zone must meet the requirements set out in Table 36. Zone population up to 25,000 – 2 analysers required in each zone Zone population 25,001 – 100,000 – 3 analysers required in each zone Zone population up to >100,000 – 4 analysers required in each zone	Assurance CP: 1 Year RP: 1 Year	D3.RD.6	For water suppliers that have elected to use the continuous monitoring option, the number of continuous monitoring analysers for FAC installed in each distribution zone must be at least: (a) two analysers per zone for a zone population up to 25,000; (b) three analysers per zone for a zone population of 25,001 – 100,000; (c) four analysers per zone for a population more than 100,000.	Assurance CP: 1 Year RP: 1 Year
D3.27 Footnote 67	Confirmation of the representative nature of the continuous monitoring results must be undertaken by the collection and analysis of four FAC and pH grab samples (at least five days between samples) each month from within the distribution zone. Samples should be taken from the outer extent of the distribution zone at times of normal demand. Results from confirmation sampling do not need to be reported or notified for compliance purposes.	Assurance CP: 1 Year RP: 1 Year	D3.RD.8	The representative nature of the continuous monitoring results in a distribution zone must be confirmed by the following requirements— (a) at least four FAC and pH samples analysed each month; (b) samples are taken during at least four different weeks of each month; (c) all samples are taken from the outer extent of the distribution zone at times of normal demand.	Assurance CP: 1 Year RP: 1 Year
D3.22 Table 37 Footnote 68 and 69	Analyses must be undertaken in each distribution zone according to the frequencies set out in Table 37 for the following disinfection by-products: 1. trihalomethanes: chloroform, bromodichloromethane, dibromochloromethane, and bromoform; and 2. haloacetic acids: dichloroacetic acid and trichloroacetic acid. Each disinfection zone must be sampled for DBPs 1 per quarter ^{68 69} Additional targeted sampling should be undertaken in accordance with the sampling programme to understand the conditions and circumstances that lead to DBP formation. After 2 years if consecutive samples are less than 50% of the MAV sampling may reduce to 1 per year. If any annual sample exceeds 50% of a MAV, sampling must return to quarterly.	Monitoring CP: 1 Year RP: 1 Year	D3.RD.9	(a) Drinking water in each distribution zone must be monitored at least every three months for the following: (i) chloroform: (ii) bromodichloromethane: (iii) dibromochloromethane: (iv) bromoform: (v) dichloroacetic acid: (vi) trichloroacetic acid. (b) Where two compliance years of three-monthly sampling results for any determinand under (a) are not more than 50% of the MAV, monitoring may reduce to once per year, but if a result exceeds 50% of a MAV, monitoring must return to at least every three months under (a).	Monitoring CP: 1 Year RP: 1 Year
D3.23	Sample sites for disinfection by-products must represent both peripheral and central locations in the distribution system.	Assurance CP: 1 Year RP: 1 Year	D3.RD.10	Sampling sites for monitoring of disinfection by-products under rule D3.RD.9 must be alternated between peripheral and central locations of the distribution zone.	Non-reporting

Current rule number	Current requirement	Current parameter	Final rule number	Final requirement	Final parameter
<p>D3.24</p> <p>Table 38</p> <p>Footnote 70</p>	<p>Analyses must be undertaken in each distribution zone for the plumbosolvent metals outlined in Table 38.</p> <p>Antimony, cadmium, chromium, copper, lead, mercury, nickel, zinc</p> <p>Every 6 months⁷⁰</p> <p>Must be sampled monthly if the determinand exceeds 50% of its MAV. Sampling can return to 6 monthly after 12 samples are less than 50% of the MAV.</p>	<p>Monitoring</p> <p>CP: 1 Year</p> <p>RP: 1 Year</p>	D3.RD.11	<p>The following monitoring must be undertaken for plumbosolvent metals in each distribution zone:</p> <p>(a) drinking water in each distribution zone must be sampled twice per compliance year at least 6 months apart for the following:</p> <ul style="list-style-type: none"> (i) antimony: (ii) cadmium: (iii) chromium: (iv) copper: (v) lead: (vi) mercury: (vii) nickel: (viii) zinc: <p>(b) any determinand that exceeds 50% of its MAV must be monitored monthly:</p> <p>(c) after 12 consecutive monthly sampling results are less than 50% of the MAV, monitoring may return to 6 monthly under (a).</p>	<p>Monitoring</p> <p>CP: 1 Month</p> <p>RP: 1 Year</p>
D3 Microbiological Monitoring Rules					
