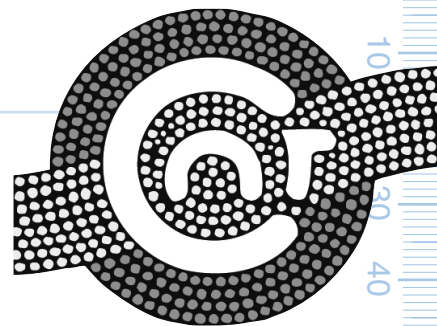


## Disinfecting a water tank



After measuring the volume of water in this tank, Seth added 1 litre of bleach.

### Background

In many remote areas water tanks are essential to provide a potable household water supply. This BUSH TECH shows how to clean up the water in water tanks by disinfection. Chlorination is the cheapest and easiest way to disinfect water and it is very efficient at killing harmful bacteria.

### When should I disinfect the water tank?

All water collected in household tanks will contain some bacteria. However, if the system is well maintained, the risk of the bacteria causing sickness, such as gastroenteritis, is small.

A water tank should not need to be regularly disinfected. A tank should be disinfected if, for example:

- the tank has been left for a long time without maintenance, such as leaving an outstation for the wet season;
- dead animals are found in the tank.

### Step 1: How much water is in the tank?

Before adding any chlorine to the water tank, you will need to find out how much water there is to treat. There are three methods to work out the volume of water in your tank.

#### Method 1

On the side of poly tanks, there is a label that describes the maximum capacity of water that can be stored in the tank. For example, if the label on the tank says it can hold 8000 litres and it is half full – then you have approximately 4000 litres.

#### Method 2

If you have a galvanised steel tank you can work out how much water is in your tank by measuring the height of the water and the diameter of the tank (see figure 1).

**H** = Height of the water level in the tank. To find out the height, measure (in metres) from the bottom to the water level.

**D** = Diameter of tank (in metres). The diameter is the length across the middle from one side to the other. The arrow across the top in figure 1 shows the diameter. It can be measured by getting up on top of the tank.

If you can't get on top of the tank, a good way to measure the diameter is to lay two star pickets on the ground (see figure 2). Measuring the distance between the star pickets will give you the diameter.

Figure 1

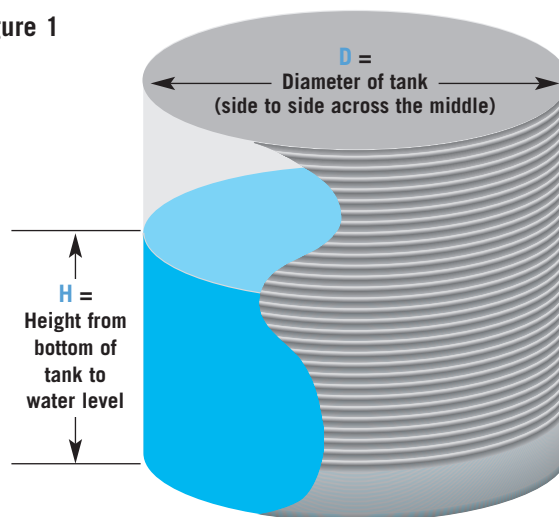
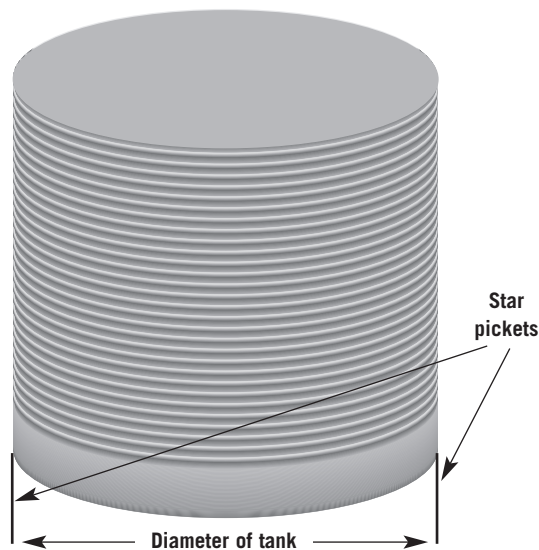


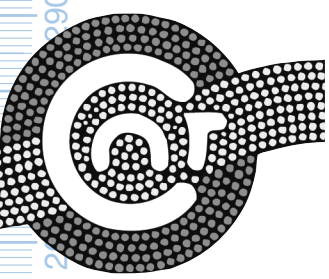
Figure 2



$$\text{Volume of water (in litres)} = D \times D \times H \times 0.785$$

For example, if the diameter is 1.83 and the height of the water level is 1.95 the answer would be:

