

Appendix J

Water Quality Classifications

Resource	Water Quality Classification (blank if just underlying classification)
WAIRAU CATCHMENT	
Surface Water	
All surface waters (underlying classification)	F - managed for fishery purposes (primary objective being safe consumption of fish)
Tuamarina River	
Other lower Wairau northern tributaries (Top Valley Stream to sea) (includes Pukaka Stream)	FS - managed for fish spawning
Wairau northern tributaries above Top Valley Stream (includes Lake Chalice and Goulter River)	NS - managed in its natural state (catchments within Conservation Estate) FS - managed for fish spawning AE - managed for aquatic ecosystem purposes
Wairau Diversion	FS - managed for fish spawning (from mouth to confluence of Pukaka Drain only)
Lower Wairau River (SH1 to sea)	CR - managed for contact recreation purposes FS - managed for fish spawning
Middle Reaches Wairau River (SH1 to Wash Bridge)	CR - managed for contact recreation purposes FS - managed for fish spawning
Upper Wairau River (source to Wash Bridge including tributaries)	FS - managed for fish spawning AE - managed for aquatic ecosystem purposes
Upper Wairau southern tributaries (Branch/Leatham Rivers to Marchburn River)	AE - managed for aquatic ecosystem purposes FS - managed for fish spawning CR - managed for contact recreation purposes
Waihopai River	CR - managed for contact recreation purposes
Upper Opawa (upstream of Hammerichs Rd including tributaries)	
Middle Opawa River (from SH1 to Hammerichs Rd)	CR - managed for contact recreation purposes FS - managed for fish spawning
Lower Opawa River	FS - managed for fish spawning
Upper Taylor River (upstream of Taylor Dam)	
Lower Taylor River (including Taylor Dam and Doctors Ck, Fultons Creek and Murphys Creek)	AE - managed for aquatic ecosystem purposes CR - managed for contact recreation purposes
Riverlands Industrial Estate Drain	
Co-op Drain	
Spring Creek and catchment	A - managed for aesthetic purposes AE - managed for aquatic ecosystem purposes

Resource	Water Quality Classification (blank if just underlying classification)
Grovetown Lagoon	
Roses Overflow	FS - managed for fish spawning
Significant wetlands (eg Bothams Bend, Para Swamp, Rarangi Beach wetlands)	
Groundwater	
Wairau Unconfined Aquifer (Renwick Road to Hammerichs Road)	DW - managed at drinking water quality
Wairau Semiconfined Aquifer (Hammerichs Road to SH1)	DW - managed at drinking water quality
Wairau Confined Aquifer (SH1 to sea)	DW - managed at drinking water quality
Rarangi Shallow Aquifer	DW - managed at drinking water quality (except Fe)
Southern Valley Aquifer Systems	DW - managed at drinking water quality (except Fe and Mn)
AWATERE CATCHMENT	
Surface Water	
All surface waters (underlying classification)	F - managed for fishery purposes
Black Birch Stream	WS - managed for water supply purposes FS - managed for fish spawning
Blairich Stream	FS - managed for fish spawning
Tributaries in Conservation Estate	NS - managed in its natural state
Lower Awatere River below Medway Bridge (including tributaries)	
Upper Awatere River above Medway Bridge (including tributaries)	FS - managed for fish spawning
EAST COAST CATCHMENTS	
Surface Water	
All surface waters (underlying classification)	F - managed for fishery purposes
Flaxbourne and Blind Rivers	
Lake Elterwater	
Waima (Ure) River	
CLARENCE CATCHMENT	
Surface Water	
Clarence River and tributaries	FS - managed for fishery spawning AE - managed for aquatic ecosystem purposes
COASTAL MARINE AREA	
All coastal marine area	SG - managed for shellfish gathering

