

**ODNR tests show high levels of Radium in AquaSalina in pre and post filtering. Levels far exceed legal limits for discharge to the environment.**

**AQUASALINA**

Aqua Salina is a product made by filtering brine from conventional wells and adding an anti-corrosive chemical. It has been sold to the general public as well as to the State of Ohio for use on our roads. A total of five legislative bills have been introduced during multiple General Assemblies seeking to shield this product from regulation.

All samples of AquaSalina tested by Ohio Department of Natural Resources (ODNR) exceeded federal Drinking Water legal limits for combined Ra-226 and Ra-228, averaging 1,731 pCi/L, or 346 times the EPA standard. The highest concentration found (from a container of AquaSalina purchased from a hardware store in Hartville, OH) was almost 500 times the standard. Ra-226 and Ra-228 radioactivity in all samples also exceeded State of Ohio limits for discharge to the environment (OAC 3701:1-38-12, App. C, Table II, Effluent Concentrations). The combined radium Ra226/Ra228 concentration in all samples of post-production AquaSalina, other than the Hartville Hardware sample, averaged within 10% of each other at 1,578.6 pCi/l. (ODNR Interoffice Memo 7/26/17; pdf at benohio.org issues page)

**UPDATE ON AQUASALINA TESTING**

In February and March of 2020, the ODNR did split sampling of the processed AquaSalina with the company's original source, oil and gas brine from conventional wells. Their conclusion was that the process did not *increase* the concentration of Radium 226 and 228. However, this conclusion is irrelevant — it has nothing to do with whether the levels found are *safe*. They clearly are not! See below for a short breakdown of the concentration.

**Table 3 - Summary of ODNR-DOGRM split-sample results from Table 1 (radiochemistry analysis).**

Combined Ra226 & Ra228	Minimum pCi/l	Average pCi/l	Maximum pCi/l
Raw Brine (conventional wells)	1047	3715	9602
Finished Brine (AquaSalina)	901	2510	5628

**Table 4 - Summary of ODNR-DOGRM split-sample results from Table 2 (indirect gamma analysis).**

Combined Ra226 & Ra228	Minimum pCi/l	Average pCi/l	Maximum pCi/l
Raw Brine (conventional wells)	1328	3987	9541
Finished Brine (AquaSalina)	1328	3251	7415

- Aquasalina is approved for road use in 224 townships/municipalities in Ohio.
- Ohio Department of Transportation also uses AquaSalina on state roads in 29 counties.

Under federal and state Underground Injection Control (UIC) regulations, any waste containing radioactive concentrations exceeding those designated by the Nuclear Regulatory Commission (10 CFR 20 Appendix B, Table 2, Column 2) must be treated as radioactive and disposed of accordingly. For both radium-226 and radium-228, the threshold is 60 pCi/L for a combined threshold of 120 pCi/L. Only legal exemptions for oil and gas industry waste allow this radioactive waste to be both sold as a commodity and used indiscriminately on public roads with no assessment of environmental and public health impacts. Allowing the spreading of radioactive waste in the environment is a serious health issue that must be halted now! See HB 282 factsheet next page.