

Constituent (mg/l)	Class 0	Class 1	Class 2	Class 3	Class 4
TDS	450	1000	2400	3400	>3400
pH	5-9.5	4.5-5 or 9.5-10	4-4.5 or 10-10.5	3-4 or 10.5-11	>11
EC (mS/m)	70	150	370	520	>520
Total hardness (T.H.)	200	300	600	600	>600
Calcium (Ca)	80	150	300	300	>300
Magnesium (Mg)	70	100	200	400	>400
Sodium (Na)	100	200	400	1000	>1000
Iron (Fe)	0.50	1.00	5.00	10.00	>10
Manganese (Mn)	0.10	0.40	4.00	10.00	>10
Nitrate (as N)	6	10	20	40	>40
Chloride (Cl)	100	200	600	1200	>1200
Fluoride (F)	0.70	1.00	1.50	3.50	>3.5
Sulphate (SO ₄)	200	400	600	1000	>1000
Zin (Zn)	3	5	10	20	>20
Asernic (AS)	0.01	0.05	0.20	2.00	>2
Potassium (K)	25	50	100	500	>500

Water Quality Class Guidelines Table

Class 0	Ideal water quality-suitable for lifetime use
Class 1	Good water quality-suitable for use
Class 2	Marginal water quality-conditionally acceptable.
Class 3	Poor water quality-unsuitable for use without treatment.
Class 4	Dangerous water quality-totally unsuitable for use.

TREATMENT COMMENTS;

Whilst it may be technically possible to treat contaminated source water, be it from local municipalities, ground, well, river or dam water, it may

require from basic to advanced treatment technology , be expensive and not always totally effective due to lack of chemical information/values and changes in the water quality.

For this reason, prevention is the best way to ensure clean water. Water treatment include distillation, reverse osmosis, ion exchange or blending.

- **Distillation** – boils the water, catches the resulting steam and condenses the steam on a cold surface, a condenser, and nitrates & other minerals remain in the boiling tank. This is a 100% effective treatment system, but slow.
- **Reverse Osmosis, Membrane Filtration Technology** – forces water under pressure through a MEMBRANE [types of membranes are used for different water qualities i.e. tap water, brackish water or sea water] that filters out minerals and nitrates. One half to two thirds of the water remains behind as brine waste, pre the membrane as rejected water. Higher yield systems use water pressure of 150 psi.
- **Ion Exchange** – takes another substance, such as chloride and trades places with Nitrate or Calcium Hardness. An ion exchange unit is filled with special resin beads that are charged with chloride. As water passes over the beads, the resin takes up nitrate or calcium in exchange for chloride. As more water passes over the resin, all the chloride is exchanges for nitrate. The resin is recharged by backwashing with sodium chloride solution. The backwash solution, which is high in nitrate or calcium must be properly disposed of.
- **Blending** – is another method to reduce nitrates in drinking water. Mix contaminated water with clean water from another source to lower overall nitrate concentration. Blended water is not safe for infants but acceptable for livestock and healthy adults.

Having the water tested will assist to get it right first time;