Dirty job Contaminated

Toxic cleanup shifts from dirt near RDU to region's streams, lakes

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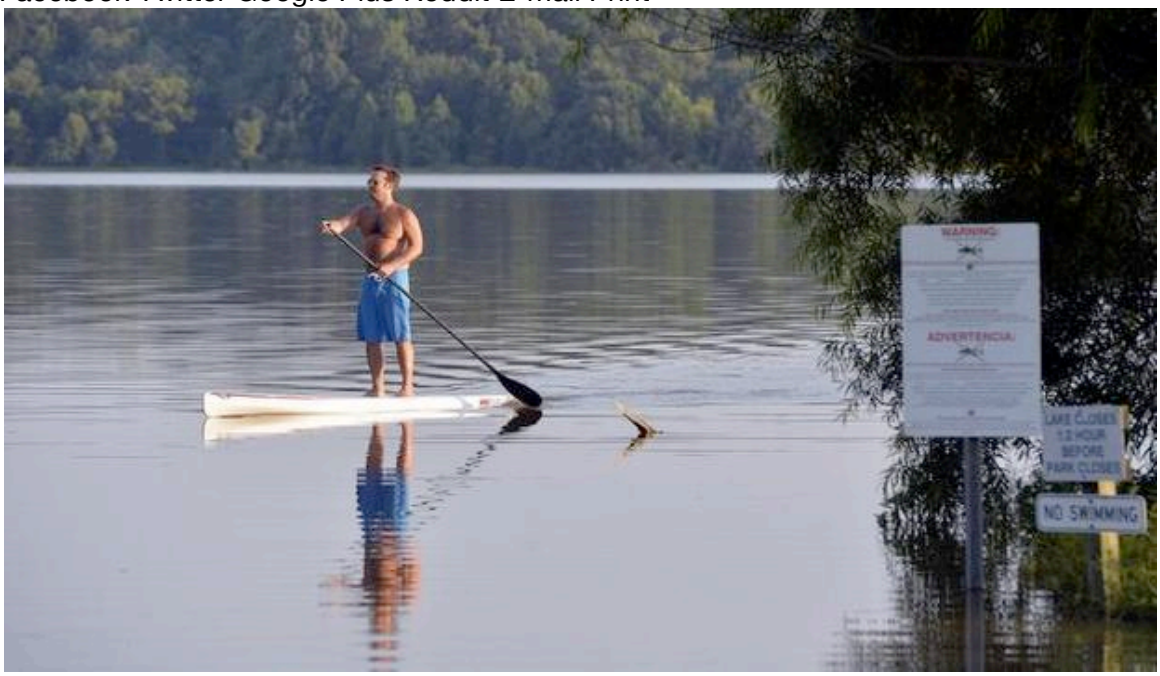

Rob Bailey of Holly Springs heads to shore at Lake Crabtree on his standing paddle board late Wednesday afternoon, July 17, 2014. A large sign at right warns people not to take fish from the lake due to contamination from PCBs. Lake Crabtree is downstream from $82 million Superfund cleanup at the site of the Triangle's nastiest industrial polluter, Ward Transformer Co. Ward's half-century legacy of toxic PCB contamination will linger in the Raleigh area for many years to come, in creeks and lakes from Raleigh- Durham International Airport west of the city to the Neuse River on the east side.
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Nota: Este artículo ha sido traducido al español por el diario La Conexión en Raleigh, que comparte este artículo con sus lectores, en colaboración con The News & Observer. Para una version de este articulo en español visiten aquí.

An 8-acre mound of oven-baked dirt – so sterile that no worms or weeds can live in it – is all that remains after an $82 million Superfund cleanup at the site of Ward Transformer Co., the Triangle's nastiest industrial polluter.

But Ward's half-century legacy of toxic PCB contamination will linger in the Raleigh area for years to come in creeks and lakes from Raleigh-Durham International Airport west of the city to the Neuse River on the east side.

In the next few weeks, environmental scientists will start the most extensive round yet

of tests to determine how much more cleanup work will be needed to remove cancer-causing PCBs (polychlorinated biphenyls) in 6 miles of stream beds and lake bottoms downstream from the former Ward plant near RDU. And they will check to see whether there are still dangerous PCB levels in the flesh of fish that swim as far as 32 miles downstream in Crabtree Creek and part of the Neuse.

