# Protect drinking water

Contaminants have many opportunities to reach our drinking water. The geology of an area, soil conditions, precipitation, condition of our wells and plumbing, and the characteristics and occurrence of the substances themselves are all factors that determine whether a substance reaches our water supply.

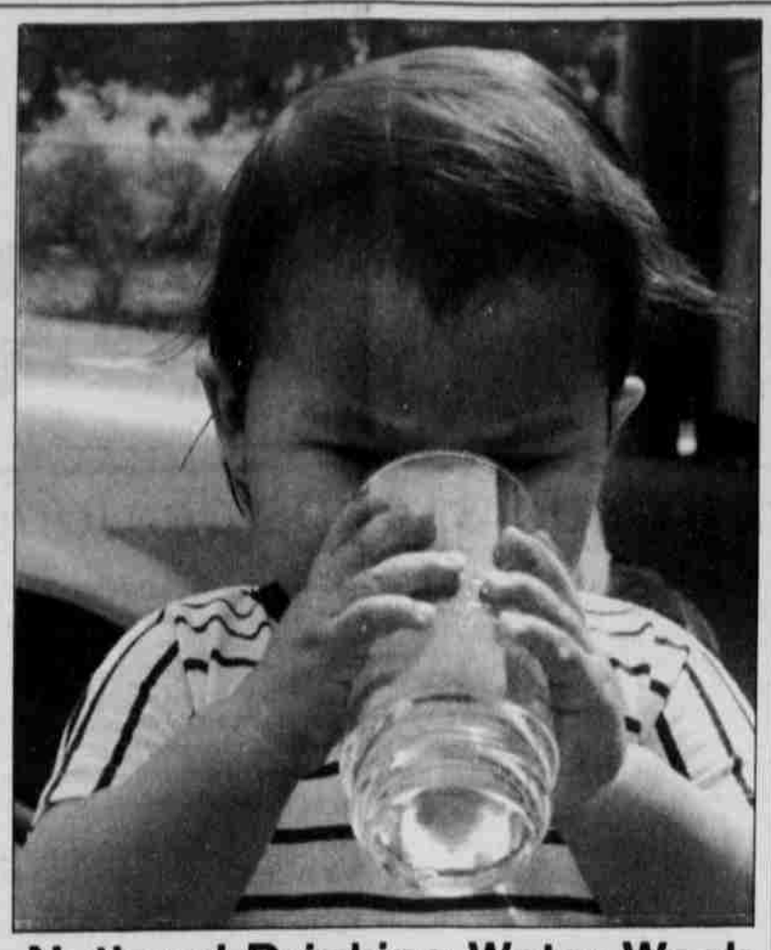
No single group of individuals is responsible for what is happening to our water supplies. Homeowners and renters, as well as farmers, city dwellers and industries generate wastes that can eventually make their way to our drinking water sources.

There are many specific things we can do to prevent contamination. First, we must realize that water is a shared resource, used simultaneously by many individuals, municipalities and businesses. Second, we must understand that each of us contributes to the pollution threat. Finally, we must make a conscientious decision to change the way we conduct our daily activities.

Key steps we can take to protect our water include:

- Using the disposing of household, shop, lawn and garden, and auto care products according to label directions.
- Using agricultural chemicals according to recommendations, and using integrated pest management practices where appropriate.
- Protecting the area around wells to ensure that contamination cannot occur.
- Taking inventory of contents of underground storage tanks regularly to detect for possible leaks.
- Managing domestic septic tanks and disposal fields to prolong their life and maximize their ability to remove pollutants.
- Conserving water at home and at work.
- Supporting legislation that encourages the use of state-of-the-art solid waste management and waste water treatment.
- Recycling glass, newspapers, aluminum, and plastic at home as much as possible.

Protecting our water resources will require everyone's effort. We must protect this resource to assure an adequate and safe supply of water for future use. Our children and grandchildren are depending on it.



**National Drinking Water Week**
**May 5 to May 11, 1991**
**All living things depend on water.**
**Protect it.**

# Proclamation

**Whereas,** All living things depend on water. As a nation, we have been blessed with abundant quantities of fresh water to quench our thirst. Because it is so easy to turn on the tap and obtain gallons of fresh drinking water every day, many of us often take this great blessing for granted. However, behind each gallon, behind each drop, are the combined efforts of scientists, engineers, water plant operators and Tribal Officials. These individuals are responsible for keeping our precious drinking water available, affordable and, above all, safe. People who depend on private wells for their water must assume the responsibility for its safety.

