



Freshwater Acceptance Levels for Chemical Parameters

PARAMETER	FRESHWATER STREAM		POTABLE
	ACCEPTABLE	UNACCEPTABLE	
COLOR	Use as indicator	Use as indicator	
ODOR	Use as indicator	Use as indicator	3 TON (threshold odor numbers) *Secondary contaminant *Affects acceptability of water for drinking and recreation
TURBIDITY	Not to exceed 100 NTU (nephelometric turbidity units)	Over 100 NTU *Clogs gills, suffocates bottom dwellers; can result in lower DO and higher water temperatures	Not to exceed 100 NTU
pH	6-9 (6.5-8.2 optimal)	Below 5 and over 9 will support little or no aquatic life *Low pH can release metals into water	6.5-8.5 (secondary contaminant) *Low pH = bitter metallic taste, corrosive to plumbing *High pH= slippery feel, soda taste, deposits on plumbing, need more chlorine to kill pathogens
DISSOLVED OXYGEN	Minimum 4-5 ppm *Good water averages about 9	Below 3 ppm *Most organisms cannot survive	No health standards *More oxygen improves taste
HARDNESS Amount of Ca and Mg in water	100-200 ppm optimal *Important for shells and bones in animals *Necessary for cell walls, nutrients, and chlorophyll component in plants	*Heavy metals dissolve in soft water (<60ppm) and are more toxic to aquatic life *Over 250 ppm (hard water) calcium carbonate precipitates out	No health standards *Over 180 ppm requires conditioning, deposits minerals *Soft water 0-60 ppm, corrodes pipes, may increase risk of heart attack
ALKALINITY Buffering capacity	100-200 ppm ideal for freshwater life *Levels between 20-200 ppm typical in freshwater	Low alkalinity has little ability to buffer against changes in pH	No health standards
NITRATE	Less than 1 ppm *Necessary for organisms in small amounts to build proteins	Over 1 ppm *High levels cause excessive plant growth with end result of lowering DO	Not to exceed 10 ppm *Nitrite can prevent blood from transporting oxygen
IRON	Less than 1 ppm *Necessary for organisms in small amounts to build proteins	High levels of iron precipitates out - clogs gills and suffocates bottom dwellers	Not to exceed 0.3 ppm * little health significance – affects taste and odor, stains plumbing fixtures