Bilingual public health outreach workers also will begin walking the banks of Lake Crabtree and Crabtree Creek to interview anglers who may be catching PCB-poisoned fish to feed their families.

Children, nursing mothers and pregnant women face the worst risks of cancers, infections, skin problems and learning disabilities that have been blamed on PCBs. But there are concerns that some Wake County residents do not see, do not understand or simply ignore the few posted signs that warn against eating these fish.

“You’re talking subsistence fishermen, and a lot of these are minority or Hispanic people,” said Matthew Starr of the nonprofit Neuse River Foundation, which is working with the UNC Superfund Research Program to survey and educate residents fishing in these waters. “This is food for the table, for the family.”

Scientists do not worry about people who swim where PCBs have been found in the muddy stream bottoms. The only PCB public warnings issued in North Carolina are aimed at people who eat contaminated fish.

Persistence – both in the environment and in our body tissues – is what makes PCBs a public health threat. The chemicals become concentrated in fat tissues as they climb the food chain: minnows eaten by fish, fish eaten by birds and people, mothers nursing their children.

“They just stay in your tissues and build up,” said Kathleen Gray of the UNC Superfund Research Program.

Instead of dissolving in streams and groundwater, PCB molecules usually attach themselves to soil particles and then lie undisturbed for years in streambeds – without breaking down – until a storm comes along and washes them farther downstream.

“PCBs do not degrade very easily,” said Nile Testerman, an environmental engineer with the state Department of Environment and Natural Resources. “They’re always there. Once they’re in an environment, they’re hard to get out.”

Thousands of gallons spilled

Before Congress banned them in 1979, PCBs were used in insulating oils to keep electric power transformers from overheating. Ward Transformer began operation in 1964 at its plant near RDU, eventually employing 50 workers to repair and recycle transformers for customers including the electric utility now known as Duke Energy Progress.

Scientists concluded later that, over 15 years, Ward spilled thousands of gallons of

waste oil containing PCBs and other toxins into the soil and downstream waters. When they bored into a streambed near the Ward site in 1997, a black oily liquid oozed from the sand.

Ward Transformer also found a way to dump some of this waste oil far away from the plant. In 1978, two men in a tanker truck sprayed an estimated 30,000 gallons of PCB-laced oil along rural roadsides in 14 counties.

Buck Ward, the company president and one of four men convicted in the dumping, served nine months in federal prison in 1982. He died in 1996.

The Environmental Protection Agency got serious about cleaning the Ward Transformer site in 2003, when it was added to the Superfund national priority list of hazardous waste sites.

Environmental scientists expected they would handle about 100,000 cubic yards of poisoned soil, but in the end, they dug out four times that much. Workers kept digging as long as they found contamination. They had to stop when they reached bedrock, 29 feet below ground.

Some of the soil was hauled away to special landfills, but most of it had to be detoxified at the Ward site in a two-stage thermal process, which heated the soil and converted the PCBs to harmless gases. For three years, passers-by saw water vapor emitted from the thermal operation and mistook it for toxic smoke, or perhaps a plane crash at the nearby airport.

The clean, sterile soil was returned to the ground, shaped into a gently sloping, 8.7-acre mound, and topped with a one-foot layer of honest, organic topsoil that had to be trucked in. The topsoil is planted in grass and shrubs.

In June, the EPA and other officials made a walk-through inspection and agreed that the PCBs have been cleaned from the soil at the Ward site and adjoining acreage used by Estes Express, a trucking firm.

Next stage: Streams and lakes

Years have passed since new toxins washed into the streams from Ward Transformer. Now the EPA is ready to address the PCBs that have been found over the past decade in the creeks and lakes.

“The EPA typically cleans up a sediment site in a logical manner from upstream to downstream,” said Hilary Thornton, an Atlanta-based EPA engineer overseeing the Ward Superfund project.

More excavation is planned in this second phase of the cleanup. According to plans the EPA outlined in 2008, workers will dig out the worst sediment contamination in streams between the Ward site and Lake Crabtree. Where they dig and how much they haul away will be determined by results of the new streambed testing, expected to start by mid-August.