D3.28	<p>A written sampling plan for monitoring total coliforms, <i>E. coli</i> and any other determinands deemed necessary by the water supplier must be prepared, including a system map indicating sampling locations and a response plan for positive results.</p>	<p>Assurance</p> <p>CP: 1 Year</p> <p>RP: 1 Year</p>	D3.MM.1	<p>A sampling plan for microbiological monitoring in a distribution system must—</p> <ul style="list-style-type: none"> (a) be developed; and (b) be implemented; and (c) be recorded in writing; and (d) include— <ul style="list-style-type: none"> (i) a system map indicating sampling locations; and (ii) a response plan for positive test results. 	<p>Assurance</p> <p>CP: 1 Year</p> <p>RP: 1 Year</p>
<p>D3.29</p> <p>Table 39</p>	<p><i>E. coli</i> and total coliforms must be monitored in each zone of the distribution system according to the frequencies set out in Table 39.</p> <p>For Distribution zone population of <25,000, 1 microbiological sample per week, with maximum interval between samples of 9 days, with a minimum number of 5 days of the week used</p> <p>For Distribution zone population of 25,001 – 50,000, 1 microbiological sample per week, with maximum interval between samples of 9 days, with a minimum number of 6 days of the week used (at least two Saturdays and two Sundays sampled each year).</p> <p>For Distribution zone population of 50,001 - 100,000, 2 microbiological samples per week, with maximum interval between samples of 5 days, with a minimum number of 7 days of the week used (at least three Saturdays and three Sundays sampled each year).</p>	<p>Monitoring</p> <p>CP: 1 Month</p> <p>RP: 1 Month</p>	D3.MM.2	<p>Drinking water suppliers must prepare a microbiological determinands sampling schedule for each distribution zone to meet the sampling frequencies set out below:</p> <ul style="list-style-type: none"> (a) for a distribution zone population of no more than 25,000,— <ul style="list-style-type: none"> (i) 4 samples per month; and (ii) with maximum interval between samples of 9 days; and (iii) with a minimum number of 5 days of the week used: (b) for a distribution zone population of 25,001 – 50,000,— <ul style="list-style-type: none"> (i) four samples per month; and (ii) with a maximum interval between samples of 9 days; and (iii) a minimum number of 6 days of the week used (including at least two Saturdays and two Sundays sampled each compliance year): (c) for a distribution zone population of 50,001 - 100,000,— 	<p>Assurance</p> <p>CP: 1 Year</p> <p>RP: 1 Year</p>

Current rule number	Current requirement	Current parameter	Final rule number	Final requirement	Final parameter
	For Distribution zone population of >100,000, 3 microbiological samples per week, with maximum interval between samples of 3 days, with a minimum number of 7 days of the week used (at least four Saturdays and four Sundays sampled each year).			<ul style="list-style-type: none"> (i) eight samples per month; and (ii) with a maximum interval between samples of 5 days; and (iii) with a minimum number of 7 days of the week used (at least three Saturdays and three Sundays sampled each compliance year): (d) for a distribution zone population of more than 100,000,— <ul style="list-style-type: none"> (i) 12 samples per month; and (ii) with a maximum interval between samples of 3 days; and (iii) a minimum number of 7 days of the week used (including at least four Saturdays and four Sundays sampled each compliance year). 	
D3.29 Table 39	As above	Monitoring CP: 1 Month RP: 1 Month	D3.MM.3	Drinking water in each distribution zone must be monitored according to the schedule prepared for rule D3.MM.2 for the following microbiological determinands: (a) <i>E. coli</i> ; (b) total coliforms:	Monitoring CP: 1 Month RP: 1 month
D3.30	Routine sampling sites must be located to adequately represent water in the distribution system, including water leaving storage facilities, and entry points for water from another water supplier.	Assurance CP: 1 Year RP: 1 Year	D3.MM.4	Routine sampling sites for microbiological monitoring must be located to adequately represent water in a distribution system, including— (a) drinking water leaving storage facilities; and (b) entry points for drinking water from other drinking water suppliers.	Assurance CP: 1 Year RP: 1 Year
D3.31	Samples must be collected according to written sampling protocols prepared by the drinking water supplier or the laboratory undertaking the sample analysis.	Assurance CP: 1 Year RP: 1 Year	D3.MM.5	Samples for microbiological monitoring in a distribution system must be collected according to sampling protocols prepared by the drinking water supplier or the laboratory or on-site analysis system undertaking the sample analysis.	Assurance CP: 1 Year RP: 1 Year

Final interpretation terms

Final term	Final definition	Changes
Act	Means the Water Services Act 2021.	Added.