**Whereas,** The Warm Springs Water Management Plan (Water Code) adopted in 1967, provides a framework for preserving and improving our drinking water.

**Whereas,** In the coming years, the Water Treatment Plant will require changes in design and operation in order to meet the growing demand. These changes will strengthen the safeguards protecting the drinking water of Warm Springs.

**Whereas,** Our Tribes must continue to identify and respond to the hazards that threaten their water supply. Protecting our drinking water at its source will require an on-going effort on the part of specialists, tribal leaders and members alike.

**Therefore, The period from May 5 to May 11, 1991 is designated as "National Drinking Water Week."** We the Tribal Council of the Confederated Tribes of the Warm Springs Indian Reservation call upon the people of Warm Springs to observe this period with appropriate ceremonies, activities and programs designed to enhance public awareness of drinking water issues and public recognition of the difference that drinking water makes to the health, safety and quality of life that we enjoy.

# Safe disposal protects water

**How to store pesticides and household chemicals safely**

- Avoid purchasing excess quantities of hazardous products to minimize storage problems.
- Always close the container immediately after use. Double-check the closure before storing for later use.
- Consider trading or giving away leftover products to someone who could use them.
- Store pesticide containers in plastic bags, then place in cardboard cartons. Do not store a variety of products in the same plastic bag.
- Make sure that products are adequately labeled and dated before storing.
- Store household, yard and garden chemicals out of reach of children, pets and wildlife.
- Store containers in a safe, dry and secure location with moderate temperatures. Some products should not freeze and some should not be stored at high temperature.
- Read and follow manufacturer's directions on labels carefully.

**How to dispose of pesticides and household chemicals safely**

- Try to use up or give away leftover products rather than discard them in the trash.
- Follow the manufacturer's directions on the label for safely disposing of any pesticide or household chemical.
- Never pour chemicals together before disposing of them. Dangerous chemical reactions may occur.
- Do not pour leftover supplies down the drain unless that is recommended on the label as a safe means of disposal.
- Do not pour concentrated chemicals or pesticides on the ground. Groundwater and wells may become contaminated.
- Do not attempt to burn hazardous chemicals as a means of disposal.
- Plan temporary storage of hazardous materials until they can be transported to an established hazardous waste collection center.

Some products can and should be recycled rather than discarded. Small amounts of clean gasoline can be added to the gas tank of a car or truck. Used oil and old batteries should be donated for recycling.

If recommendations for disposal of any hazardous product are not available, consult the local pollution control agency or your county Extension office for regulations on hazardous waste disposal in your county or state.

Preventing environmental contamination is always better and more cost effective than clean-up efforts.

**How to use pesticides and household chemicals safely**

- Select and use the least toxic product that will do the job. Consider alternatives to pesticides for controlling pests whenever possible.
- Read and follow the manufacturer's directions on the specific product you are using. Measure and mix pesticides properly.
- Avoid using more pesticide than the recommended amount or using it in ways other than those the label recommends.
- Test and calibrate equipment before applying chemicals.
- Wear protective clothing when preparing and applying pesticides.
- Pesticide labels provide information about first aid procedures in case an accident occurs. Know the procedure to use should an accident occur that causes a hazardous condition for the user or the water supply.
- Never combine chemical products unless it is recommended by the manufacturer. This is true for household cleaning products and pesticides for the home, lawn, garden, or crop and livestock production.
- Triple-rinse empty pesticide containers and add the rinsate to the pesticide mix.
- Always wash thoroughly after working with pesticides.

Additional precautions are necessary for the large use/applicator of pesticides. Obtain training and follow instructions provided in the state pesticide applicator certification program.

# Test water for contaminants

Do you know the quality of the water you drink?

Where does your water come from?

How is your water supply protected from contaminants?

The Warm Springs Water Code provides a framework for preserving and improving Tribal water supplies. The quality of that water is regulated by the Tribes.

But for those of us who get our drinking water from a private source such as a well, it is our responsibility as homeowners to monitor the quality of that water. Testing for possible contaminants on a regular schedule is the only way to be sure your water supply is safe.

If you have an old or shallow well, it is especially important to test your water regularly. Older methods of well construction, and the well's location in relation to septic or livestock facilities on many homes bases, make older or shallow wells more susceptible to contaminants.

Contact the OSU Extension Service or the natural resources department for information on how to take a water sample.

