



‘It’s about as sterile as you can get’ — Storm, wastewater runoff from AltEn traveled miles downstream for years

- [Chris Dunker](#), July 4, 2021

ASHLAND — The farm pond behind Stan and Evelyn Keiser’s home was an idyllic scene of rural life.

Migratory birds remembered the private body of water on their annual journey north each spring. In the summer, a chorus of bullfrogs would join in a serenade from the tree-lined bank. Fishermen found the pond stocked with bass, many longer than 20 inches.

The Keisers were entertaining plans of putting up a cabin near the pond dock, just in time for their retirement, while their daughter’s family envisioned building a house that would overlook the body of water from the south.

Evelyn and Stan Keiser had hoped to build a cabin on their property near a pond created by Stan Keiser's grandfather. The pond, once teeming with wildlife, is now a dead zone after pesticide-contaminated from the AltEn ethanol plant near Mead flowed downstream into it.

At the origin of the waterway that feeds into it, some 6 miles to the north and west, is AltEn, the biofuel plant that turned pesticide-coated corn seeds into ethanol.

Since the plant began piling up the millions of pounds of toxic waste on its property, heavy rains have flushed a cocktail of chemicals downstream, through a University of Nebraska research farm and an Army training ground, directly into the Keisers' pond.

The pesticides, phosphates and ammonia — as well as other chemicals — have effectively rendered the pond devoid of life, said Stan Keiser, whose family has lived on the property for more than a century.

“There’s not one lick of oxygen in there,” he said. “It’s about as sterile as you can get

Stormwater runoff carrying pesticides from AltEn traveled 6 miles downstream to Stan and Evelyn Keiser's farm pond.

The Keisers' history with the land in southeastern Saunders County began long before the pond.

Eli and Cora Keiser — Stan’s great-grandparents — bought an expansive property 7 miles north of Ashland in 1911 and farmed it until low grain prices forced him to sell off most of the farm in the Great Depression.

Their son and Stan's grandfather, Ira Keiser, bought the property with his wife, Maggie, and attempted to diversify the farm, planting potatoes and an apple orchard, raising sheep, even building a baseball field that was a draw for people far and wide.

Not long after America entered World War II, the landscape in Saunders County changed when the U.S. Army identified the 10,000 acres of flat land to the west of the Keiser farmstead as the perfect place to build bombs, and the site became the Nebraska Ordnance Plant.

“We had to win the war,” Keiser said, but in building the facility, water was diverted, resulting in a drainage ditch that traveled toward the south and east, where it would meet with Clear Creek.

The new flow came with a new set of troubles, frequently washing silt out of a sandy ridge into the creeks in the valley below, so in 1949, Ira Keiser and a neighbor excavated a large, earthen dam about 500 feet to the west of the main house.

“My grandpa told me there was a hole big enough we could put every building we own in it,” Keiser said.

That hole eventually began to collect stormwater, and once the U.S. Army Corps of Engineers began filtering groundwater from the Todd Valley aquifer contaminated by the former ordnance plant in the 1990s, a valve was installed to pump some of the treated water into the pond.

While the dam was built for — and still serves — a practical purpose, it became an oasis for the Keiser family.

“You could dip a glass in there and pull out water that looked clear enough to drink,” said Amy Whitehead, Stan and Evelyn’s daughter who plans to one day take over the farm.

Family and friends enjoyed the pond for years, but the pastoral setting wouldn’t last

The clean water in Stan and Evelyn Keiser's farm pond was tainted after a mid-March rain flushed pesticide-contaminated water and manure downstream from AltEn. Before, the water was clear enough to drink, the Kaiser's daughter said.

In 2004, at the earliest stages of the permitting process, E3 Biofuels — AltEn’s predecessor — identified Clear Creek as the stream that would ultimately catch water used to cool the ethanol plant, which AltEn reiterated in its permit application a decade later.

Schematics of the facility also included a drainage ditch running east and west between AltEn and the neighboring Mead Cattle Co., which eventually empties into a clay-lined holding pond built big enough to contain a “25-year, 24-hour storm event.”

“Surface water and runoff is controlled at the facility by confining the active areas with berms and is directed to a holding pond,” states a 2015 permit application filed by AltEn.

Almost as soon as the ethanol company went into operation, Nebraska Department of Environment and Energy regulators began finding problems with controlling runoff and ensuring proper drainage from the complex.

