

# Is your well water, well?



## ODOR & STAINING

**Q: WHY DO I GET RED STAINING ON MY PLUMBING FIXTURES AND CLOTHES?**

**Q: WHY DOES MY WELL WATER SMELL LIKE EGGS?**

**Q: WHAT CAN I DO ABOUT IRON STAINING AND ODORS?**

### Hydrogen sulfide and sulfur bacteria in your water.

Hydrogen sulfide gas (H<sub>2</sub>S) can occur in wells anywhere in Florida. It gives the water a characteristic “rotten egg” smell and can cause odor in clothes.

**Q: WHAT ARE THE SOURCES OF HYDROGEN SULFIDE?**

**A: Hydrogen sulfide gas** can come from a number of different sources. It can occur naturally in groundwater. Certain “sulfur bacteria” in the groundwater, in the well water itself, or in the plumbing system can create this gas that smells bad. Chemical reactions inside water heaters can also produce sulfur bacteria. In rare cases, pollution can cause the gas to form.

### Effects on health

**Sulfur bacteria are not harmful.** In most cases the rotten egg smell does not relate to how clean the water is in a well. However, in order to make sure well water is safe to drink, it is good to have your well water tested for total coliform bacteria or *E. coli* on a regular basis. These bacteria may cause gastrointestinal illness, like diarrhea, stomach cramps, or more serious medical conditions.

**Iron bacteria are not known to cause disease.** They can cause unwanted stains, tastes and odors. They can also affect the amount of water the well will produce. They may create conditions where other disease-causing bacteria may grow in your well water.

[WWW.FLHEALTH.GOV/WELLSTEST](http://WWW.FLHEALTH.GOV/WELLSTEST)



**CONTACT WATER PROGRAMS FOR MORE INFORMATION**

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### **HYDROGEN SULFIDE AND SULFUR BACTERIA**

**People can smell hydrogen sulfide gas in water at a very low level.** It smells like rotten eggs. You can check the smell of water coming out of the hot and cold water faucets. Decide which faucets have the odor. Often, the smell is more noticeable from a hot water faucet since the heat causes the gas to vaporize.

- If the smell is only from the hot water faucet, the problem likely is in the water heater.
- If the smell is coming from both the hot and cold faucets, but only from the water treated by a water softener and not in the untreated water, the problem likely is sulfur bacteria in the water softener.
- If the smell is strong when the water in both the hot and cold faucets is first turned on, and becomes weaker or goes away after the water has run for a while, or if the smell varies over time, the problem likely is sulfur bacteria in the well or plumbing system.
- If the smell is strong when you first turn on the water in both the hot and cold faucets and is more or less constant and persists with use, the problem likely is hydrogen sulfide in the groundwater that supplies the well.

### **RED STAINING FROM YOUR WELL WATER**

**You may have iron bacteria in your well water if any of the following exist:**

- Red stains in the sinks
- Swampy, oily or other unpleasant tastes or smells in the water, or
- Red, slimy growth in the toilet tank.

If any (or all) of these are true, your well or water system may have iron bacteria. This type of bacteria naturally occurs in soil, shallow groundwater and surface waters. These nuisance bacteria combine iron (or manganese) and oxygen to form deposits of rust, bacterial cells, and a slimy material. The material sticks the bacteria to well pipes, pumps, and plumbing fixtures. The bacteria do not commonly cause disease, but can cause unwanted stains, tastes and odors. These bacteria may affect the amount of water your well produces because of the clogging from the slimy material they produce. Iron bacteria may also create conditions where disease-causing bacteria may grow.

### **Detecting iron bacteria**

**Clues which likely mean that iron bacteria may be present in well water are:**

**TASTES AND ODORS:** Iron bacteria often make the water taste and smell bad. Such smells are commonly reported as: “swampy,” “oily or petroleum,” “cucumber,” “sewage,” “rotten vegetation” or “musty.” You may notice the taste or odor is stronger when you have not used the water for some time.

**COLOR:** As a rule, iron bacteria will cause yellow, orange, red or brown stains and colored water.

Keep your well water,  well.



**RED SLIMY DEPOSITS:** Iron bacteria make a sticky slime that is commonly rusty in color. It can also be yellow, brown or grey. A “feathery” growth may also be seen, often in standing water such as a toilet tank.

Some traits of iron bacteria such as offensive stains, tastes or odors may be due to other causes. These types of causes include sulfate, hydrogen sulfide, manganese, the corrosion of pipes, or other organisms such as sulfur bacteria.

## Iron bacteria in well water

**Physical removal and chemical treatment methods can successfully remove or reduce iron bacteria in well water. However, high levels of iron bacteria may be tricky and costly to treat. These treatments may only partly succeed.**

■As a first step, it is normal to try to physically remove iron bacteria from a well that has heavy growth. To do so, the well’s pumping equipment must be removed and cleaned. This is usually a job for a certified water well contractor or pump installer. They can then scrub the well casing with brushes or other tools. After that, the well will likely need chemical treatment.

■Chemical treatment is the most common way to treat iron bacteria in a well. The three most common groups of chemicals used include: surfactants, acids (and bases), and oxidizing agents such as disinfectants and biocides.

■Of those types of chemicals, disinfectants are used the most often for treatment of iron bacteria. The most common disinfectant used is household laundry bleach with chlorine.

■Other treatment options include aeration, oxidation, and adsorption.

■Aeration involves the blowing of large volumes of clean air through the water. The resulting bubbles carry the volatilized taste/odor compounds and vent them outside the home.

■In the method of oxidation, an oxidizing chemical is added to the water where it reacts with, and chemically destroys, the odor compounds. A variation of this method uses a Venturi nozzle to add small amounts of air to the water where the oxygen reacts with the contaminants and the remaining air is removed through a valve.

■During the process of adsorption, raw water is passed through activated carbon in the form of grains or a pressed filter. The odor components are captured by the carbon particles as the water passes through.

**The Florida Department of Health recommends you test your private well water at least once a year, or more often if something changes like the taste, odor, or color, and after disinfection.**

To find a well contractor, access the Florida Department of Environmental Protection’s website use Internet Explorer: <http://waterwebprod.dep.state.fl.us/wwcvc/>

You can look up approved water testing labs or contact your county health department here: <http://appprod.dep.state.fl.us/labs/cgi-bin/aams/index.asp>

[www.floridahealth.gov/programs-and-services/county-health-departments/find-a-county-health-department/index.html](http://www.floridahealth.gov/programs-and-services/county-health-departments/find-a-county-health-department/index.html)

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