

I've attached a pdf of two slides I use in my presentations. The first is the data my lab collected. The second is the ODNR table and information about "hot" bananas (Mr. Mansbery's favorite topic).

Debunking the banana analogy.

Bananas have potassium 40 that decays to calcium and argon, both stable.

Radium 226 decays into radon 222 that decays through a series of radioactive daughters to polonium 210 and lead 210 also radioactive (see attached). Aquasalina actually increases in radioactivity over time because of these all the radioactive daughter decay products.

The container I received had 625 pCi/L radium 226 and 516 pCi/L radium 228 (1141 pCi/L total radium) when it was measured.

After a 3 month incubation period (I had opened the container in January), I measured 145 pCi/L of radon (using the Rad7 alpha spectrometer) in the headspace of my container of Aquasalina. It continues to generate radon 222. Just this month I measure 165 pCi/L of radon (after it was sealed up another 3 months).

Aquasalina is not just a salt brine as it still contains many of the constituents of the oil and gas produced water. Anything in red in the table of results is above the US EPA maximum contaminate levels (MCL). The high level of bromide is problematic as it will assuredly get into surface and groundwater (sources of public drinking water).

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The main ingredient is oil and gas brine, not ancient seawater

It contains radium 226 and 228.

Radium 226 has a half life of 1,600 years, it decays to radon 222 , which decays to polonium 218, which decays to lead 219. So once the container is sealed up, the daughter products make it more radioactive.

Repeated application can lead to a build up of radioactivity.

It contains high levels of arsenic, selenium, iron, manganese, and chromium, in excess of the EPA water standards.

The high levels of bromide in AquaSalina could cause issues with drinking water if it got into the source water. The presence of bromide and residual organics in the source water results in carcinogenic trihalomethanes being formed during the chlorination process.

Road brine made from calcium chloride should not have those constituents or be radioactive.

The results below are from our container of AquaSalina (purchased at a Lowes in Ohio). The results are in mg/L (milligrams per liter) or ppm. The numbers highlighted in red indicate concentrations above EPA standards for water.

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AquaSalina

Manufactured by Nature's Own

On sale at many
Lowes in Ohio

Aquasalina ICPMS results

Element	MCL, ppm	Aquasalina, ppm
Li		45.33
B		22.63
Na		44937
Mg		4776
Al	0.05-0.2	0.13
Si		3.09
P		4.93
K		1611
Ca		27617
Ti		0.30
V		2.02
Cr	0.1 (total)	0.14
Mn	0.050	7.39
Fe	0.30	377.4
Co		0.13
Ni		2.06
Cu	<1.3	1.79
Zn	5.000	0.28
As	0.010	1.92
Se	0.050	15.28
Rb		2.41
Sr		367.5
Mo		0.01
Ag	0.1000	0.004
Cd	0.0050	<0.0001
Sb		<0.001
Cs		0.06
Ba	2.00	3.58
W		0.04
Hg	0.0020	na
Pb	0.015	0.02
Bi		<0.0001
U	0.03000	<0.0001

IC results

Sample #	Fluoride	Chloride	Nitrite	Bromide	Nitrate	Phosphate	Sulfate
MCL, ppm	4 (2)	250.00	3.30		44.30		250.00
Aquasalina	bdl	72176	bdl	2546	bdl	bdl	36.6



625 pCi/L Ra²²⁶ 516 pCi/L Ra²²⁸
"Ancient Seawater"

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3.0 Observations / Analytical Results

Sample Collection Location	Collection Date	Ra226 Results (pCi/l)*	Ra228 Results (pCi/l)*	Combined Results (pCi/l)*
Lowes – Canton [purchase]	6/2/17	1,059 ± 136	604 ± 111	1,663 ± 247
Hartville Hardware [purchase]	6/2/17	1,158 ± 144	1,333 ± 241	2,491 ± 384
ODNR Cambridge Lab	6/2/17	791 ± 41.8	604 ± 25.7	1,395 ± 67.5
AquaS Mogadore - PRE	6/12/17	925 ± 116	373 ± 69.8	1,298 ± 185.8
- POST	6/12/17	1,010 ± 126	432 ± 80.1	1,442 ± 206.1
AquaS Cleve - PRE (1)	6/15/17	595 ± 772	568 ± 127	1,163 ± 899
- POST (1)	6/15/17	949 ± 478	734 ± 129	1,683 ± 607
- PRE (2)	6/15/17	501 ± 462	387 ± 75	888 ± 537
- POST (2)	6/15/17	997 ± 545	713 ± 102	1,710 ± 647
ODOT tap water - PRE	6/21/17	1.90 ± 0.8	0.922 ± 0.4	2.8 ± 1.2
ODOT mixture - POST	6/12/17	2.77 ± 1.58	5.78 ± 7.67	8.55 ± 9.27

* Analytical laboratory results reports are attached.

Bananas contain Potassium 40 (^{40}K) with a half-life of 1.251×10^9 years. It decays to calcium or argon, both non-radioactive. 1 bananas gets you 0.1 uSv or 10 urem.

The **radiation** exposure from consuming a **banana** is approximately 1% of the average daily exposure to **radiation**, which is 100 **banana** equivalent doses (BED). The maximum permitted **radiation** leakage for a nuclear power plant is equivalent to 2,500 BED (250 μSv) per year, while a chest CT scan delivers 70,000 BED (7 mSv).
Wikipedia



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