In earlier testing, scientists also found PCBs on the bottoms of Brier Creek Reservoir at RDU and Lake Crabtree. But current plans call for leaving this sediment in place. Digging it out could cost tens of millions of dollars, the EPA said in 2008, and the sediment disturbance could flush more of the toxins into the water downstream.

“Time has passed, and other sediments have come in and been laid down on top of the last particles of PCBs from the Ward site,” Thornton said. “It may be, in EPA’s judgment, better for the stream and the environment for some of these sediments to remain undisturbed and contained, so that humans and (natural organisms) are protected from these sediments.”

That could be a short-sighted decision, said Drew Cade, the Lake Crabtree County Park manager. The lake is not as deep today as it was in the 1980s, when it was built to reduce flooding along Crabtree Creek. It could lose its usefulness in future years unless the county digs out the lake bottom, to make it deeper again.

“We’re a flood-control lake, so we might have to be dredged anyway at some point,” Cade said. “So this might be akin to sweeping the problem under the rug.”

A big black truck

North Carolinians first learned about Ward Transformer and the hazards of PCB pollution in the summer of 1978. An unusual environmental crime wave sparked a public health panic in 14 counties and eventually gave birth to the environmental justice movement.

Federal regulators had halted the manufacture of PCBs earlier in the 1970s. The only legal disposal was by incineration at 2,300 degrees Fahrenheit at one of the two U.S. sites licensed for that purpose, in Missouri and New Jersey.

Ward Transformer found a cheaper alternative. It involved a big, black tanker truck driving up and down rural North Carolina highways at night, spraying PCB-tainted oil along the roadsides.

The dark, noxious oil left waves of sick people in its wake, with complaints of skin rashes and eye, nose and throat irritations.

State officials recognized in August 1978 that they would have to spend millions of dollars to dig up the PCB-contaminated dirt and dispose of it. But it took years of anguish and political tumult to get it done.

The state picked a rural Warren County tract to build a special landfill for the PCB dirt. The choice prompted alarm across the county. Public hearings ran for days, with black and white residents across the county stopping work to tune into the nonstop broadcasts on a small, black-owned public radio station.

The Rev. Ben Chavis, then serving as the national NAACP president, argued that state leaders had picked Warren for the toxic dump site for cynical reasons: a political

calculation that its poor, rural and largely African-American community would not offer serious resistance.

Hundreds of residents were arrested in sustained protests, and there were several years of legal challenges. But the state succeeded in building the landfill and filling it with 13,000 truckloads of PCB dirt in 1982.

Despite promises that it would be safe, the Warren County landfill leaked.

Starting in 2001, the state spent an estimated $24 million to render the PCB dirt harmless, using a thermal process similar to the method that would be used later at the Ward site in Raleigh.

Catch and release

Lake Crabtree was popular for years with local residents, including large numbers of Latino families, who brought their fishing rods and five-gallon buckets to catch fish for their supper tables.

State public health officials warned the public in 2004 to stop eating carp and catfish from the lake, and to eat other fish only once a month. The county commissioners thought that was too confusing, so in 2005 they passed a “catch and release” ordinance with a simpler message: You can catch fish here, but you can’t keep it.

“Now when I see someone with a bucket of fish, I have the authority to dump it back in the lake,” Cade said.

Swimming has never been allowed at Lake Crabtree, but boaters there get wet all the time – along with park employees who stand in the shallows to help them. PCBs have been measured in the lake bottom, but not in the water itself. Officials say that the lake water and its muddy bottom pose no health risks.

“I still get questions from parents who bring their kids out here to attend the YMCA camps,” Cade said. “What’s going to happen to Billy when he falls out of the canoe? I say, ‘Well, nothing.’ ”

When the fish warnings were issued a decade ago, health officials enlisted the help of Spanish-speaking church leaders to get the message to anglers. Cade says he has seen more people fishing around the lake in the past few years, and he suspects that more people are eating the fish they catch.

Starr sees anglers with buckets of fish, too, when he paddles the Neuse and Crabtree Creek. He says Cade and county officials have done a good job at Lake Crabtree, but there are only a few faded signs on Crabtree Creek as it meanders through Umstead State Park and across North Raleigh.

“If they’re feeding it to their children or their pregnant wives, then there’s a real problem,” Starr said. “A child who has been eating the fish for 10 years, that’s where

you're going to start to see the health impacts."

