

Presentation sponsored by the Third Walnut Creek Mutual (TWCM)
 Emergency Preparedness Committee
prepared by Harris R. Greenberg

FEMA Tips for Managing Water

The following web page explains the essentials of managing water:
<https://www.ready.gov/managing-water>

FEMA = Federal Emergency Management Agency

Presented at the Rossmoor Emergency Preparedness Fair, September 22, 2018

1

Basic Water Tips

- **Allow people to drink according to their needs.** Many people need even more than the average of one gallon per day. The individual amount needed depends on age, physical activity, physical condition and time of year.
- **Never ration drinking water unless ordered to do so by authorities.** Drink the amount you need today and try to find more for tomorrow. Under no circumstances should a person drink less than one quart (four cups) of water each day. You can minimize the amount of water your body needs by reducing activity and staying cool.
- **Drink water that you know is not contaminated first.** If necessary, suspicious water, such as cloudy water from regular faucets or water from streams or ponds, can be used after it has been treated. If water treatment is not possible, put off drinking suspicious water as long as possible, but do not become dehydrated.
- **Do not drink carbonated beverages instead of drinking water.** Carbonated beverages do not meet drinking-water requirements. Caffeinated drinks and alcohol dehydrate the body, which increases the need for drinking water.
- **Turn off the main water valves.** You will need to protect the water sources already in your home from contamination if you hear reports of broken water or sewage lines or if local officials advise you of a problem. To close the incoming water source, locate the incoming valve and turn it to the closed position. Be sure you and your family members know how to perform this important procedure.

Presented at the Rossmoor Emergency Preparedness Fair, September 22, 2018

2

Water Storage

- **Buy commercially bottled water** and store it in the sealed original container in cool, dark place.
- **If you must prepare your own containers of water**
 - Purchase food grade water storage containers.
 - Before filling with chlorinated water:
 - **Thoroughly clean the containers** with dishwashing soap.
 - **Sanitize the bottles** by cleaning with a solution of 1 teaspoon of non-scented liquid household chlorine bleach to a quart of water.
- **Water that has not been commercially bottled should be replaced every six months.**

Presented at the Rossmoor Emergency Preparedness Fair, September 22, 2018

3

Water Sources: Safe Sources

- **Melted ice cubes.**
- **Liquids from canned goods** - such as fruit or vegetables.
- **Water drained from pipes.** To use the water in your pipes, let air into the plumbing by turning on the faucet in your home at the highest level. A small amount of water will trickle out. Then obtain water from the lowest faucet in the home.
- **Water drained from the water heater.** To use 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 at the tank and turning on the hot-water faucet. After you are notified that clean water has been restored, you will need to refill the tank before turning the gas or electricity back on. If the gas is turned off, a professional will be needed to turn it back on.

Presented at the Rossmoor Emergency Preparedness Fair, September 22, 2018

4

Water Sources: Unsafe Sources

- **Radiators** (in a home heating systems).
- **Water from the toilet bowl or flush tank.**
- **Water beds.** Fungicides added to the water or chemicals in the vinyl may make water unsafe to use.
- **Swimming pools and spas.** Chemicals used to kill germs are too concentrated for safe drinking but can be used for personal hygiene, cleaning and related uses.

Presented at the Rossmoor Emergency Preparedness Fair, September 22, 2018

5

Cautions about Using Contaminated Water

- **Treat all water of uncertain quality before using it for**
 - drinking,
 - food washing or preparation,
 - washing dishes,
 - brushing teeth or
 - making ice.
- In addition to having a bad odor and taste, **contaminated water can contain microorganisms (germs)** that cause diseases such as
 - dysentery,
 - cholera,
 - typhoid and
 - hepatitis.