**D x D x H x 0.785** is  $1.83 \times 1.83 \times 1.95 \times 0.785 = 5.12$  kl which is close enough to 5000 litres.

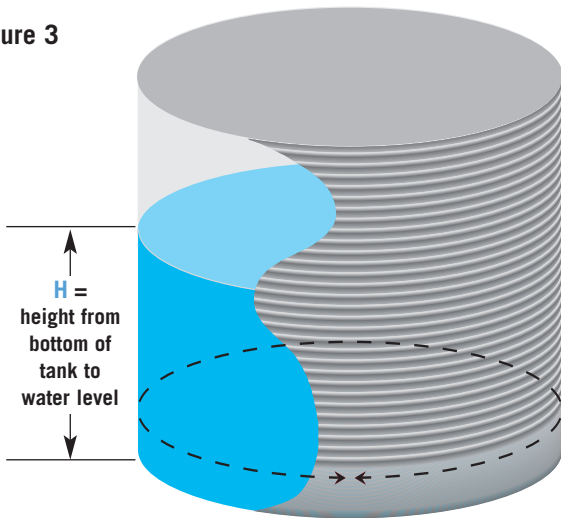


## Disinfecting a water tank

### Method 3

The third method is to measure the height of the water in the tank (as before) and the distance around the tank – the circumference. Run a piece of string around the base of the tank and measure the length of the string.

Figure 3



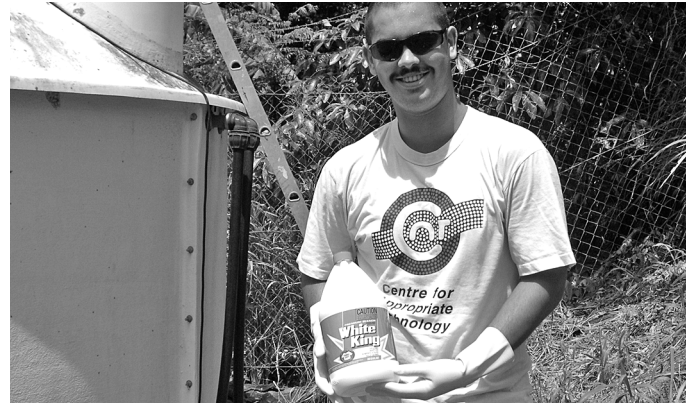
$$\text{Volume of water (in litres)} = H \times C \times C \times 80$$

For example, if the H (height) is 1.95 metres and the C (circumference) is 6.3 metres:

**Volume = H x C x C x 80** is  $1.95 \times 6.3 \times 6.3 \times 80 = 6000$  litre tank.

### Step 2: How much of which chlorine?

Bleach and chlorine are disinfectants. The bleach should be plain (not lemon or pine smelling) household grade that can be found in a general store. The chlorine for water tanks is the same as that used in swimming pools – except you only use a little bit. The active constituent in both the bleach and liquid chlorine is sodium hypochlorite. If you use powdered chlorine, the active constituent is calcium hypochlorite. (See below for quantities)



Seth shows bleach used to chlorinate the tank.

### Tips

- The tank should not be used for 24 hours after chlorinating it. The chlorine taste and smell should disappear after a few days.
- Some people throw a chlorine tablet into their tank. The tablets are designed to float in swimming pools and are not suited to water tanks. In a tank, they sink to the bottom and can corrode the steel.
- The best way to look after a rainwater tank is to keep the catchment clean. That means cleaning out the gutters and using an interceptor to flush the first rain from the roof away from the storage tank.
- For other tanks, keep them closed and they will stay clean.

### Safety

Read and follow the instructions on the label. When using bleach or chlorine always use gloves and protective glasses. In particular, if you are using powder chlorine always mix it up in a bucket of water before adding to the tank. Always put the water in the bucket first and then add the chlorine.

### Additional information

EnHealth Council 2004, Guidance on the use of rainwater tanks, Australian Government, Department of Health and Ageing.

Australian Water Association, We all use water: A user's guide to water and wastewater management, Number 4, Rainwater Tanks.

Victorian Public Health Division (2000), Your Private Drinking Water Supply, Victorian. Available online at: [www.health.vic.gov.au/environment/downloads/your\\_private\\_drinking\\_water\\_supply.pdf](http://www.health.vic.gov.au/environment/downloads/your_private_drinking_water_supply.pdf)

Compiled by Robyn Grey-Gardner,  
CAT/Cooperative Research Centre for Water Quality and  
Treatment, Alice Springs

### Aim for 5 mg/L dosage

Type of chlorine	How much to add to the tank	What is in it?
Plain household bleach	125 mL per 1000 litres water	4% chlorine as sodium hypochlorite
Liquid pool chlorine	40 mL per 1000 litres water	12.5% chlorine as sodium hypochlorite
Powder pool chlorine	7 grams of granular per 1000 litres water	65% chlorine as calcium hypochlorite