

## WHAT SHOULD I DO?

First and foremost, you should be educated and aware of possible contaminants. Reading this brochure is a start. Secondly, assess your level of risk by looking at your well. Is it in good repair? Are there cracks in the surface slab or casing? Does the well have a good seal at the surface? Can rodents get into the well casing? Make sure the surface near the well is mounded so that water runoff flows away from the well.

Finally, pay to have a drinking water analysis performed for your water sample. There are water labs in the area that may competently run a basic screening test for the pertinent contaminants of concern. It may not be necessary to do this every year. Once every 5-10 years may be frequent enough, unless you notice a particular change in the taste or smell of your water. Also, be sure to contact the District office if there are any questions.

## 2019 Domestic Water Quality Results

During the summer of 2019, 31 domestic wells were sampled. The samples were tested for drinking water contaminants. As expected, some of the samples had elevated levels of contaminants. Specifically, 65% had elevated arsenic, 68% had elevated fluoride, and 16% showed high nitrate.

## HOW DO I TREAT MY WATER?

Depending on the contaminant, there are several means of treating your water. Perhaps the most widely used system is that of reverse osmosis (RO). Typically, those units are also equipped with activated charcoal filters and sand filters. Furthermore, RO is generally quite effective for reducing contaminants to an acceptable level. Other means of treatment include distillation or anion exchange.

For disinfection and the treatment of coliform bacteria, most homeowners treat their wells by shock chlorination using household bleach. If the problem of coliform bacteria continues after a shock chlorination treatment, a continuous disinfection system may be necessary.

Hard water may be treated using a softener. These devices use ion exchange technology so that the carbonates are bonded to the softening salt, thus reducing the troublesome scale and deposits caused by hardness.

## WATER QUALITY ON THE WEB

- [www.epa.gov/safewater/](http://www.epa.gov/safewater/)
- [www.tceq.state.tx.us/nav/util\\_water](http://www.tceq.state.tx.us/nav/util_water)

**WATER CONSERVATION—Making the most efficient use of our precious water resources.**

# *What's In Your Drinking Water?*



## **South Plains Underground Water Conservation District**

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## **WHAT'S IN YOUR DRINKING WATER?**

If you use a private well as your drinking water source, chances are you have wondered about the safety or quality of the water. Fortunately, the occurrences of water-related illness and disease are very rare for this area. However, this does not mean that well owners should always take for granted the safety of underground water. Rather, it is important that well owners stay informed of possible contaminants, and adopt a well maintenance program. The District can offer assistance with both of these.

The good news is that, unless your well is near a known contamination site (i.e. chemical/oil spill, leaking petroleum storage tank) your water supply is probably all right. The District's 2019 screening study for chemical and insecticide contaminants suggest no such contamination at the sampled sights. However, there are some contaminants known to exist at elevated levels within the District. A brief discussion of these is included below.

### **ARSENIC**

Elevated levels of arsenic are known to occur naturally in this area. Recent studies confirm the source of elevated arsenic as most likely the natural weathering of rocks. Long term exposure to high levels of arsenic is linked to certain types of cancer.



### **FLUORIDE**

High levels of fluoride are commonly found in this portion of the aquifer. The elevated concentrations are a natural occurrence. Discoloration of teeth and/or bone disease may result from elevated fluoride.

### **NITRATE**

Where nitrate is high, it is almost certainly a result of human activities. Fertilizers, sewage and animal wastes are all common sources of nitrate. Shallow depths to groundwater may increase the risk of nitrate leaching to the water table. High nitrate is extremely dangerous to infants 6 months and younger, since it may cause methemoglobinemia (blue baby syndrome).

### **CHLORIDE**

A number of wells may also have high levels of chloride. This often results in a salty taste, and may also corrode pipes and plumbing fixtures. Chloride is not considered a hazard to human health.

### **SULFATE**

Sulfate is found in natural mineral deposits and salts, as well as industrial waste and sewage. Elevated sulfate may cause a bitter, medicinal taste and cause a rotten egg odor. It may also cause laxative effects, although it is not classified as a hazard to human health.

### **TOTAL DISSOLVED SOLIDS (TDS)**

High dissolved mineral content is common to water wells in this area. It is often a result of naturally occurring minerals like carbonates, sulfates and others. High TDS may cause hardness, scaly deposits, staining of fixtures, and a salty taste. Hard water requires more soap for lathering during a bath, and more soap for washing dishes and clothes. High TDS is not considered a hazard to human health.

### **COLIFORM BACTERIA**

In general, coliform bacteria are not harmful to humans. However, their presence may indicate contamination of a water supply with human or animal waste and disease causing organisms. Consequently, your risk of waterborne illness is greater if coliform bacteria are found in your drinking water. Coliforms are rarely found more than a few feet below ground. If coliforms are present in your well, it warns of possible defects that allow contaminants to seep directly into the well. Each year, the District confirms the presence of coliform bacteria in several wells submitted for testing.