

## EMERGENCY WATER STORAGE

### ***How much water do I need?***

A normally active person needs to drink at least two liters of water each day. Hot environments can double that amount. Children, nursing mothers and ill people will need even more. You will also need water for food preparation and hygiene. You can minimize the amount of water your body needs by reducing activity and staying cool.

Store at least four litres (1 gallon) per person per day: two for drinking, and two for food preparation, hygiene and dishwashing. In preparation for an emergency, have at least a three-day supply of food and water for each member of your family. Seventy-two hours is the minimum planning period. Emergency services planning by local and state governments is based on the assumption that households will take care of their own food and water needs for the first 72 hours. Plan for two weeks, particularly in remote areas.

Plan for water for any pets. Your veterinarian or humane society can provide guidelines for pet water needs.

### ***How do I prepare water for emergency use?***

There are two choices: the first is storing water, and the second is to have on hand the supplies necessary for treating water when needed. Both methods have advantages and disadvantages.

The primary advantage of storing water for emergency use is that it is ready to use when needed and the level of contaminants is generally known. The disadvantages are space for storage and the weight of stored water.

Storage of water would depend on the source:

- City water from municipal water sources is already treated so no additional treatment is necessary. Fill clean, food-grade containers with tap water and screw on lids
- Water from a well or spring that is known to be free of bacteria but is not chemically treated should be purified by either adding bleach or by boiling.

The primary advantage of treating water is space saving and the ability to ensure a longer supply of water for consumption. Disadvantages are the unknown treated water quality, not all treatment units are effective for all contaminants, the maintenance of the equipment, and the need of power for some water treatment systems.

Treatment of water would depend on the source of contamination, and whether the treatment unit is designed to remove the chemical or microbial organism of concern. Please refer to the Drinking Water Manual for proper use of point-of-use or point-of-entry treatment systems.

### ***What kind of container should I use for storing water?***

Store your water in thoroughly washed plastic, glass, fibreglass or enamel-lined metal containers. Never use a container that has held toxic substances. Plastic containers, such as soft drink bottles, are best. You can also purchase food-grade plastic buckets or drums.

A good water container is airtight, breakage resistant, and heavy enough to hold water. Good choices include 100-200 Litres (25-50 gallon) food grade plastic barrels, 20 Litres (five-gallon) plastic jugs or collapsible water carriers available through camping supply stores, and the two- or four-litre soda pop bottles. Glass bottles are acceptable, but have a higher chance of breakage during emergency or long-term storage. Remember that water weighs approximately 1 kg (10 Imperial pounds) per litre. Do not store more than 15 litres (5 gallons) of water (about 15 kg or 50 pounds) in a container that is meant to be portable. Milk containers are not recommended because they do not seal well. The only time milk jugs can be used is when stored in a chest freezer. In case of power outage, the frozen jug of water will help to protect food from thawing. The water from the milk jug should be used first because it is not properly sealed.

Store your water away from gasoline, kerosene, pesticides or similar substances. Polyethylene plastics can be permeated by hydrocarbon vapours.

Before storing your water, treat it with a preservative, such as chlorine bleach to prevent the growth of microorganisms. Use liquid bleach that contains 5.25% sodium hypochlorite and no soap. Add 4 drops of bleach per quart of water (for two-litre bottles) (or two scant teaspoons per 40 litres), and stir. Seal your water containers tightly, label them with the date of preparation, and store in a cool dark place, but prevent from freezing. Rotate water every six months.

Once a container is opened, use the water rather than re-storing it. The flat taste associated with stored water can be improved by pouring water from one container to another.

For commercially bottled water, keep the water in its original sealed container. Once opened, use it and do not store it further. Rotate the water at least every six months.

### ***What other emergency water sources are there?***

If a disaster catches you without a stored supply of clean water, you can use the water in your hot-water tank, pipes and ice cubes. As a last resort, you can use water in the reservoir tank of your toilet.

*Water pipes:* To use the water in your pipes, open the highest faucet in the house to let air into the pipes, and draw water from the lowest faucet in the house. Remember to turn off the water heater until more water is pumped in.

*Waterbeds:* Waterbeds hold up to 1,500 litres, but some waterbeds contain toxic chemicals that are not fully removed by many purifiers. If you designate a waterbed in your home as an emergency resource, drain it yearly and refill it with fresh water containing 60 mL (two ounces) of bleach per 450 litres (120 gallons).

*Hot Water Tanks:* To use the water in your hot-water tank, be sure the electricity or gas is off, and open the drain at the bottom of the tank. Start the water flowing by turning off the water intake valve and turning on a hot water faucet. Do not turn on the gas or electricity when the tank is empty. The water from the hot water tank may contain particles of iron and other minerals. You may remove this sediment by filtering the water through sterile cheese cloth, or a clean kitchen towel which was washed with liquid chlorine laundry bleach the last time it was laundered, or let the sediment settle to the bottom of a large container and dip relatively clear water from the top.

*Swimming Pool:* Water from a swimming pool should only be used for hygiene purposes. The pool water may contain high levels of chemicals that may be harmful if consumed in large concentration.

*Emergency outside water sources:* rainwater, ponds or rivers, untested wells and springs.

SOURCE:

Government of Canada, Office of Critical Infrastructure Protection and Emergency Preparedness, Mar 12, 2003: [www.ocipep.gc.ca/info\\_pro/checklist/bef\\_fdwtkit\\_e.asp](http://www.ocipep.gc.ca/info_pro/checklist/bef_fdwtkit_e.asp)

US Federal Emergency Management Agency: [www.fema.gov](http://www.fema.gov)

American Red Cross: [www.redcross.org](http://www.redcross.org)

Source: Technical Advisory Committee on Safe Drinking Water, Environmental Public Health Manual, 2007