

**NOTICE TO
VILLAGE OF MARSHALL
WATER UTILITY CUSTOMERS**

**IMPORTANT INFORMATION ABOUT YOUR
DRINKING WATER & RADIUM IN YOUR WATER**

The sources of drinking water both tap water and bottled water; includes rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- J Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- J Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- J Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.
- J Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.
- J Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which shall provide the same protection for public health. The Wisconsin Department of Natural Resources (DNR) enforces the EPA regulations that the Marshall Water Utility needs to comply with.

The Marshall Water Utility has a sampling program to make sure your water is safely delivered to you. Your water is tested for many contaminants. Your Water Utility takes samples for bacteria four (4) times a month. We are allowed to monitor for some contaminants less frequently than once a year. One of those contaminants is Radium.

Naturally occurring radium (Ra) is a radioactive element contained in many rock formations, usually in small amounts. There are two forms of radium that can most likely

be transferred from the rock into Wisconsin (WI) groundwater: Ra-226 and Ra-228. As they naturally break down over time, (a process called radioactive decay), they give off different types of radioactive particles. Ra-226 gives off alpha particles; Ra-228 gives off beta particles. However chemically, they both behave like calcium and magnesium, the two major components of water hardness.

In the first quarter of 2014, at Municipal Well No. 2, a sample was taken that indicated the presence of Radium 226 and 228. EPA regulations state that a radium level of higher than 5 pico-Curie per liter is the maximum contaminant level (MCL) allowed in the drinking water. The Radium sample was 9.18 pico-Curies. At this point the Water Utility became in violation of the Safe Drinking Water Regulations.

In 2015 the DNR put the Water Utility under orders to take corrective measures to come in compliance. The DNR and the Utility agreed that the Utility would conduct a two year investigative monitoring study to assess the presence of microbiological activity in well 2 to determine best corrective action methods to reduce radium.

The Utility and DNR also agreed to continue to pump water from well 2 into the distribution system and continue to provide quarterly public notice to their customers regarding the radium levels that exceed the drinking water standard.

The Utility contracted with Town & Country Engineering Inc to assess biological activity and water chemistry in well 2's source water, conduct an investigative study and recommend corrective action.

The DNR orders required the Utility to have four consecutive quarterly samples below 4.5 pico-Curies per liter in order to be back in compliance with the regulation.

Listed below are the quarterly test results since the Utility first experience elevated radium levels at well 2.

1 st	Quarter 2014	9.18
2 nd	Quarter 2014	no sample
3 rd	Quarter 2014	8.57
4 th	Quarter 2014	4.51
1 st	Quarter 2015	3.97
2 nd	Quarter 2015	3.01
3 rd	Quarter 2015	4.70
4 th	Quarter 2015	4.60
1 st	Quarter 2016	2.40
2 nd	Quarter 2016	4.20
3 rd	Quarter 2016	4.80
4 th	Quarter 2016	4.40

➤ **What is being done to correct the problem?**

Chemical rehabilitation of Well No. 2 was completed in December, 2015. We are also using a process called rawhiding to reduce the level of radium in the water from Well No. 2. Rawhiding is a process of flushing the well at different flow rates, which causes the water level in the well to raise and lower and creates a scrubbing action on the pump and well wall.

➤ **What precautions should be taken at this time?**

You **DO NOT** need to use an alternative (e.g. bottled) water supply. However, if you have a specific health concern, consult your doctor.

➤ **What does it mean?**

THIS IS NOT AN IMMEDIATE RISK. If it had been, you would have been notified immediately. 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.

If you have questions regarding the safety of our drinking water, please contact Mike Schlimgen-Utility Operator in Charge or Director of Public Works Brian Koll at (608) 655-3814.