Surface Water Quality Classes

Standard (from RMA Third Schedule, unless marked † in which case from RMA Section 70)	Numeric Interpretation of Standard	
F - Water Managed for Fishery Purposes (underlying class)		
† Conspicuous oil or grease films, scums or foams, or floatable or suspended materials	Shall not be produced	No numeric interpretation available
† Colour or visual clarity	Shall not change	Hue shall not be changed by more than 10 points on the Munsell scale.
		<p>The natural clarity shall not be conspicuously changed due to sediment or sediment laden discharge originating from the site of a land disturbance operation.</p> <p>There shall be no greater than 33% reduction in the visual clarity of the receiving water as measured by the horizontal sighting of a black disk; and/or</p> <p>There shall be no greater than 15% increase in the turbidity of the receiving water as measured in NTU.</p> <p>Measurements are to be made immediately above or upstream of the discharge and below the discharge after reasonable mixing.</p> <p>For a description of the two methods refer to the Ministry for the Environment Water Quality Guidelines No. 2, Guidelines for the Management of Water Colour and Clarity, June 1994.</p> <p>See the Definition Chapter for the definition of Reasonable Mixing.</p>
† Objectionable odour	Shall not be emitted	No numeric interpretation available
† Suitability for consumption by farm animals	Shall not be rendered unsuitable	No numeric interpretation available

Standard (from RMA Third Schedule, unless marked † in which case from RMA Section 70)		Numeric Interpretation of Standard																											
† Aquatic life	Shall not be any significant adverse effects	<p>Light Penetration</p> <p>In water deeper than half the euphotic depth, the euphotic depth shall not be changed by more than 10%.</p> <p>In waters shallower than half the euphotic depth, the lighting at the bed shall not be reduced by more than 20%.</p> <p>Ammonia Toxicity</p> <p>The four-day average concentration of total ammonia shall not exceed the following values</p> <table border="1"> <thead> <tr> <th rowspan="2">pH</th> <th colspan="3">Total Ammonia, NH₄-N (g/m³)</th> </tr> <tr> <th>≤15°C</th> <th>20°C</th> <th>25°C</th> </tr> </thead> <tbody> <tr> <td>7.50</td> <td>1.81</td> <td>1.23</td> <td>0.86</td> </tr> <tr> <td>7.75</td> <td>1.64</td> <td>1.15</td> <td>0.81</td> </tr> <tr> <td>8.00</td> <td>1.09</td> <td>0.76</td> <td>0.54</td> </tr> <tr> <td>8.25</td> <td>0.62</td> <td>0.44</td> <td>0.32</td> </tr> <tr> <td>8.50</td> <td>0.36</td> <td>0.26</td> <td>0.19</td> </tr> </tbody> </table> <p>Note that daily average based on single sample taken noon - 2pm (NZST)</p> <p>Particulate Organic Material</p> <p>The daily average concentration of particulate organic matter shall not exceed 4g/m³</p>	pH	Total Ammonia, NH ₄ -N (g/m ³)			≤15°C	20°C	25°C	7.50	1.81	1.23	0.86	7.75	1.64	1.15	0.81	8.00	1.09	0.76	0.54	8.25	0.62	0.44	0.32	8.50	0.36	0.26	0.19
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Temperature	<p>Shall not be changed by more than 3°C.</p> <p>Shall not exceed 20°C.</p> <p><i>(Note that this is more stringent than the 25°C in the RMA Third Schedule)</i></p>	N/A																											
Dissolved Oxygen	Shall exceed 80% of saturation	N/A																											
Suitability of fish for human consumption	Shall not be rendered unsuitable by the presence of contaminants	No numeric interpretation available																											
AE - Water Managed for Aquatic Ecosystem Purposes*																													
Aquatic Life	<p>Shall not be any adverse effect from:</p> <ul style="list-style-type: none"> pH change increase in the deposition of matter on the bed contaminants 	Australian Water Quality Guidelines for Fresh and Marine Waters (ANZECC 1992)																											

