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6th grader finds high levels of arsenic in Mt. Island Lake



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by STUART WATSON / NBC Charlotte

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MOUNTAIN ISLAND LAKE, N.C. -- Sixth grader Anna Behnke loves living on Mountain Island Lake. She skis in the lake as well as swimming and wake-boarding there.

"I have pet turtles that I get from here," she said. There is a cloud on the horizon, Duke Energy's coal fired steam plant, Riverbend.

"I can see it from my bedroom window," said Anna.

After almost a century of producing electricity, Riverbend is closing in April, but it leaves behind two ponds filled with coal ash residue -- almost three million tons of it.

"It's good the plant is going but not the coal ash ponds," Anna said. "We're not sure about those yet."

The coal ash ponds drain directly into Mountain Island Lake, seeping through the ground and flowing directly through an "outfall."

"We swim here and it's just... we can't swim in a dump," Anna said.

When it came time for her science project at Mountain Island Charter School, Anna recruited a couple of friends to test the water around Riverbend for arsenic with a home test kit.

"Because it's our drinking water and it's right beside where I live," she said.

It's not just Anna's drinking water. Most people in Mecklenburg and Gaston counties drink, bathe and cook with water from Mountain Island Lake, sucked out through giant water intakes located directly on the lake.

When Anna's home test results came back, at the "outfall" she found arsenic levels at about twenty times the EPA limit for safe drinking water.

This outgoing sixth grader isn't the only one finding high arsenic levels in the water flowing out of Riverbend's coal ash ponds.

About 150 miles east of Riverbend, in a lab at Duke University, researchers use a sophisticated mass spectrometer to test for arsenic and other contaminants. Geochemist Avner Vengosh conducted the first systemic research into coal ash contamination in the U.S.

The mass spectrometer tracked a kind of molecular "fingerprint" tying the arsenic in the water at the outfall directly to coal ash and not to storm water or naturally occurring elements.

Vengosh found levels of arsenic at the outfall almost five times the EPA limit for drinking water.

By the time the runoff reaches Charlotte Mecklenburg Utilities' drinking water intake about three miles downstream it's significantly diluted. CMU treats the raw water before pumping it all over the county into kitchen sinks, water fountains and

bathtubs.

How worried is Professor Vengosh about the quality of that drinking water?

"Well, that's a tough one," the scientist said. "For drinking water, it has not reached a level of concern."

CMU regularly tests raw water and drinking water and has yet to spot spikes in arsenic.

But Professor Vengosh said under extreme drought conditions, arsenic which has been building in the sediment outside the water intake could "erupt" into Charlotte's raw water supply.

"The way I would describe it, it's like living next to a volcano," Vengosh said. "It could erupt anytime. Right now we are in good shape."

CMU treats the raw water before it's pumped to homes and businesses for drinking, cooking and bathing.

The utility could treat the raw water to take out arsenic but Vengosh said it's expensive.

"Expensive, yes. I think the notion that coal is cheap is not true," he said. "I think we are paying a very high price for coal."

Duke Energy has done its own testing of the water coming from the coal ash ponds.

"We continue to find that the effluent here at Riverbend does not meet the scientific definition of toxicity," said Duke Energy spokeswoman Erin Culbert. She points to a paper produced by the Electric Power Research Institute -- an industry group -- entitled, "Is Coal Ash Toxic?"

The industry concluded "no."

Riverbend has always passed N.C. Department of Environment and Natural Resources water quality tests for toxicity, according to documents provided by DENR.

"We continue to find that the overall water quality of Mountain Island Lake is very

good,” said Culbert, the spokeswoman for Duke Energy.

Duke’s own testing shows arsenic levels at the outfall at up to seven times the EPA permitted levels for drinking water. Culbert said that’s not the proper standard for the outfall. It’s perfectly legal because the EPA doesn’t expect anyone to drink water directly from a coal ash pond without it being diluted and treated.

“Duke Energy absolutely is in compliance with state and federal regulations as it relates to ash basins,” said Culbert.

The Southern Environmental Law Center is currently suing the state of North Carolina to raise some of those standards as they relate to groundwater contamination and has stepped up monitoring. Professor Vengosh is concerned with long term effects of contaminants, like arsenic, which build up in so-called “pore water” trapped in the muck at the bottom of the lake.

“Eventually it would affect the system as a whole,” said Vengosh.

Even after Riverbend closes -- scheduled for April 1 -- the ash ponds will remain open. Duke Energy is conducting engineering studies to face one of two choices:

- Cover the ash basins and let water continue to seep through them or
- Excavate or dig up the ash and move it to a dry and lined landfill like the one currently located at nearby Allen Steam Station in Gaston County on the banks of Lake Wylie.

“Rest assured we will use science to inform those decisions and we will do whatever is necessary to insure very high water quality protection at this site and other sites while being mindful of our costs because those are recovered by customers,” said Culbert.

Which brings us back to Anna, who said she had one aim in her arsenic test (other than a good grade on the science project).

“To let people know that kids have a voice too,” she said.

When it comes to the long term costs of coal ash, it’s her generation that will pay the price.