AltEn was able to quickly correct those deficiencies, according to state records, but its problems grew as it continued making ethanol, which resulted in more solid byproducts needing to be stored at a new location on the grounds.

Responding to questions from the state about how a new storage area fit into AltEn’s existing permit, plant manager Jim Stewart told regulators in June 2017 that the company had built a series of dikes to control runoff, while admitting it would flow elsewhere.

“Those areas drain into a grass area along the east side of Mead Cattle’s holding pond,” Stewart wrote, who added the company planned to pump any surface water that ran over the dikes back into its industrial lagoons.

Soon, an estimated 7,000 tons of pesticide-laden waste were left rotting on the secondary storage area, despite repeated insistence from the state that AltEn develop a plan to dispose of the distiller’s grains.

By the next year, in 2018, state inspectors found the berms surrounding the distiller's grains had been breached and were releasing discolored, stinking water onto the neighboring property, as well as a tar-like sludge and lagoon discharge into the creek.

The inspections culminated in a complaint against AltEn filed that December, which ordered AltEn to correct several problems in its stormwater management plans, including preventing runoff and filing missing records with regulators.

AltEn, responding to the state, indicated the berm had been repaired the same day the problem had been found, and pledged to check the earthen containment barriers on a more regular basis.

Six miles downstream, Stan Keiser was unaware of what was going on at AltEn in its earliest years of operation.

An algae bloom formed over the pond in the spring of 2016, and after a heavy rain, dozens of fish washed up dead along the grassy banks.

A few days later, after picking up and disposing of as many of the fish as possible, Keiser took his rod and reel to see if he could find any fish that survived the event, but came back empty-handed.

Months later, in October, he called Nebraska Game and Parks to request the agency come "shock" the pond — a process of administering an electric current through the water in order to determine the fish population.

A private water specialist took a boat out and performed an electroshock for 15 minutes, a spokeswoman confirmed, but did not see any fish.

"There was not one fish left in that pond," Keiser said.

The fish kill was attributed to the lack of diffused oxygen in the water, and Keiser drew up plans with an electrician to install an aerator.

At the time, neither Keiser nor the state were aware AltEn was using pesticide-treated seeds — and not harvested corn, as is common for most ethanol plants — as a feedstock.

Keiser said it never occurred to him to test the pond water for chemicals: "I never dreamed of taking a sample."

Game and Parks does not generally test the water quality or determine the cause of death for fish, and didn't following the 2016 fish kill in the Keiser pond, the agency spokeswoman said, noting that responsibility belongs to the Department of Environment and Energy.

Keiser made the decision to not restock the pond until he could install an aerator, which over the next several years meant the pond was without a bioindicator to raise alarm if anything was out of place in the environment.

Meanwhile, upstream, problems continued to mount at AltEn.

The state faulted the company for failing to repair the heavily damaged lagoons and not having a plan on how to dispose of distiller's grains, both of which were found to contain dangerous levels of pesticides.

Ultimately, the Department of Environment and Energy ordered the company to halt its ethanol production in early February 2021.

By this time, an estimated 78,000 tons of contaminated wetcake were being stored on the grounds of the plant, including a new pile just a short distance from the creek.

Shortly after shutting down, a record-breaking cold snap caused a seal to fail on a valve at the bottom of a 4-million-gallon tank holding a combination of manure and liquid byproduct from the ethanol production process.

The resulting rupture caused a "catastrophic release" on Feb. 12 that drained the tank at a rate of 5,000-7,000 gallons per minute, overwhelming efforts to divert the waste into the already deteriorated lagoon system.

An investigation found the slurry had run into the ditches that carry stormwater away from AltEn, through a culvert and onto the Eastern Nebraska Research and Extension Center.

Makeshift dams constructed out of bags of charred distiller's grains, hay bales, wood pallets and other items placed in the path of the release, as well as the frigid temperatures, slowed its migration downstream, which by Feb. 14 stopped about 5 miles away from the plant.

Contractors hired by the state spent the next few weeks pumping contaminated water from collection points at each of several dams back into AltEn's damaged lagoons, and removing hundreds of tons of ice from waterways stretching miles downstream.

Samples collected by state regulators found clothianidin and thiamethoxam — seed treatments deemed deadly to pollinators, fish and invertebrate animals — in concentrations reaching hundreds of parts per billion.

Samples run at the University of Nebraska's Water Sciences Laboratory measured concentrations of clothianidin in excess of 2,400 parts per billion, and thiamethoxam at 800 parts per billion, however.