Presented at the Rossmoor Emergency Preparedness Fair, September 22, 2018

6

Water Treatment Methods

Methods	Kills Microbes	Removes other contaminants (heavy metals, salts, and most other chemicals)
Boiling	Yes	No
Chlorination	Yes	No
Distillation	Yes	Yes

Presented at the Rossmoor Emergency Preparedness Fair, September 22, 2018

7

Water Treatment: Boiling

- **Boiling is the safest method of treating water.**
 - In a large pot or kettle, bring water to a rolling boil for one full minute
 - Keep in mind that some water will evaporate.
 - Let the water cool before drinking.
- **Boiled water will taste better if you put oxygen back into it**
 - Pour the water back and forth between two clean containers.
 - This also will improve the taste of stored water.

Presented at the Rossmoor Emergency Preparedness Fair, September 22, 2018

8

Water Treatment: Chlorination

- **Use only regular household liquid bleach** that contains 5.25 to 6.0 percent sodium hypochlorite.
- **Do not use scented bleaches, color safe bleaches or bleaches with added cleaners.**
- Because the potency of bleach diminishes with time, **use bleach from a newly opened or unopened bottle.**
- **Add 16 drops (1 teaspoon = 76 drops) of bleach per gallon of water, stir and let stand for 30 minutes.**
 - The water should have a slight bleach odor. If it doesn't, then repeat the dosage and let stand another 15 minutes.
 - If it still does not smell of chlorine, discard it and find another source of water.
- **Other chemicals**, such as iodine or water treatment products sold in camping or surplus stores **that do not contain 5.25 or 6.0 percent sodium hypochlorite as the only active ingredient**, are not recommended and should not be used.

Presented at the Rossmoor Emergency Preparedness Fair, September 22, 2018

9

Water Treatment: Distillation

Distillation will kill microbes that resist boiling or chlorination, and distillation also removes heavy metals, salts and most other chemicals.

Distillation involves boiling water and then collection of only the vapor that condenses. The condensed vapor will not include salt or most other impurities.

- **To distill, fill a pot halfway with water.**
- **Tie a cup to the handle on the pot's lid so that the cup will hang right-side-up when the lid is upside-down** (make sure the cup is not dangling into the water).
- **Boil the water for 20 minutes.**
- **The water that drips from the lid into the cup is distilled.**

Presented at the Rossmoor Emergency Preparedness Fair, September 22, 2018

10

Where is the connection on your water heater that lets you get safe drinking water out of it in an emergency?

PG&E recently sent out new safety stickers to attach to your water heaters that show emergency numbers to call, and also show where the various lines and connections are located. A copy of one of these is shown below:



- On the left side of the sticker the letter F on the diagram is described as the “Tank flush” connection.
- Instruction number 3 to the right of the hot water tank image talks about attaching a water hose to drain the water, and has an arrow pointing to the connection with the letter F label.

If your water heater uses gas, and you smell gas, the diagram on the far right of the sticker also shows you where the gas shutoff valve is located by your gas meter, and tells you how much to turn the shutoff valve. 11

Presented at the Rossmoor Emergency Preparedness Fair, September 22, 2018

Steps for Getting Water from Your Water Heater

- 1. Turn off the electricity or gas (#2 on the diagram) to the water heater.**
 - Turn off the circuit breaker for electric water heaters or close the gas valve for natural gas and propane types. If the power or gas is still on when the tank is empty, your tank will almost certainly sustain significant damage.
- 2. Preserve the cleanliness of the water in the tank by closing the supply valve to the tank (#1 on the diagram).**
 - When water service is restored, the water department will be pumping water that could be contaminated. This will be fine to use for flushing toilets and for cooking, but not for drinking.
- 3. Find the valve at the bottom of the tank for draining (#3 on the diagram).**
 - This is where your clean drinking water will come from. Many water heater valves have a connector for hooking up a garden hose to the drain valve.
- 4. Turn on the hot water from any tap in the house. In order for water to be drained from the tank, you must allow air to get into it.**
 - This is easy to do by opening any hot water tap in the building such as the kitchen or bathroom sink.
- 5. Remove any sediment that has collected at the bottom of the water heater.**
 - Water heaters are notorious for trapping sediments. The heavier-than-water sediment sinks and collects at the bottom of the tank because hot water is drawn from the top of the tank, rather than the bottom.

Presented at the Rossmoor Emergency Preparedness Fair, September 22, 2018

12