abstraction point	See section 5 of the Water Services Act 2021.	Removed.
annulus	The void between a bore hole and the bore casing.	Formatting change only.
apron (bore)	An impervious ground covering, typically concrete, which prevents ingress of surface water into the bore.	Formatting change only.
backflow	See section 5 of the Water Services Act 2021.	Removed.
backflow prevention device	See section 5 of the Water Services Act 2021.	Removed.
backwash	The process of cleaning a filter by reversing a flow of fluid which may contain air through it.	Removed.
barrier	A process or infrastructure which prevents or reduces the likelihood of contamination of a drinking water supply.	Formatting change only.
Benthic cyanobacterial mat	A collective mass of cyanobacteria that forms on the bottom surface of a water body but can sometimes detach and float to the surface.	Updated definition.
bore	A piped or encased hole constructed to access groundwater.	Formatting change only.
bore head	A part of a bore infrastructure located above ground or within the accessible part of an underground access or inspection chamber.	Removed.
building	Means a stand-alone structure where drinking water is provided. A building does not include a structure where only non-potable water is provided for other uses.	Updated definition.
C.t value	The product of the concentration (C) of a disinfectant and the contact time (t) required to control micro-organisms.	Formatting change only.
calibration	Comparing the accuracy of a measuring device to a known standard (which may be a reference device) and adjusting it appropriately.	Removed.
calmed bottom inlet	A tank inlet pipe on the floor of a tank which is designed to prevent disturbance of sediment as water enters the tank.	Removed.
cartridge	The removable component of a cartridge filter which is used to entrap particulate material.	Removed.
cartridge filtration	A treatment which uses a disposable cartridge to remove particulate material from water.	Removed.
certification	Written confirmation, usually by a manufacturer, that certain requirements or standards have been met.	Removed.
coagulation	A chemical process to neutralise matter in water and which leads to floc formation.	Removed.
compliance period	Means the time over which compliance is assessed, usually 1 day, 1 month or 1 year.	Added.
consumer	See section 5 of the Water Services Act 2021.	Removed.
contact time	The hydraulic residence time of a disinfection process.	Formatting change only.
T₁₀ (contact time)	The effective contact time, which is the time it takes 10% of the volume of a unit to pass through a tank.	Formatting change only.
cross connection	Any actual or potential connection between a drinking water supply and stormwater, wastewater, or other infrastructure.	Formatting change only.
cyanobacteria	A major group of micro-organisms capable of photosynthesis, sometimes referred to as blue-green algae.	Removed.

cyanotoxin	A toxin produced by cyanobacteria.	Removed.
Designated UV validation standard	Means one of the following: <ul style="list-style-type: none"> • NSF/ANSI 55 Class A (for populations of up to 5000) • USEPA Ultraviolet Disinfection Guidance Manual • DVGW Technical Standard W294-1:2023-12 • ÖNORM M 5873-1: 2020 01 01 • DIN 19294-1:2020-08 • ÖNORM M5873 (if installed before 1 January 2020) 	Added.
determinand	has the meaning set out in the Water Services (Drinking Water Standards for New Zealand) Regulations 2022.	Minor wording changes.
differential pressure	The difference in pressure between two given points, for example, on the inlet and outlet of a filter.	Formatting changes only.
direct filtration	A treatment process which consists of coagulation, flocculation, and filtration, without a sedimentation process before filtration.	Formatting changes.
direct integrity test	A physical test applied to a membrane unit to identify and isolate one or more leaks that could result in contamination of the filtrate.	Formatting change only.
disinfection	The process used to kill or inactivate micro-organisms.	Removed.
disinfection by-product or DBP	A substance formed in drinking water as a result of a disinfection process.	Formatting change only.
