

Buckeye Brine is currently applying to the Ohio EPA to convert two of its three Class 2 waste wells into Class 1 waste wells. Those of us who are opposed to Buckeye Brine's permit application are being accused of fear mongering and spreading misinformation. In fact, what we are doing is examining the oil and gas industry's narrative about the safety and invincibility of Class 1 wells. We question whether unlimited amounts of harmful substances can be transported, stored, processed, and injected under our aquifers and we will all live happily ever after. We question that if you use the magic words, "Built to Class 1 Standards" the well will never leak. Our concerns remain after reviewing three injection well operations built to Class 1 standards right here in Ohio:

(1) - In the early 1980s, Chemical Waste Management Inc., which owns and operates a Class 1 commercial waste injection site in Vickery (near Toledo), was fined more than \$12 million for safety and health violations. The company, a subsidiary of Waste Management Inc., was fined \$2.5 million in 1983 for allowing oil at the site to be contaminated by PCBs, and was fined again in 1984 for not being able to account for between 50 million and 60 million gallons of hazardous waste injected into the ground. Here is an excerpt from an evaluation by the U.S. EPA 2008:

FINAL REPORT FOR ON-SITE AUDIT HELD JULY 21-24, Vickery, Ohio: This facility has four hazardous Class I injection wells. Well #6 had a major well workover in 2004 because the well was beginning to lose mechanical integrity. The well was shut-in before the rework. During the rework, major defects were found in the casing between 2700 - 2750 feet. Logging determined that the well had failed at this interval. The company milled out the liner and Hastelloy and squeezed approximately 2900 sacks of cement into the problem zone to isolate it. The problem zone is the Rome Formation which is the sandstone layer between the two dolomites approximately 60 to 100 feet above the top of the Mt. Simon Sandstone. This same well was reworked in the 1980's due to failure at the same interval. Ohio EPA had identified these same issues and has been working with the facility to address them.

(2) - While drilling a disposal well in southern Ohio, workers for the Aristech Chemical Corp. (since bought by Sunoco, and sold again, in 2011, to Haverhill Chemicals) were overwhelmed by the smell of phenol, a deadly chemical the company had injected into two Class 1 wells nearby. The company's permit assured the OEPA that the phenol and other class 1 waste would remain trapped for at least 10,000 years, using some of the most advanced computer modeling and the best geological science available at the time.

But the pollution had risen 1,400 feet through rock layers and was progressing toward surface aquifers. Ohio environmental officials – aided by the EPA – investigated for some 15 years. They concluded that the wells were mechanically sound, but Aristech had injected waste into them faster and under higher pressure than the geologic formation could bear.

Though scientists maintain that the Aristech leak was a rarity, they acknowledge that such problems are more likely in places where industrial activity has changed the underground environment. Industrial activity within a 2 mile radius of the proposed permit here in Coshocton consists of 27 wells on record that are drilled deep enough to interact with Buckeye Brine's injection operations. Some of these wells may also be subjected to fracking in order to release the gas and oil beneath them. Will this further destabilize the injection and containment zones by fracturing and fissuring the rock layers in the geology surrounding Buckeye Brine's wells?

"It's a natural system and if you go in and start punching holes through it and changing pressure systems around, it's no longer natural," said Nathan Wiser, an underground injection expert working for the EPA in its Rocky Mountain region, in a 2010 interview. "It's difficult to know how it would behave in those circumstances."

(3) - Both of Buckeye Brine's showcase wells, the Adams #1 and the Adams #3, were built to Class 1 standards and are being considered for Class 1 permits. Both have structural problems. Adams #1 has a

problem with the cement around its casing. The cement did not come all the way to the surface around the long string casing and the well was judged to be deficient. The Letter of Deficiency reported that the top 900 ft. of the casing that injects the waste down into the injection zone has no cement.

The Adams #3 well casing has failed. An OEPA Notice of Deficiency dated October 3, 2017 indicates that the casing has separated. Kenny Brown of the ODNR said the well casing has a hole in it and inspection reports dating back to 2017 show that the well has been shut down and is awaiting a repair plan. Reports indicate it has not been used in a year.

We are told that the safety record within the Buckeye Brine plant is exemplary, as it should be, for an enterprise that handles large volumes of harmful chemicals. I am sure there are safety protocols, emergency procedures, and protective gear for every aspect of the operation. But that control and safety does not extend to the community once the waste is released into the environment. The physical properties of the geology determine where and how far the waste will migrate. Undetected anomalies and variables within the rock formations can render the best projections useless. It has been demonstrated that despite using the best science and building to the best regulatory standards that these wells can and do fail.

Nick Teti

Coshocton Environmental and Community Awareness  
Coshocton, Ohio