Water Update

June 15, 2025

Andrea Rice, MACA Water Consultant

It was recently encouraged that a water "fun fact" be included in the MACA Water Updates to help information stick for people who are not directly involved with water issues every day. You will see this incorporated below in this month's water update and when possible, going forward.

Fun Fact: Lake Erie could have carbonated water stored under it in the future.

As part of MACA's monitoring of the Great Lakes Water Quality Agreement, it was recently announced that Canada was providing a notification update stating a legislative proposal was being made for regulation of geologic carbon storage in Ontario. The legislation, which was reintroduced May 27, 2025, proposes "safe, responsible, and permanent storage of carbon dioxide within geologic formations in a manner that protects public safety and the environment." Most of the carbon dioxide storage is expected to take place under the beds of Lake Erie and Lake Huron. This is all part of Ontario's multi-phased approach to enabling and regulating the storage of carbon dioxide underground.

According to the Global CCS Institute, the practice of injecting and storing CO2 has been used safely for over 50 years. This would be used by Ontario as a critical tool to meet its emissions reduction targets. The legislation would establish a framework to regulate the activity of storing CO2 in geologic formations to ensure it is done responsible to "safeguard people and the environment."

Through this process, CO2 generated through production of cement, steel, and fertilizer as well as from generating power and refining oil/gas will be captured, instead of emitted into the atmosphere, and permanently stored (sequestered) deep underground. Most existing CO2 geologic storage projects have occurred underground sedimentary rock formations including in saline aquifers and depleted oil and gas reservoirs.

Once the CO2 is injected underground, it becomes trapped in underground pore space and is sealed by the layers of rock above the storage area. The injected CO2 can also dissolve into saline water or react with rocks and fluids to form solid carbonite minerals underground. After injecting from a specific well is completed, the

well is plugged and the site is decommissioned with ongoing monitoring to mitigate any potential safety risks to the public or the environment.

Although there may not *exactly* be carbonated water under the Great Lakes like what might be used in beverages, it is an interesting process potentially being practiced by our neighbors to the north in Canada. For more information, view this fact sheet.

Each month Andrea Rice, CCA, Director of Research, Education, and Outreach, CCA Program Administrator for the Missouri Agribusiness Association, which serves as MACA's Water Consultant; provides an update on current water issues. Please share their information with others in your company.
– Rodney Schmidt, MACA Executive Director.