dissolved air flotation	A clarification process in which the flocs formed during coagulation and flocculation are floated to the surface by air bubbles.	Removed.
distribution system	All components (e.g. buildings, storage tanks, electrical equipment, reticulation, pumps, instrumentation, etc) of a drinking water supply used to transmit drinking water to consumers or other drinking water suppliers.	Formatting change only.
distribution zone	All or part of a distribution system which contains water of a similar character, often defined as a bounded geographic area. Every drinking water supply with a distribution system has at least one distribution zone.	Formatting change only.
domestic self-supply / domestic self-supplier	See section 10 of the Water Services Act 2021.	Removed.
drinking water	See section 6 of the Water Services Act 2021.	Removed.
Drinking Water Quality Assurance Rules (2022) or Rules	See section 49 of the Water Services Act 2021.	Removed.
Drinking Water Standards or Standards	See the Water Services (Drinking Water Standards for New Zealand) Regulations 2022. Also see regulations made under section 47 of the Water Services Act 2021.	Removed.
drinking water supplier	See section 8 of the Water Services Act 2021.	Removed.
drinking water supply	As defined by section 9 of the Water Services Act 2021.	Removed.
duty (UVI) sensor	The duty (on-line) UV sensor installed in a UV reactor that monitors UV intensity during UV equipment operations.	Formatting change only.
<i>Escherichia coli</i> or <i>E. coli</i>	A bacteria species used as an indicator of faecal contamination of water. The presence of <i>E. coli</i> almost certainly indicates pathogens harmful to human health are present.	Removed.
event based monitoring	Monitoring of a drinking water supply to understand the effects of a specific event on its operation and the safety of drinking water.	Removed.

filtrate	Water, other than wash water, leaving a filter.	Formatting change only.
filtration	A treatment process that physically removes particles from water by passing it through a medium such as sand or other suitable material.	Removed.
filtration housing	The casing containing a cartridge filter or filter material.	Removed.
floating off take	A device designed to extract water from the top of water storage infrastructure using a flotation device.	Removed.
flocculation	A process that promotes the formation and growth of floc, which are loosely clumped masses of fine particles.	Removed.
FAC	Means free available chlorine, which is the chlorine present in chlorinated water in the form of hypochlorous acid and hypochlorite ion.	Updated Definition and removed long version of word.
FACE	Means free available chlorine equivalent, which is the FAC concentration that would have the same disinfecting power as the chlorine solution would have at pH 8.	Updated Definition and removed long version of word.
groundwater	Water contained beneath the land surface.	Removed.
inactivate	A mechanism which inhibits the reproduction of a micro-organism.	Formatting change only.
instantaneous total return rate	The amount of recycled water flow being returned to, and entering, the treatment system at a given point in time.	Removed.
log credit	A method for determining a treatment level based on a log-scale control of the target micro-organism.	Formatting change only.
MAV	Means maximum acceptable value, which has the meaning set out in the Water Services (Drinking Water Standards for New Zealand) Regulations 2022	Updated Definition and removed long version of word.
media filter	A filtration process which uses a media, e.g., sand, for the removal of particulate matter.	Removed.
membrane filtration	A pressure or vacuum driven separation process in which particulate matter is rejected by an engineered barrier (membrane).	Removed.
microfiltration	A filtration process, usually membrane filtration, with pore sizes in the range of 0.1-10 microns (100 - 10,000 nm).	Removed.
NTU	Means nephelometric turbidity unit which is a unit of measurement for turbidity.	Updated Definition and removed long version of word.
(oo)cysts	Collective term for oocysts and cysts. A Cryptosporidium oocyst is a thick-walled structure within which Cryptosporidium zygotes develop and that serves to transfer the organism to new hosts.	Formatting change only.
operator	See section 11 of the Water Services Act 2021.	Removed.
ozone contactor	A vessel which facilitates the dissolution of ozone into water and provides sufficient contact time for disinfection.	Removed.
ozone residual	Ozone remaining after disinfection has been achieved.	Formatting change only.
pH adjustment	The process of changing the pH of water using acidic or basic compounds.	Removed.
planktonic cyanobacteria	Cyanobacteria which are freely floating in a body of water.	Formatting change only.
point of supply	See section 13 of the Water Services Act 2021.	Removed.
pore size	The nominal or absolute size of the holes or apertures in a thin layer of continuous medium, e.g. a membrane filter.	Formatting change only.