Meanwhile, samples were taken from several locations, including at the Keisers' pond, a site state officials said the spill had not reached.

Boring through the ice to gather a sample on March 2, a state lab found the presence of two fungicides — tebuconazole and thiabendazole — that were also present in samples of wetcake sold to farmers and delivered to fields miles away.

Keiser said the trace of pesticides in the pond was surprising. The previous year had been a dry one with no rain flowing from the creek into the pond.

He had also shut off the valve running from the nearby Army Corps of Engineers filtration plant, which suggested the pesticides had been in the water since 2019.

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About 10 days after samples were taken at the Keisers' pond, as cleanup of the spill neared its end, AltEn's general manager, Scott Tingelhoff, sent an email to state regulators.

"Over the past month, all of the spilled digestate has been contained and then recovered," Tingelhoff wrote on March 12, asking permission to remove the remaining barrier preventing water from running through a culvert under Nebraska 66 just west of Keiser's property.

"There is not any pumpable liquid remaining at either barricade location," he added.

Tingelhoff told the department AltEn had built additional dirt berms around the piles of pesticide-contaminated byproduct that remained at the facility to "prevent any water contacting the distillers grains from running off the property."

Brad Pracheil, the administrator of the Department of Environment and Energy's inspection division, signed off on the request the same day, according to email records, citing AltEn's assurance that best practices for controlling stormwater runoff were being followed.

Removing the culvert plug "should not result in a violation of state water quality standards," Pracheil wrote to Tingelhoff.

Then, once again, the rains came.

Nearly 3 inches of rain dumped in the Mead area over the next two days, a mid-March soaker that pooled in fields, filled ditches recently scoured by heavy machinery, and easily breached the containment structures surrounding the east wetcake pile at AltEn.

The water quickly moved downstream, flooding the Keisers' pond, and causing brown water to bubble and foam in an overflow area below the dam.

"It turned into a big toilet," said Whitehead, who sent photos to the Department of Environment and Energy.

Two weeks later, an environmental engineer returned to gather samples from Keiser's pond, finding increased levels of tebuconazole and thiabendazole — the fungicides previously discovered — as well as clothianidin and thiamethoxam, which hadn't been detected earlier.

The amount of thiabendazole found in the pond on March 26 was about one-fifth of the amount needed for an acute fish kill, according to the limits set by the Environmental Protection Agency.

And concentrations of clothianidin (50 parts-per billion) and thiamethoxam (60 parts-per billion) were both several times greater than the level necessary to create an acute kill of invertebrate animals in the pond.

Sarah Hoyle, a pesticide program specialist at the Xerces Society, an environmental protection group, said the results paint just a small part of a larger picture.

"The samples showing seed treatment pesticides link the fish kill and contamination to mismanagement at the ethanol plant, which has both released manure and pesticide-contaminated wastewater and allowed unchecked stormwater runoff for years," she said.

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The Department of Environment and Energy arrived at the Keisers to take a profile of its water quality more than two months after the spill was flushed into the family's pond.

Probing the water, state regulators found that there were ample amounts of dissolved oxygen at the water's surface. Less than a meter below, however, there was none.

The amount of ammonia in the pond was measured at 0.42 parts per million, well over the allowable limit of 0.05 parts per million, and the total phosphate was determined to be 1.83 parts per million, far exceeding the limit of 0.05 parts per million set in state regulations.

"Results of the field measurements, water samples analyses, and profile of the pond's water column indicate a very nutrient rich environment which would limit fish and aquatic macroinvertebrate communities," the department told the Keisers in a July 1 letter.

The pond is effectively dead, leaving Keiser unsure of what comes next.

A group of six seed companies that formerly sent treated seeds to AltEn have started cleanup efforts at AltEn, but there has been no signal that remediation will extend to properties affected off-site.

The state approved an application for the AltEn Facility Response Group to begin work earlier this week. A spokesman for Bayer, which is leading the remediation, said the coalition is focused on addressing priorities set by the state.

According to the application, those priorities include drawing down the levels of the lagoons and repairing the damaged liners, as well as consolidating wetcake distributed across the area.

"I'm the last guy they'll clean up," Keiser said.

But in sharing the story of what happened to their pond — where the waters run into Clear Creek, then Wahoo Creek and Salt Creek before flowing into the Platte River — Keiser hopes attention stays on those affected downstream.

"Somebody's got to do something."