



Waukesha Water Utility

SERVING WAUKESHA SINCE 1886

115 DELAFIELD STREET
WAUKESHA, WI 53188-3615

Telephone: (262) 521-5272 • Fax: (262) 521-5265 • E-mail: contactus@waukesha-water.com

Water Quality Update – Radium (Fourth Quarter 2023)

Waukesha transitioned from groundwater supplies to a Lake Michigan water supply starting October 9, 2023. The change was made in order to provide a long-term sustainable source of water for our customers and to comply with federal drinking water standards for combined radium and gross alpha, contaminants that occur naturally in water from local deep aquifers, at all times. Prior to the change, Waukesha was meeting the standards on a flow weighted average basis, but not necessarily on a daily basis. Waukesha has been required to notify customers of radium levels on a quarterly basis, which is provided below.

During the first nine days of October 2023 (prior to the transition), Wells No. 8, 10, 11, 12 and 13 provided groundwater to our customers. These wells – were either deep water wells (8 and 10) with radium treatment or shallow wells (11,12 and 13)– supplying water below the regulated limits for combined radium and gross alpha. The treated groundwater was compliant with a combined radium rolling average of 3.90pCi/l versus the limit of 5, and the rolling average for gross alpha of 9.35pCi/l versus the limit of 15.

On October 9, the Waukesha Water Utility started the transition to Lake Michigan water, with all customers on 100% Lake Michigan water by October 17th. Tests performed by our new supplier, Milwaukee Water Works, on the Lake Michigan water leaving their treatment plants showed levels of combined radium between 0.66pCi/l and 0.93pCi/l versus the limit of 5. Tests performed by MWW on the Lake Michigan water leaving their treatment plants show levels of gross alpha between 0.70pCi/l and 0.90pCi/l versus the limit of 15.

For information on radium in groundwater, please see the third quarter 2023 notice below.



Waukesha Water Utility

SERVING WAUKESHA SINCE 1886

Telephone: (262) 521-5272 • PO Box 1648, 53187-1648 • E-mail: contactus@waukesha-water.com

Public Notice

Dear Customer/User:

Waukesha Water Utility currently operates our system to meet the radium and gross alpha standards based upon a weighted average calculation as agreed upon with the State of Wisconsin Department of Justice. The Utility is generally meeting the weighted average calculation standards; however, it is possible that periodic exceedances of the MCLs for alpha emitters and combined radium occur. Waukesha has agreed to come into complete compliance by meeting this standard at all times at each entry point by 2023. Until then, the U.S. Environmental Protection Agency (EPA) requires that we publish this notice quarterly to inform you of our compliance with the maximum contaminant level (MCL) for gross alpha and radium in the water supply.

Most recent sample results from operating wells:

Sample Location	Sample Range	Sample Parameter	Results (pCi/L)	MCL (pCi/L)	12-Month Running Average
Well No. 3	4/22 – 4/23	Gross Alpha	2.29 – 7.95	15	Gross Alpha = 9.21 pCi/L
Well No. 3	4/22 – 4/23	Combined Radium	1.74 – 2.66	5	
Well No. 5	Last used in September 2019				Combined Radium = 3.96 pCi/L
Well No. 6	Last used in February 2019				
Well No. 7*	3/22 – 3/23	Gross Alpha	6.22 – 10.6	15	
Well No. 7*	3/22 – 3/23	Combined Radium	4.07 – 6.54	5	
EP100**	4/22 – 4/23	Gross Alpha	3.19 – 4.81	15	
EP100**	4/22 – 4/23	Combined Radium	1.68 – 2.23	5	
Well No. 9	Last used in 2008				
Well No. 10	5/22 – 5/23	Gross Alpha	4.93 – 12.3	15	
Well No. 10	5/22 – 5/23	Combined Radium	1.8 – 4.45	5	
Well No. 13	4/23 (annual)	Gross Alpha	2.22	15	
Well No. 13	4/23 (annual)	Combined Radium	0.34	5	

*Well No 7 was used in March 2023 due to Well No. 10 pump issues.

** EP100 is a blending facility that blends deep aquifer water (Well 8) with shallow aquifer water (Wells 11 & 12)

Sources and potential health effects: The EPA sets drinking water standards and has determined that alpha emitting radionuclides may be of health concern at certain levels of exposure. Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer. EPA has set the drinking water standard for alpha emitters at 15 pCi/L to protect against cancer risk.

Radium is one of several common natural radioactive elements in the earth's crust; shales, granites, and sandstones are the types of rocks which, typically, contain a higher percentage of radium. All but three of our wells draw from formations containing sandstone and shale. Some people who drink water containing radium 226 and 228 in excess of the MCL over many years may have an increased risk of getting cancer. Radium is similar to calcium; in that it accumulates in the bones. Risks are estimated from animal tests and occupational exposures where doses are extremely high. Because we may not know more about the actual effects of low levels of radium in the diet for many years, the drinking water standard was established at 5 pCi/L as a preventative measure.

Waukesha must meet the radium standards on a weighted average basis. As a result, while there may be the potential for an occasional MCL exceedance, it cannot be an exceedance persisting “over many years”. That is what the weighted average insures against. What the Utility is doing: We operate three HMO (Hydrous Manganese Oxide) treatment plants to remove radium to achieve compliance with all drinking water standards. We also have three shallow wells in service. In addition, Waukesha applied to divert and return Lake Michigan water. The eight Great Lakes states and two Canadian provinces that reviewed its application unanimously have voted that Waukesha meets the strict conditions of the Great Lakes Compact, including that it has no reasonable water supply alternative to Great Lakes water. In advance of 2023, when Lake Michigan water will be used, the Utility continues operating under a plan that manages our water supply utilizing weighted averaging strategies. This strategy provides customers with the lowest radium content water at all times.

Please share this information with other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

Please call (262) 521-5272, if you have any questions.

Daniel S. Duchniak, P.E., General Manager, Waukesha Water Utility