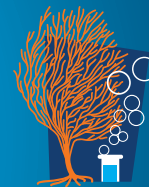


# AUSTRALIAN GUIDELINES: DRINKING WATER



COFFS HARBOUR  
LABORATORY

## pH

- While extreme pH values (less than 4 & greater than 11) may adversely affect health, there is insufficient data to set a health guideline.
- Less than 6.5 maybe corrosive.
- Greater than 8 progressively decreases efficiency of chlorination.
- Greater than 8.5 may cause scale and taste problems.

## TURBIDITY

- 5 NTU just noticeable in a glass
- Greater than 1 NTU may shield some micro-organisms from disinfection.
- Less than 1 NTU is desirable for effective disinfection.

## TOTAL DISSOLVED SOLIDS

- Less than 500 mg/L is regarded as good quality.
- 500 – 1000 mg/L is acceptable.
- Greater than 1000 mg/L causes excess scaling, corrosion and unacceptable taste.

## SALINITY

- <1 ppt is regarded as acceptable. Calculated from Total Dissolved Solids and conductivity.

## HARDNESS

- Caused by magnesium and calcium salts.
- Hard water is difficult to lather.
- 60 – 200 mg/L is regarded as good quality.
- Greater than 200 mg/L may lead to excessive scaling of pipes & fittings ( eg. may block safety valves on hot water systems ) and also taste problems.
- Less than 60 mg/L (with other factors) may increase corrosion.

## ALUMINIUM

- There is no health guideline currently established. The guideline value is based on post-flocculation problems.
- Less than 0.1mg/L is desirable.
- Lower levels are needed for renal dialysis.

## ARSENIC

- The Health Guideline is 0.01 mg/L.
- From natural sources and mining/industrial/agricultural wastes.

## BORON

- Health Guideline of 4 mg/L.
- Comes from natural leaching of minerals and contamination.
- Higher levels of contamination may be associated with seawater intrusion.
- Less than 1 mg/L is common in uncontaminated sources.

## CADMIUM

- Indicates industrial or agricultural contamination; from impurities in zinc fittings, solders and brasses.
- Health guideline is 0.002 mg/L.

## CHROMIUM

- Health guideline is 0.05 mg/L (if exceeded, analyse for hexavalent chromium).
- Comes from industrial/agricultural contamination of raw water or corrosion of materials in distribution system/ plumbing.

## COPPER

- Would not be a health consideration unless the concentration exceeds 2 mg/L.
- Staining may occur at concentrations above 1 mg/L.
- Copper can be removed from drinking water by increasing the pH, then using water treatment processes of coagulation and then filtration.

## IRON

- Occurs naturally in water, usually at less than 1 mg/L , but up to 100 mg/L in oxygen depleted waters.
- The guideline value is based on the taste threshold of 0.3 mg/L.
- High concentrations stain laundry and fittings.
- Iron bacteria may cause taste and odour problems and lead to pipe restrictions, blockages and corrosion.

# AUSTRALIAN GUIDELINES: DRINKING WATER



## LEAD

- Health guideline is 0.01 mg/L
- Occurs in water via dissolution from natural sources or household plumbing containing lead.

## MANGANESE

- Occurs naturally in water.
- Low concentrations found in surface water, higher concentrations in polluted and oxygen depleted water (eg. ground water at bottom of deep storages).
- Greater than 0.1 mg/L causes taste and staining problems.
- Less than 0.05 mg/L desirable.

## NICKEL

- Health guideline is 0.02 mg/L.
- Concentrations usually very low.
- Prolonged contact of water with nickel-plated fitting can increase concentrations.

## SODIUM

- No health based guideline considered necessary.
- Aesthetic value of less than 180mg/L is taste threshold.

## ZINC

- Natural Concentrations generally less than 0.01 mg/L.
- Raised concentrations caused by corrosion of galvanized pipes/fittings and brasses.
- Insufficient data to set health guideline value.
- Taste problems associated with concentrations above 3 mg/L.

## E.COLI & FAECAL COLIFORM

- Microbial indicators that may be useful for verifying the effectiveness of treatment and disinfection, and for assessing system cleanliness.
- No sample should contain any faecal coliform. In monitoring for microbiological quality, reliance is placed on tests for the presence of indicator organisms. These are faecal coliforms or alternatively E-coli.

## LANGELIER INDEX

- Used as a general indication of potential corrosion.
- It provides a useful assessment of water.

### Corrosive Characteristics Langelier Index

Highly aggressive	< -2.0
Moderately aggressive	-2.0 to 0.0
Nonaggressive	>0.0

For further information, visit NSW Health at [health.nsw.gov.au](http://health.nsw.gov.au)