Just over a week ago, more than seven million gallons of hog waste escaped two lagoons in Duplin and Sampson Counties, in North Carolina, and entered the tributaries to the South River and the Northeast Cape Fear River. Kemp Burdette, who works as a riverkeeper—a citizen watchdog and advocate, who, along with a small staff, patrols the Cape Fear River Basin—saw it happening during a flight in a small Cessna propeller plane. He was surveying the coastal damage wrought by Hurricane Florence, which continues to flood farming communities many miles inland. As of last week, more than a hundred and thirty of the state’s roughly four thousand hog-waste lagoons were compromised, or close to being compromised, by the historic floodwaters. On Saturday morning, according to North Carolina’s Department of Environmental Quality, the number of currently problematic lagoons had been reduced to eighty-five.

“I know what hog shit smells like and my house smells like hog shit,” Burdette, who lives on the flooding Black River, twenty miles northwest of Wilmington, told me. “The water beside it is full of hog shit.” As soon as he’s done surveying Florence’s broader environmental
damage, he said, “I’ll be home with bottles of bleach trying to clean up, so my kids don’t get sick when we move back in.”

“Waste lagoon” is the pork-industry term for a large earthen pit containing anything that’s discharged from a hog grown in a confined feeding operation for slaughter. The pinkish, putrescent, rurally located lagoons have been a source of concern for decades. Their neighbors—who, studies show, tend to be minorities—live with what they describe as nauseating odors and even “fecal mists.” Flooding takes a largely airborne issue and makes it tangible: whether due to structural damage, inundation, or overtopping from periodic floods, lagoons fail, and their contents, which in some cases have been accumulating for decades, containing untold disease pathogens and bacteria, are sent into neighboring lands and waterways—and even, potentially, drinking water.

“North Carolina has an incredibly large number of folks who rely on wells for drinking water, which is a concern as material gets into groundwater,” Will Hendrick, a staff attorney at Waterkeeper Alliance, a nonprofit environmental group monitoring the lagoon disaster, told me. “Also, downstream communities will be coming into contact with waste as they engage in cleanup efforts, bringing them into contact with bacteria and disease pathogens.” Hendrick resisted quantifying the impact at this point, instead calling it “widespread and significant.” Meanwhile, he said, local government hasn’t been warning downstream communities enough about possible consequences.

A great deal of American pork comes from hogs raised in Duplin and Sampson Counties, and most of those pigs are owned by Smithfield Foods, the largest pig and pork producer in the world, with fifteen billion dollars in annual sales. (When a Chinese conglomerate called WH Group purchased Smithfield, in 2013, Senator Chuck Grassley, a Republican of Iowa, described it as “a bit concerning,” and asked, “How might this deal impact our national security?”) Through a subsidiary called Murphy-Brown, Smithfield contracts approximately twelve hundred of North Carolina’s twenty-two hundred hog farms to raise its pigs. The company owns another two hundred farms outright. In 1999, Jim Hunt, the governor of North Carolina at the time, called for the elimination of hog lagoons over the coming decade, after Hurricane Floyd, in addition to killing forty-eight people and inflicting more than a billion dollars in damages to the North Carolina coast, caused waste lagoons to pollute rivers and groundwater. The following year Smithfield invested fifteen million dollars into researching how to upgrade its waste-management systems, according to Joyce Fitzpatrick, a spokesperson for the company.

The most substantial result of this research was a seventy-seven-page report published in 2013 by the Animal and Poultry Waste Management Center at North Carolina State University. The report, which relied on previous research funded by Smithfield, concluded that a system developed by a North Carolina company called Terra Blue met existing industry regulations and could be incorporated into new or expanded hog farms. It could also be
utilized to improve existing hog-farming operations. The Terra Blue system involves replacing the old earthen pit lagoons with open tanks, which protect groundwater and also nearby land and surface waterways.

“Smithfield has the money to fill in all of these pits and put this waste into a waste-treatment system,” Rick Dove, a senior adviser to the Waterkeeper Alliance, told me. Dove lives in New Bern, North Carolina, just west from a number of failed lagoons. With Terra Blue, he explained, “the solids are sold as fertilizer. The liquids are reprocessed. But Smithfield and its farms won’t adopt the technology, and we end up with these rivers of hog waste.”

Last Tuesday, I spoke to Kraig Westerbeek, Smithfield’s director of renewables, as he rode around Sampson County checking on the company’s farms. Westerbeek has been with the company for twenty-five years. Regarding N.C. State’s Smithfield-funded research, he said, “We provided the money, we didn’t do the analysis.” I asked if anything had come of the money spent by Smithfield, other than the report. No new technology was identified that “met the criteria for operational and economic feasibility,” Westerbeek said.