# *Water testing identifies problems*

Water is never just pure hydrogen and oxygen ($H_2O$), because water dissolves minerals and organic compounds as it moves through the air and soil. Unacceptable materials, including bacteria from animal and human waste, synthetic chemicals such as gasoline and industrial solvents, or naturally occuring nitrate and salt, may find their way into water.

Here are the possible drinking water contaminants you should be concerned about:

BACTERIA—One of the most common drinking water safety tests involves testing for coliforms. presence of coliform bacteria may indicate an unsanitary condition and possible presence of disease-causing agents.

NITRATES—Sources of nitrates include septic systems, livestock wastes and nitrogen fertilizer used on farm fields and lawns. High levels of nitrate in water can cause infant cyanosis ("blue baby disease") in children younger than one year old. Nitrates do not appear to have significant health effects on older children or adults.

METALS—Lead is the metal of most concern. Excessive amounts of lead in our drinking water source can lead to damage of the brain, kidneys, nervous system and red blood cells. Other metals of concern include mercury, zinc, copper, arsenic, barium, cadmium, and chromium.

SULFATES and SALTS—High concentrations of sulfates and other dissolved salts can cause gastrointestinal problems in people and animals. Sulfates and salts may also be of concern to those on a sodium-restricted diet.

CHEMICALS—Pesticides, solvents and some substances in petroleum products have been identified as harmful contaminants detected in a sampling of drinking water sources.

MINERALS—Calcium and magnesium are the common minerals that contribute to water hardness. Water that contains large amounts of minerals may not affect personal health, but may make it less desirable for household use. Some minerals also stain laundry and water fixtures.

The Warm Springs Water Code sets concentration level limits for many of the contaminants found in drinking water. While these limits are set for public drinking water supplies only, they can also serve as a guide for private water systems.

The best way to determine the quality of your drinking water is to have it tested. Most water appears clean and problem-free at the tap, but it may not be as safe or acceptable for household activities as you would like. Annual testing by your local health department or by an independent laboratory will indicate possible problems.

# *Water needed for good health*

Water is one of our nation's most valuable resources. It sustains our bodies; it is essential for the production of food and fiber, for industrial processes, for recreational purposes, navigation, fish, wildlife and environmental aesthetics. Therefore, it is essential that we protect and preserve this valuable resource.

National Drinking Water Week was established to enhance recognition of the difference that drinking water makes to the health, safety and quality of life we enjoy. It brings together members of the public and private sectors in a national information and educational effort to create an awareness of the need to become better stewards of this resource.

There is much we can do to protect and improve the quality and safety of drinking water, particularly in rural areas. Determining the quality of water coming from private wells is the responsibility of the consumer. People must learn more about the nature of the water resource: how people interact with the resource; how contamination may occur; why water testing is important and how to have it done; and the importance of protecting or enhancing water quality.

Protecting our water supply is critical since we know that our supply of good drinking water is neither endless or free. The challenge is crystal clear—we must work now to insure that our drinking water remains safe and available to all.

# Drinking water trivia quiz

1. How much water does the average American use each day?
2. How much water does the average Tribal member use each day?
3. Of all the earth's water, how much is found in the ocean or sea?
4. How much of the world's water is frozen, and therefore, unusable?
5. How much of the earth's water is suitable for drinking water?
6. Is it possible for a person today to drink water that was part of the dinosaur era?
7. How many households in the United States use private wells for their water supply?
8. How much water do you need each day to maintain health?
9. How much of the human body is water?
10. How much of a tomato is water?
11. When it rains one inch, how many gallons of water fall per acre?
12. How much water is used to brush your teeth?
13. How much water is used to flush a toilet?
14. On the average, how much water is used to hand wash dishes?
15. How much water does the average residence use during a year?
16. How uch water does it take to process a quarter pound of hamburger?
17. How much water does it take to refine one barrel of crude oil?
18. How much water does it take to process one chicken?
19. How much water does it take to process one ton of sugar to make processed sugar?
20. What is the only substance found naturally on earth in three forms?
21. How much does one gallon of water weigh?
22. How much does the average American household pay for drinking water each month?
23. How much does the Tribe spend each year to provide safe drinking water?

