



*“Tip sheets helped us learn about our well water.”*

**Get Tip Sheets** at [www.riwelltesting.org](http://www.riwelltesting.org):

- 14 Tip Sheets about harmful substances
- 10 Tip Sheets about treatment choices
- 3 Tip Sheets about other topics of concern

**Well water** is groundwater, meaning that it comes from the water stored in the earth and rocks below ground. Even though groundwater is *under* the surface, substances *on* the surface, such as gas from a lawnmower or animal waste, can seep down and pollute it. Some natural substances stored in rocks and soil can also affect the smell, taste, color, and safety of well water.

## Man-made Chemicals in Drinking Water Wells

**Man-made chemicals** are part of everyday life – used in hundreds of products and processes – and sometimes pollute well water

### **Two major categories of man-made chemicals:**

1. Products such as pesticides called **Synthetic Organic Chemicals (SOCs)**
2. Items such as gasoline and solvents called **Volatile Organic Chemicals (VOCs)**

The 2 categories are important in testing and treating well water.

In some parts of Rhode Island, groundwater pollution from man-made chemicals is being cleaned up. To learn about areas known to have polluted groundwater, contact the Rhode Island Department of Health.

### **How will I know if I have high levels of man-made chemicals in my well water?**

You won't know unless you have your water tested. Man-made chemicals often have no smell or taste. And, your water may look the same as usual.

### **Be sure to test if there has been a chemical spill or you live in an area where pesticides are used nearby.**

Every 5-10 years, have your water tested for VOCs (**Volatile Organic Chemicals**). The lab will test for over 26 different VOCs in your well water, including MtBE, the gasoline additive now banned in Rhode Island. VOCs can remain in soil or groundwater for many years.

If you live in an area of known pesticide use or you suspect a problem, the lab can also do **Synthetic Organic Chemicals (SOC)** testing.

**Use a State-certified lab to test your water.** Find a list here: [www.health.ri.gov/find/labs/drinkingwater](http://www.health.ri.gov/find/labs/drinkingwater).

**Compare the numbers and letters** on your lab test results with the standards (limits) set by the United States Environmental Protection Agency at: [water.epa.gov/drink/contaminants/index.cfm](http://water.epa.gov/drink/contaminants/index.cfm).



---

## What health problems can man-made chemicals cause?

Health problems caused by coming into contact with chemicals vary, depending on:

- The chemical
- How much is in the water (or air) and for how long
- How likely someone is to be affected, based partly on their genes and overall health

Find a complete list of man-made chemicals and the Maximum Contaminant Levels (health limits) as set by the United States Environmental Protection Agency (EPA) here:  
[water.epa.gov/drink/contaminants/index.cfm](https://www.water.epa.gov/drink/contaminants/index.cfm).

## How do man-made chemicals get into well water?

- **Activities near a well.** Examples of activities that can cause trouble:
  - ▶ Using fertilizer or pesticides
  - ▶ Dumping motor oil
  - ▶ Filling or parking gas-powered engines
  - ▶ Storing fuel or pesticides
  - ▶ Pouring paint thinner down the drain and having it leach out of the septic system

**Remember:** Use, store, and dispose of household chemicals properly to keep your well water safe to drink.

- **Improper well location or construction.**
  - ▶ Locate a well away and up-hill from pollution.
  - ▶ Keep the area around your well clean and free from runoff.
  - ▶ Keep your well casing and cover in good repair.
- **Seal abandoned wells properly.** Work with a registered well driller to properly seal abandoned wells. They are a direct pathway to the groundwater and possible sources of pollution.

## What can I do about man-made chemicals in my well water?

**Four possible solutions if your well water tests high for man-made chemicals:**

1. **Get expert advice.** Call us.
2. **Use another source** for your drinking water, such as drilling a new well or drinking and cooking with bottled water.
3. **Connect to a public water supply** if available.
4. **Use a home treatment method.** Methods that remove chemicals include:
  - ▶ Activated carbon—Tip Sheet 17
  - ▶ Distillation—Tip Sheet 20
  - ▶ Reverse osmosis—Tip Sheet 24

**Important:** Before you install a treatment system, call us for expert advice. *Before* you buy a system, ask how it will be installed and whether this costs extra. Get at least 3 price quotes. Learn the questions to ask. See Tip Sheet 16. *After* you buy a system, be sure to:

1. Keep all the paperwork and directions.
2. Learn what you must do to maintain the system and do it.

## Learn more

Get Tip Sheets about choosing and buying water treatment systems at [www.rivelltesting.org](http://www.rivelltesting.org).