“Economic feasibility” seems to be the sticking point. “The Terra Blue is workable and permissible,” Mark Rice, a specialist in the department of biological and agricultural engineering at N.C. State, who helped put together the 2013 report, told me. “But not necessarily cost-effective.” Rice has been studying hog-waste management for thirty years. “From a management standpoint, it’s relatively complex,” he said. “A farm would either have to spend a lot of time operating and maintaining that, or hiring somebody else to do that for him, which plays into the economics of it.”

What about the costs of failed lagoons? “Those cleanup and response costs are borne by the general public,” Rice noted. A patchwork of entities—including FEMA, the state’s taxpayer-funded Division of Soil and Water Conservation and Department of Environmental Quality, and local church and school groups—will contribute to recovery efforts. “The cost for the waste-treatment system is borne by the farmer,” Rice explained. “How do we compensate them for that increased cost of production?”

Did Rice think it was fair for the public to bear much of the cost of cleaning up lagoons that exist to support the business of a billion-dollar company? He laughed. “It’s a public-policy decision,” he said. “Whether that’s right, I can’t say. I won’t say. I have my personal opinions, but that’s the way it’s always been.” Did Rice think Smithfield should improve its farmers’ waste system? “It’s a business decision,” he told me.

Did Westerbeek have any regrets about how Smithfield had prepared its farms and lagoons for Florence? Would he do anything different before the next big storm? “Going into this storm, the lagoons were in very good shape,” he said. “So I would expect that to be the case
again. Florence was a thousand-year storm event.” Fitzpatrick, who was on the call, added, “With a thousand-year storm, it’s hard to plan.”

As for what Smithfield is doing now, Westerbeek said, “We’ve spent quite a bit of time, money, and effort—resources—on looking at digesters capturing the energy value from manure, turning it into electricity or renewable natural gas.” He added, “Capturing methane. That’s something we’re excited about.” The very next day, at a global food forum put on by the Wall Street Journal, Smithfield’s C.E.O., Ken Sullivan, appeared willing to act sooner, even considering the relocation of farms from flood-prone areas. “We’ll take a fresh look to see what we learned,” Sullivan said.

In the meantime, Smithfield has additional costs to pay: the company has, in the past year, lost three lawsuits, with damages awarded to the plaintiffs totalling roughly half a billion dollars. (Smithfield is appealing the three verdicts.) In February, eighteen neighbors of a Bladen County farm licensed to hold nearly fifteen thousand hogs sued Murphy-Brown for interfering with the quality of their lives: creating an ongoing nuisance and potential for disease. Murphy-Brown filed a motion requesting a jury inspection of the hog farm in question, and, in a brief opposing that motion, the counsel for the plaintiffs presented photographs that showed a hundred and five tankers, each with a sixty-three-hundred-gallon capacity, leaving the farm days before the request. If full, the tankers would have been carrying about two-thirds of a million gallons of waste. And, according to the court filings, removal of hog waste had “never before occurred in the twenty-three years history of this operation.”

The implication was that Murphy-Brown had attempted to reduce the smell of the lagoons before the jury got a whiff. The judge ruled against the inspection, and the jury ultimately ruled in the plaintiff’s favor in the case, awarding them fifty million dollars. (In August, the Republican congressman David Rouzer, who represents a coastal swath of North Carolina devastated by flooding, said that “nuisance” litigation against the hog industry was “destroying livelihoods and communities in North Carolina,” calling it “a very slippery slope that threatens the very existence of every form of agriculture nationwide.”) A lawyer familiar with the suit shared the filing with me. “Seems to me that, if Smithfield could pump out a lagoon for a jury to see, they could have done this in advance of Florence,” he said. When I posed it to them, Smithfield did not directly answer the question of whether they could have pumped-down problem lagoons prior to the storm. Instead, Westerbeek said, “Going into the storm, the vast majority of lagoons on swine farms had storage to handle more than the thirty inches of rainfall, and all but a small number were able to do so.” He added, “The truth is that all of the technologies tested at N.C. State would have had issues with the historic rainfall received.”

“I’ve seen lagoons drawn down before,” Dove, the Waterkeeper Alliance adviser, told me. “It takes a couple of days with multiple trucks.” Dove agreed that Smithfield could have prevented millions of gallons of hog manure from entering North Carolina’s rivers—but pumping them out, he felt, wasn’t enough. “Could they have taken enough gallons out of
enough lagoons once they knew that storm was coming? Maybe. But storms come again and again. The bottom line is you shouldn’t have to be trying to mitigate storm damage by pumping them down. We know we have lowlands. We know it floods. If there’s a lagoon anywhere near a river, it’s a potential flood victim. We need to get these lagoons removed permanently.”