

## Water Quality Parameters Sheet

Water quality impacts us in many different ways. In order to measure the quality of a water source, a number of parameters (or characteristics) can be studied. Use the tables below to interpret your findings.

**pH:** Measurement of *acidity* or *alkalinity* of a solution.

The Effects of pH on Freshwater Aquatic Life												
More Harmful			Less Harmful			Beneficial			Less Harmful		More Harmful	
3.0	3.5	4.0	4.5	5.0	5.5	6.5	8.2	9.0	10.5	11.0	11.5	
ACIDIC					NEUTRAL			ALKALINE				

**Conductivity** ( $\mu\text{S}/\text{cm}$ ): Measurement of water's *ability to pass electrical current* and involves the concentration of ions in water. Often used interchangeably with “salinity” of water, and primarily identifies *presence of salts* in water.

Conductivity ( $\mu\text{S}/\text{cm}$ )	Interpretation
0 - 200	Pristine
200 - 1,000	“Normal” for most major rivers
1,000 - 10,000	Saline/impacted condition

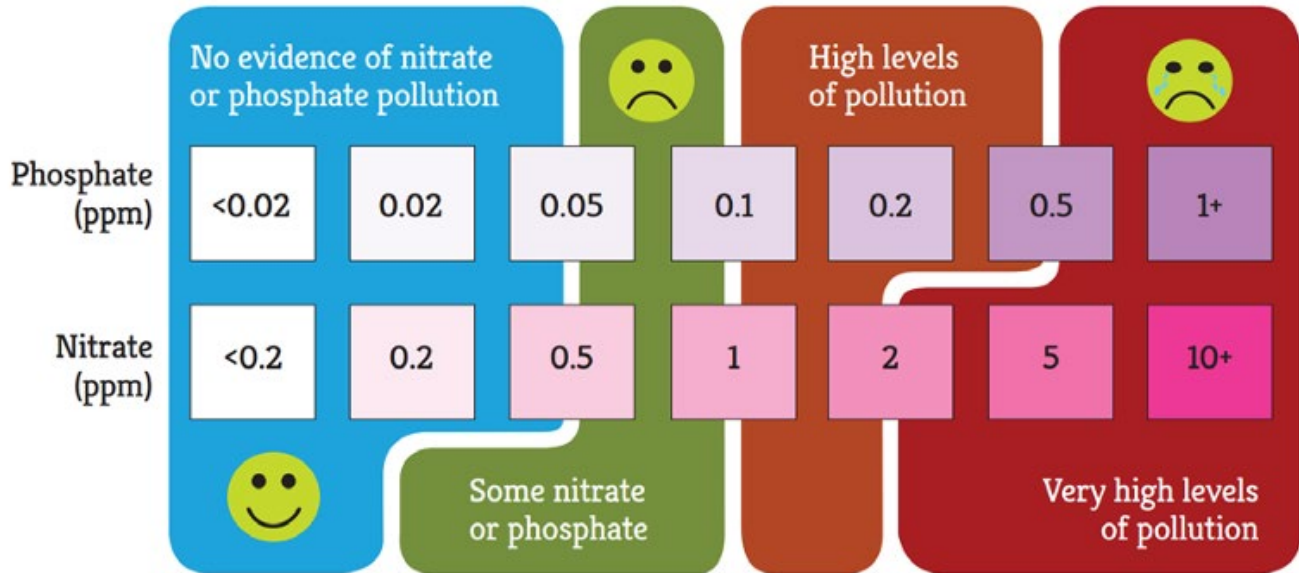
**Total Dissolved Solids** (TDS; ppm): Measurement of all *particulates (particles) dissolved in water*. Can be interpreted as the purity of the water.

TDS (ppm)	Interpretation
0 - 50	Ideal drinking water
50-100	Carbon filters, mountain springs
100-200	Hard Water
200-300	Average tap water; marginally acceptable
300-400	High tap or mineral springs
400-500	EPA’s max contaminant level
500+	Unfit for drinking water

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**Phosphate** (ppm): Phosphate is a naturally-occurring element that is *essential to supporting life*, but too much of it can cause an overgrowth of algae. Phosphate tests can measure for *concentrations of orthophosphates* that come in different forms.

**Nitrate** (ppm): *Nutrient* that can *stimulate excessive plant growth*. Natural processes can cause low levels of nitrate in drinking water. A nitrate test measures the concentration of nitrate in freshwater, typically in parts per million (ppm) or milligrams per liter (mg/l). The benchmark for comparison is 10 ppm, which is considered unsafe for drinking.



**Dissolved Oxygen** (DO; ppm): Fresh waterbodies (ponds, lakes, streams) need to have sufficient *oxygen to support aquatic life*.

Temperature, pressure, and salinity all affect the levels of dissolved oxygen. Water bodies that have high nutrient levels that stimulate algal blooms (see above) can have low dissolved oxygen due to the decomposition of dead algae, a process which uses up oxygen.