No PCBs have been measured in water or stream sediment in Crabtree Creek downstream from Lake Crabtree, but earlier tests found the toxin in fish swimming in the creek and part of the Neuse. The UNC outreach workers will survey anglers to find out whether they actually are eating the tainted fish.

The World Health Organization has confirmed that PCBs cause cancer. Studies have found other serious health problems for people exposed to PCB pollution – and for wildlife.

"Up on the Hudson River, they found it was altering the songs of songbirds, which was consistent with affecting brain development," said Peter deFur, a Virginia Commonwealth University environmental scientist working as an environmental consultant for the Neuse River Foundation.

Boys with increased concentrations of PCBs had learning disabilities and lower IQs, deFur said. Other health problems include diabetes and asthma.

"And there are problems with immune systems, so people get sick more easily," deFur said.

Before it went out of business years ago, Ward Transformer paid the state $3.5 million to help clean up the highway shoulders that were sprayed with PCBs in 1978. To cover most of the Superfund cleanup costs at the site near RDU, the federal government was able to tap the deeper pockets of some of Ward's former corporate customers.

"You could argue that the Ward (companies) are the most responsible party," Thornton said. "But because of the financial situation they find themselves in, they've been able to get off lightly. Others have the misfortune to have more fortune. They can be required to pay for all of it if the other parties cannot."

Duke Energy Progress, PCS Phosphate and CONSOL Energy are partners in a trust set up to pay most of the $82 million cost for the cleanup work so far.

Other former customers of Ward Transformer will pay an expected $6 million for the downstream work getting underway with testing this summer and streambed excavation next year, Thornton said.

"It will be with us for some time longer, for sure," Thornton said. "PCBs are a long-lived contaminant."

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About the story

Bruce Siceloff, a News & Observer reporter and editor since 1976, first reported on PCB pollution in the summer of 1978.

North Carolinians in 14 rural counties found their roadsides stained with an oily spew of toxic chemical waste that included PCBs. The stinking liquid killed grass, and it left people sick and worried.

“The wind could be a-blowing it to you and your eyes would sting, your nose would burn, and you’d be sick to your stomach,” Braxton Miles, a Johnston County farmhand, told Siceloff in August 1978. “You wanted water, and if you drank water, you felt like you wanted to throw it up.”

Ward Transformer through the years

1964
Ward Transformer Co. plant starts repairing power transformers for electric utilities and other customers at its site near Raleigh-Durham International Airport.

July-August 1978
A Ward contractor dumps an estimated 30,000 gallons of transformer oil laced with PCBs along 210 miles of roadsides in 14 counties.

December 1978
The state says it plans to bury the PCB dirt in Warren County. Five years of court battles and protests follow, with hundreds of arrests.

1982
Buck Ward, the owner of Ward Transformer Co. in Raleigh, one of four men convicted in the PCB dumping, serves nine months in federal prison. His company later pays the state and federal governments $3.5 million toward cleanup costs.

1998
State officials estimate that it will cost $24 million to detoxify the leaking PCB landfill in Warren County. The work starts in 2001.

2003
The 20-acre Ward Transformer site is added to the Environmental Protection Agency’s Superfund national priority list for pollution cleanup.

2003
State health officials warn residents not to eat fish caught in Little Brier Creek and the Brier Creek Reservoir downstream from the Ward site, citing high levels of cancer-causing PCBs in the flesh of fish. Over the next five years, similar PCB-related fish advisories are issued for waters downstream including Brier Creek, Lake Crabtree, Crabtree Creek and part of the Neuse River.

2005
Former customers whose power transformers were serviced at Ward Transformer Co., including the Raleigh-based electric utility now known as Duke Energy Progress, agree in court to pay the cleanup costs.

2007
Cleanup starts at the Ward site.

2008
EPA announces a plan to dig out the worst PCB-contaminated sediment from the Little Brier Creek and Brier Creek streambeds, mostly on RDU Airport property, and haul it away. The excavation now is expected to start in 2015.

August 2014
New soil, water and fish sampling expected to start in these creeks and Brier Creek Reservoir, Lake Crabtree and Crabtree Creek. Public health workers will interview people who fish from these waters to feed their families.