## Answers

1. 90 gallons
2. 325 gallons
3. 97 percent
4. 2 percent
5. 1 percent
6. Yes
7. 17 million households
8. About 2 quarts
9. About 60 percent
10. 95 percent
11. 27,000 gallons per acre?
12. 2 to 7 gallons
13. 2 to 7 gallons
14. 20 gallons
15. 107,000 gallons
16. Approximately 1 gallon
17. 28,100 gallons
18. 1,851 gallons
19. 11.6 gallons
20. Water
21. 8.34 pounds
22. Approximately $40.00
23. Approximately $200,000

# Water—the essential ingredient

Water is the most important element in life. Some organisms can live without air, but no form of life has ever been found that can survive without water. From the world's earliest known history, people have always lived near rivers and lakes, where they had access to fresh water.

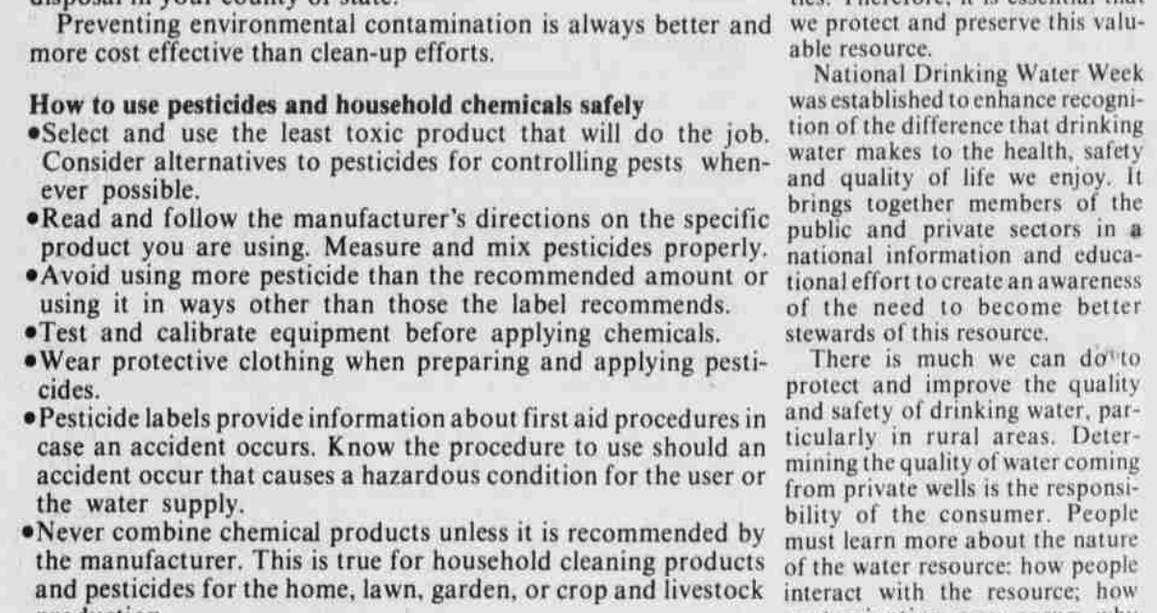
Nearly 60 percent of our body weight consists of water. Considering that adult bodies are nearly two-thirds water, this means that for a 150-pound person, 90 pounds, or 45 quarts, is water. We need to replace about 3 or 4 percent of ourselves each day. A loss of 1 percent of our necessary water level results in thirst, and possibly pain. A loss of 5 percent can lead to hallucinations, while 10 percent loss in children — 15 percent in adults — will lead to death.

Water plays many essential roles in the body:

- It carries nutrients and oxygen to all parts of the body through blood and lymph.
- It helps regulate body temperature by allowing heat to escape through perspiration.
- It acts as a lubricant around joints and as a shock absorber inside the eyes and in the spinal cord.
- It maintains physical work performance. Just a 4 to 5 percent decrease in body water will result in a 20 to 30 percent decline in efficiency.
- It helps food to be digested and converted to energy.

Besides water from the tap, all the beverages we drink contain water: coffee, tea, milk, soft drinks, and juices. Other water sources include soups and gelatins. Solid foods contain various amounts of water. Tomatoes are 95 percent water, and potatoes are 80 percent water. Meats are between 50 and 70 percent water, while bread is approximately 35 percent water.

The quality and quantity of this essential nutrient can affect our lives many times every day. From our morning cup of coffee to washing our hands; from making soup for dinner to doing the laundry, we depend on water. Most of us take our water for granted, but we shouldn't—water is too important to our existence to not be protected



*Warm Springs Water Treatment Plant purifies domestic water. Private systems need the same testing and purification for protection of water users.*