Standard (from RMA Third Schedule, unless marked † in which case from RMA Section 70)		Numeric Interpretation of Standard
Biological Growths	Shall be no undesirable growths	Bacterial and/or fungal slime growths shall not be visible to the naked eye as obvious plumose growths or mats
		The daily average carbonaceous BOD ₅ due to dissolved organic compounds (ie those passing a GF/C filter) shall not exceed 2 g/m ³ .
		The median concentration of dissolved reactive phosphorus (DRP) shall be less than 15 mg/m ³ at low flows, unless other physical and/or biological factors prevent undesirable biological growths developing at higher DRP concentrations
FS - Water Managed for Fish Spawning Purposes*		
Temperature	Shall not adversely affect spawning of specified fish species during the spawning season	Shall not exceed 14°C between April and October except where naturally occurring. Species: <ul style="list-style-type: none"> • trout • salmon • lamprey • giant kokopu • koaro • inanga
Biological Growths	Refer Class AE	Refer Class AE
CR - Water Managed for Contact Recreation Purposes*		
Visual Clarity	Shall not be so low as to be unsuitable for bathing	Horizontal sighting range of 200mm black disk shall exceed 1.6m during low flows.
Contaminants	Shall not render water unsuitable for bathing	Median concentration of enterococci of at least 20 samples taken throughout the bathing season shall not exceed 33 per 100 mL, nor shall any sample exceed 107 enterococci per 100 mL. The bathing season is defined as the period of 1 November 10 to 1 April inclusive.
Biological Growths	Shall be no undesirable growths	Refer Class AE Seasonal maximum cover of stream or river beds by periphyton as filamentous growths or mats (more than 3mm thick) shall not exceed 40%, and the biomass on the bed shall not exceed 100mg chlorophyll a/m ²
WS- Water Managed for Water Supply Purposes*		
pH	Shall be within the range 6.0 - 9.0	N/A
Suitability for treatment	Shall not be rendered unsuitable for treatment (equivalent to coagulation, filtration, and disinfection) by presence of contaminants	Turbidity, except that produced naturally under flood conditions, shall not exceed 20 NTU

Standard (from RMA Third Schedule, unless marked † in which case from RMA Section 70)		Numeric Interpretation of Standard
Suitability for human consumption or irrigation	Shall not be tainted or contaminated so as to make it unpalatable or unsuitable for human consumption after treatment, or unsuitable for irrigation.	Human Consumption Water treated by coagulation/filtration/ disinfection shall be able to comply with the Drinking-Water Standards for New Zealand 1995
		Irrigation Shall comply with irrigation guidelines in Australian Water Quality Guidelines for Fresh and Marine Waters (ANZECC 1992).
Biological Growths		The daily average carbonaceous BOD ₅ due to dissolved organic compounds (ie those passing a GF/C filter) shall not exceed 2 g/m ³
		Phytoplankton chlorophyll-a shall be less than 20 mg/ m ³ The median concentration of dissolved reactive phosphorus (DRP) shall be less than 15 mg/m ³ at low flows, unless other physical and/or biological factors prevent undesirable biological growths developing at higher DRP concentrations
NS - Water Managed in its Natural State		
Natural Quality	Shall not be altered	No numeric interpretation available
A - Water Managed for Aesthetic Purposes		
Visual Clarity		Hue shall not be changed by more than 5 points on the Munsell scale.
		The natural clarity of any permanently flowing river, lake, wetland, or the sea shall not be conspicuously changed due to sediment or sediment laden discharge originating from the site of a land disturbance operation. There shall be no greater than 20% reduction in the visual clarity of the receiving water as measured by the horizontal sighting of a black disk; and/or There shall be no greater than 10% increase in the turbidity of the receiving water as measured in NTU. Measurements are to be made immediately above or upstream of the discharge and below the discharge after reasonable mixing. For a description of the two methods refer to the Ministry for the Environment Water Quality Guidelines No. 2, Guidelines for the Management of Water Colour and Clarity, June 1994. See the Definition Chapter for the definition of Reasonable Mixing.
		Reflectance shall not be changed by more than 50%.

Standard (from RMA Third Schedule, unless marked † in which case from RMA Section 70)		Numeric Interpretation of Standard
SG - Water Managed for the gathering or cultivation of shellfish for human consumption		
Temperature	Shall not be changed by more than 3°C.	
Dissolved Oxygen	Shall exceed 80% of saturation	N/A
Suitability of fish for human consumption	Shall not be rendered unsuitable by the presence of contaminants	Median faecal coliform concentration of not less than five samples, taken within any consecutive 30 day period, shall not exceed a Most Probable Number (MPN) of 14 per 100ml (or Colony Forming Units per 100ml), and not more than ten percent of samples taken within any consecutive 30 day period shall exceed an MPN of 43 per 100ml (or Colony Forming Units per 100ml) as a result of any discharge of a contaminant or water. Samples shall not be taken on the same or consecutive days.
* Note that to avoid repetition those Third Schedule Standards which are covered by, or exceeded by, the underlying class (F) have been omitted.		

