

Radium Update for Well #2

Hello everyone. I have not posted anything before about the radium problem at our municipal well #2 until now. I apologize for that. Back on January 15th, 2020 we took our municipal well #2 out of service due to high levels of radium. Everyone was sent a notice that Well #2 had exceeded the acceptable MCL for radium of 5 pCi/L (picocurie). A consultant was hired and the well was inspected. It was discovered that the sandstone was extremely fouled with material that would cause an issue. The well was blasted with air to clear the sandstone of this material. The well cavity was pumped and flushed. Several water samples were then taken and the results were positive, giving us a much lower reading under the MCL. The well was reassembled. This process took many months. Radium 226 and 228 is becoming more common in ground water in southeastern Wisconsin in the last several years. Many cities and villages are facing the rise in concentration of radium in their water systems. As stated in the radium brochure, radium is a naturally occurring element in our ground water. I urge you to read the Radium in Drinking water brochure found on our webpage. To explain radium measurement a little, a picocurie is a measurement describing the rate of radioactive decay. Definition of picocuries per liter of water which is one trillionth of a curie. A curie is defined as the original unit used to express the decay rate of a sample of radioactive material. The curie is equal to that quantity of radioactive material in which the number of atoms decaying per second is equal to 37 billion (3.7×10^{10}). It was based on the rate of decay of atoms within one gram of radium. It is named for Marie and Pierre Curie who discovered radium in 1898. The curie is the basic unit of radioactivity used in the system of radiation units in the United States, referred to as "traditional" units. Wow that is really complicated. In short it is an extremely small amount but can affect your health. I was given an example to illustrate what this means in terms we can understand. If you were to fill an Olympic size swimming pool completely level with sand and took out one grain of sand. Painted this grain of sand a bright color like red to make it visible, and then threw back into the pool, this is what one trillion would look like. Another interesting tidbit is, remember I said radium is becoming more common in the ground in southeastern Wisconsin. Radon which is the same as radium just in vapor form, can be found in the air we breathe in homes basements (you can find more information about Radon and Radium on these websites: <https://www.wri.wisc.edu/news/levels-of-radium-rising-in-wisconsin-groundwater/> and <https://www.dhs.wisconsin.gov/radon/index.htm>). If you visit these two website and there are many more, you will see radon or radium is in many of our homes. Vapors are seeping through cracks in our foundations. You can purchase test kits at most hardware stores or some of the big box stores like Menards to test the air quality in your basement. Back on subject of our well. We have placed well #2 back in service on March 26th, 2021 as allowed by the DNR. A sample was collected per their instruction to be analyzed again for radium. It can take up to 30 days to receive the results. Samples will be collected each quarter and it must average less than the MCL for the year. I will be posting these results here on our website with further developments. If it would exceed the average MCL again, the well will be taken out of service and placed into standby. A decision would then be made to either treat the well to remove the radium or to replace the well. In standby, it would only be used incase of an emergency such as: failure of one of our other wells, a large fire in the city that would require more water, or a water main break that would require more water to maintain our system pressure and volume. Lets keep our fingers crossed that well #2 remains healthy. There are many things going on with our water utility that will impact our monthly bills in the future. Removal of radium and lead in our water, necessary Waste Treatment upgrades required to stay in compliance with the DNR and EPA. We are not in this alone. Many communities that I have been in touch with lately are facing the same kind of issues that Juneau is facing. Yes it is going to impact their water and sewer rates also. I hope this helps to understand some of the issues we are facing. If you have any questions, please don't hesitate to contact my office at 920-386-4815 Monday through Friday between 7am and 3pm.



Tim Gassner