

## **IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER FAIRBANK WATER SUPPLY Has Levels of Radium, Combined (226, 228) Above Drinking Water Standards**

Our water system recently violated a drinking water standard. Although this is not an emergency, as our customers, you have a right to know what happened, what you should do, and what we are doing to correct this situation.

We routinely monitor for the presence of drinking water contaminants. Testing results we received on February 26, 2016 show that our system exceeds the standard, or maximum contaminant level (MCL), for Radium, Combined (226, 228). The standard for Radium, Combined (226, 228) is 5 PCI/L. The average level of Radium, Combined (226, 228) over the last year was 5.8 PCI/L.

### **What should I do?**

- **You do not need to use an alternative (e.g., bottled) water supply.** However, if you have specific health concerns, consult your doctor.

### **What does this mean?**

**This is not an immediate risk.** If it had been, you would have been notified immediately. However, some people who drink water containing Radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.

### **What happened? What is being done?**

We have and will continue to monitor these levels. We have been in contact with the D.N.R. and the City Engineering firm to find the correct action to reduce the levels to an acceptable level.

For more information, please contact, Dave Ryan (319-635-2869) at Fairbank City Hall, 116 East Main St. Fairbank Iowa 50629. The Mayor & Council are aware of this and have been working together to provide the most effective and efficient solution for the community. We anticipate resolving the problem within the next year.

This notice is being sent to you by FAIRBANK WATER SUPPLY PWSID#:1025031 Date distributed:  
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## **What is Radium?**

Radium (Ra) is a naturally occurring radioactive element that is present in varying amounts in rocks and soil within the earth's crust. Small amounts of radium also can be found in groundwater supplies. Radium can be present in several forms, called isotopes. The most common isotopes in Iowa groundwater are Ra-226 and Ra-228. The main type of radiation emitted by radium is the alpha particle.

## **Is Radium In My Water?**

Surface water is usually low in radium but groundwater can contain high levels of radium depending on local geology. Deep bedrock aquifers used for drinking water sometimes contain levels of Ra-226 and Ra-228 that exceed health-based regulatory standards.

Most of the private wells in Iowa draw their well water from aquifers that are much shallower than those used by public water supplies. Most shallow aquifers do not contain higher levels of radium. However, radium has been found in some private and public wells. Radium cannot be seen, tasted, or smelled in your drinking water. Unless your private water supply has been tested for radium, you should not assume your water is radium-free. All public water supplies are tested regularly for radium.

## **Is Radium In Water Harmful To My Health?**

Radium in water may pose a hazard to human health when the water is used for drinking or cooking. Only a small portion of ingested radium is absorbed from the digestive tract and distributed throughout the body. The rest is passed unchanged from the body. Some absorbed radium is excreted in urine. Absorbed radium behaves similarly to calcium and is deposited in the tissues of the body, especially bone. Any radiation received externally through showering, washing, or other uses is not a hazard since alpha particles do not travel through your skin.

Internally deposited radium emits alpha particles that may then damage surrounding tissue. Studies of workers exposed to high levels of radium and other sources of alpha radiation for extended periods show that high levels of radium may cause depression of the immune system, anemia, cataracts, and fractured teeth. Exposure to high levels of radium also has shown an increased incidence of bone, liver and breast cancer.

## **Can Radium Be Removed From Water?**

A number of treatment methods are available to remove radium from water. Ion exchange, lime softening, and reverse osmosis are the most common and can remove up to 90 percent of radium present. Ion exchange (i.e. water softeners) can often remove 90 percent of radium present along with water hardness. For some people, an undesired effect of ion exchange is the addition of sodium to the treated water. Those on low sodium (salt) diets should consider this before installing a softener. Reverse osmosis does not add sodium to the water.