property	Separate rating unit as defined by the Rating Valuations Act 1998 or a separate rating area under the Local Government (Rating) Act 2002.	Formatting change only.
rapid media filter	A media filter which can be pressure or gravity fed and is regularly backwashed.	Removed.
raw water	See section 5 of the Water Services Act 2021.	Removed.
recycled water	Water, usually discharged from a treatment process which is returned to the start of the treatment process (i.e. recycled).	Formatting change only.
reduction equivalent dose (RED)	A UV dose of validated UV systems that have undergone independent, third party bioassay testing using live surrogate microorganisms to physically test and ascertain reactor performance	Formatting change only.
reference (UVI) sensor	A calibrated sensor used to check the validation of the duty sensor.	Formatting change only.
registered water supply	See subpart 7 of Part 2 of the Water Services Act 2021.	Removed.
Reporting period	Means the time that compliance reporting must cover and may include one or more compliance periods, reporting periods differ depending on the Rules modules being reported against.	Added.
residual disinfection	A disinfectant, typically chlorine, remaining in the water after it leaves a treatment plant to act as a barrier to recontamination of water in a distribution system.	Formatting change only.
roof water	The rainwater collected from the roof of a structure.	Removed.
safe drinking water	See section 7 of the Water Services Act 2021.	Removed.
sampling point / site	A location / tap for the collection of water samples.	Removed.
sedimentation	A treatment process in which solid particles settle to and are removed from the bottom of a clarifier or settling tank.	Removed.
slow sand filtration	A filtration process that consists of a bed of fine sand, which is not backwashed and relies on a biologically active layer on top of the sand to remove and degrade particles.	Removed.
slug (disinfection)	A disinfection method consisting of placing chlorine liquid in the main to achieve a target concentration when the main is full, completely filling the main to remove all air pockets and flushing the main.	Removed.
source and source water	See section 5 of the Water Services Act 2021.	Removed.
source water risk management plan	See section 5 of the Water Services Act 2021.	Removed.
spray chlorination (disinfection)	A process of spraying chlorine solution to disinfect materials, equipment and fittings used in repairs and construction of water drinking supplies.	Removed.
spring	A location where groundwater naturally emerges from the ground surface.	Removed.
surface loading rate	The flow of water through a settling tank or clarifier, divided by the effective surface area of the clarifier.	Removed.
surface water	A body of water that is open to atmosphere, whether running (streams and rivers) or quiescent (lakes, reservoirs, impoundments and ponds).	Formatting change only.
tablet (disinfection)	Disinfection of a pipe using chlorine tablets placed inside the pipe during construction to disinfect the mains once installed.	Removed.
target turnover rate	The ideal amount of time that it takes for the volume of the water in a tank to be completely replaced.	Removed.

total coliforms	Genera in the family Enterobacteriaceae that will grow on a specific selective medium when incubated at 35°C ± 0.2°C.	Removed.
turbidity	A measure of the suspended particles in a sample that cause loss of clarity by scattering light.	Removed.
ultrafiltration	A filtration process, usually membrane filtration, with pore sizes in the range of 0.01-0.1 microns (10 - 100 nm).	Removed.
UV	Means ultraviolet light.	
UV dose	The amount of UV radiation emitted into water within a UV reactor calculated by the UV intensity multiplied by the exposure time, usually measured in mJ/cm ² .	Formatting change only.
UVI	Means UV intensity, which is the intensity of UV radiation, usually measured in mW/cm ² .	Updated definition.
UV transmittance or UVT	Means UV transmittance, which is a measure of the amount of ultraviolet light (typically measured at 254 nm) that passes through water.	Updated definition.
validation	Confirmation that equipment or a process meets, or will meet, certain performance requirements or standards, typically referring to UV reactors or membrane filters.	Removed.
verification	Checking the accuracy of a measuring device against a known standard (which may be a reference device).	Removed.
waste stream	A flow of water from a drinking water treatment plant that is not intended for further treatment or use as drinking water.	Formatting change only.
water carrier	See section 5 of the Water Services Act 2021.	Removed.
Water Services Act 2021 or Act	See the Water Services Act 2021.	Removed.