

Guidelines for Water Quality Testing

 = Optimum range for Freshwater Creeks

Variable	Range	Definition of range	What does this tell us?
Temperature	Variable depending on day.	Variable depending on species.	All plant and animal life have preferred ranges of temperatures they like to live in. Above or below this range can impact the ecology of the creek.
pH	0 - 6.5 6.5 - 8.5 8.5 - 14	Acidic Normal Alkaline	pH (potential of hydrogen) is a numeric scale used to specify the acidity or basicity of a matrix (water, soil...). Drinking water typically has a pH around 7.
Conductivity	0-200µS/cm 125 - 2200 µS/cm	Rain Water Environmental Waters	The conductivity tells us how much the water can conduct electricity i.e. how many ions it has in it. Dissolved salts are high in ions.
Conductivity in more detail	0 - 200 µS/cm 200 - 500 µS/cm 600 - 1200 µS/cm 1500 - 4000 µS/cm 4000 - 33 000 µS/cm 33 000 - 58 000 µS/cm 58 000 - 80 000 µS/cm 80000 - 120 000 µS/cm	Rain Water Mains Water Freshwater ecosystems Brackish Water Salty Water Sea Water Hyper Saline Water Salt Pans	
Dissolved Oxygen	< 2.0 mg/L 2.0 - 5.0 mg/L 5.0 - 8.5 mg/L > 8.5 mg/L	Below ecosystem requirements Blackish in colour/smelly Normal Algal influenced	The dissolved oxygen tells us how much oxygen is in the water which can be used by aquatic life.
Turbidity	< 10 NTU (Nephelometric Turbidity Unit)	Normal for urban	The turbidity tells us how clear the water is e.g. is it muddy etc. If it is too high (too many particles in the water) it can effect plant growth (lack of sunlight) and impact the fish and animal life's ability to breathe (clog fish gills).

What is it telling us?

Variable	Measure	How to change variable
Temperature	Low temperature is caused by the influence of external temperature and the amount of cold water brought in by rainfall	Plant trees to create shade and reduce temperature extremes.
	Prolonged low temperature could lead to death of aquatic life	
pH	Prolonged high temperature (influenced by external temperature) could lead to low dissolved oxygen and algal bloom	Check fertilizer run off? Stormwater education – car washing etc
	Low pH could be an indicator of acid present in the system such as run off from acid sulphate soils	
Conductivity	High pH could be an indicator of alkali present in the system (lime) such as industrial wastes	Check fertilizer run off? Stormwater education – car washing etc
	Low conductivity could be an indicator of high rainfall Could lead to fresher water	
Dissolved Oxygen	High conductivity lead to low dissolved oxygen and death of freshwater aquatic life	Check fertilizer run off? Stormwater education – car washing etc
	Low dissolved oxygen could be an indicator of algal bloom, breakdown of organic matter, low flow, high BOD Could lead to death of aquatic life	
Turbidity	High dissolved oxygen could be an indicator of super-saturation of the system due to high flow Could lead to death of aquatic life	Plant trees, grasses and shrubs to prevent soil erosion. Check fertilizer run off? Stormwater education – car washing etc
	High turbidity (cloudy water) could be an indicator of runoff, high flows, erosion Could lead to death of aquatic life	