



McIntosh's mercury menace

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Staff Reporters

Mercury concentrations more than a thousand times higher than normal are widespread near roads, driveways, schoolyards, parks and churches in the community of McIntosh, according to testing sponsored in recent days by the Mobile Register.

The contamination appears to be linked to a distinctive, salty, man-made aggregate that has been used to build up roads, driveways and parking lots throughout the southwest Alabama town.

Leading scientists and health officials who reviewed the Register's findings said that a thorough health study would be needed to determine the extent of the danger. But they said that the characteristics of the contaminated material, its high concentrations of mercury and its apparently broad distribution are likely to present a significant health threat, and urged residents to take a number of precautions.

Scientists said that the primary threat would come from long-term day-to-day exposure to the material.

"What a mess. This is a disaster. I certainly think you should tell people about it," said Deborah Rice, a former U.S. Environmental Protection Agency toxicologist now with the state of Maine. Rice co-authored the scientific paper that established the federal government's safe level for mercury in the human body.

Rice was reacting to descriptions of the soft, rock-like material, which crumbles readily and can easily be carved with a pocketknife. While common along roads, the grayish material is a conspicuous feature even in woods, lawns and park areas of the community in Washington County.

Register testing showed that soils in proximity to these rocks could also be contaminated with mercury at levels hundreds of times higher than scientists would predict for normal soils. Soil samples taken from the yard of McIntosh Mayor Carrol Daugherty revealed mercury contamination at 26 parts per million. Scientists with the National Oceanic and Atmospheric Administration predict that normal "background" levels of the toxic metal in soil should be .058 parts per million.

Mercury poisoning can lead to a number of serious health problems in humans. It is most often associated with severe neurological conditions, ranging from learning difficulties in children to loss of memory, tremors and other nerve and brain disorders in adults. It has also been linked to increased risk of heart attacks and birth defects.

"The main message needs to be about children. Kids live close to the ground. They do a lot of hand-to-mouth activity," Rice said. "Washing kids' hands, watching where they play, not letting them touch this material, not letting anyone wear their shoes inside, these are all going to be important precautions. Mop often, clean window sills."

McIntosh and nearby communities on the border of Mobile and Washington counties have long been recognized as hot spots for mercury pollution. Contamination from the Olin Corp. chlorine manufacturing plant in McIntosh has forced the town to shut down some of its drinking water wells, and the U.S. Environmental Protection Agency has declared the plant property to be a federal Superfund site because of the severity of the contamination there.

But new information and testing revealed previously undocumented contamination -- and from a source that has the potential to expose a much larger number of people in the community to mercury on a daily basis. McIntosh has a population of about 240 within its municipal boundaries, but hundreds more people live in its rural surrounds.

The Register was alerted to the contamination by lawyers developing a class-action lawsuit against Olin Corp. Those lawyers, based in New Orleans, Houston and Mobile, said they began investigating the McIntosh plant and its surroundings after reading Register reports in recent years about mercury contamination at the plant.

Hugh Lambert, with the Lambert and Nelson law firm in New Orleans, supplied the Register with documents that he said were produced by Olin Corp. for the federal court case, filed in Mobile and New Jersey. Those documents state that the salty aggregate was a mercury-laced brine waste product from the company's former chlorine manufacturing process. The documents also describe how the company's waste material -- which EPA categorizes as a hazardous waste product dubbed "K071" -- was supplied by the company as a road-surfacing material.

One of those documents, dated Dec. 8, 2004, is labeled as an "Expert Report" produced for Olin by a company called NewFields. According to the document, at least one prominent road in McIntosh, Allen Barnes Road, was "paved" with materials pulled from the company's mercury brine settling ponds.

Register-sponsored testing of the surface of Allen Barnes Road -- now popularly known as "Salt Road" because of the salty white material covering it -- revealed mercury levels as high as 98 parts per million, nearly 2,000 times higher than normal background levels in the environment. That sample, taken a few yards away from the McIntosh High School baseball field, was the highest sample recorded in the work commissioned by the Register.

The Register also documented large quantities of similar mercury-laced aggregates near a city water tower west of the small downtown, at a municipal baseball field donated by Olin, and surrounding a "family life center" at a church on the border of the McIntosh plant. Roads running throughout the plant appeared to be paved with the material, and large piles of salty gray aggregate were visible at numerous spots on the company property.

At the church, Register-sponsored tests revealed that elevated mercury levels -- about six times higher than national "background" estimates -- were apparent even in the mud that crawfish had piled up at the entrance to their burrows.

The lawyers petitioning for the class-action lawsuit against Olin also provided the Register with results from mercury contamination tests that they commissioned at a variety of sites in McIntosh and in surrounding communities. The analysis from Allen Barnes Road, the mayor's yard and other sites closely correlated with the Register-sponsored findings.

Register-sponsored field sampling was conducted and certified by Ed Cake with the Ocean Springs, Miss.-based Gulf Environmental Consultants, and lab work was performed by the Seattle-based Studio Geochimica, run by Nicolas Bloom, one of the pioneers of modern mercury analysis. Lawyers for Lambert and Nelson and the Houston-based Reich & Binstock law firm said that their field sampling was performed by Boston Chemical Data Corp., and the lab work by Severn-Trent Inc. and Frontier GeoSciences.

Scientists interviewed by the Register said that the chemical make-up of the material -- a cake-

like salt that a Boston Chemical Data Corp. scientist described as a mercuric sulfate compound in a calcium matrix -- means it can be dissolved by rain and then spread to the surrounding soil, swamps and streams.

In telephone conversations Thursday, Olin officials at a company division headquarters in Cleveland, Tenn., did not detail whether contaminated materials had been spread around town, other than to acknowledge that the company donated some dirt to Washington County in the late 1990s. That dirt, according to the company "was analyzed and verified to be safe prior to moving the soil."

"It's important to note that we have been diligently working with the EPA and (state regulators) on environmental issues," said Elaine Patterson, an Olin spokeswoman. "We are committed to operating the plant in a safe and environmentally responsible manner that protects public health and the environment."

Gary Gill, a Texas A& University professor who is one of the country's premier mercury scientists, described mercury sulfate as one of the most "easily mobilized" phases of mercury, and said he would imagine that the material would easily slip into soils and area creeks, where it could rapidly accumulate in fish and in the humans who eat those fish. But he said that the nature of the material and its distribution raised another concern not normally considered in mercury exposure cases: The material could easily be tracked around the house as dust.

"If you are getting dirt in your house at 100 parts per million, and you've got a toddler walking around the house sticking his fingers in his mouth, I'd say you've got a problem. That would be a serious concern," Gill said.

Toxicologist Rice said no one would be able to determine the risks posed to the community without a thorough scientific study.

"The exposure here is quite unknown because this is such an unusual pathway. People are going to be getting this mercury on their hands from the dirt and dust. They will be eating mercury, literally," Rice said. "You've got it in household dust, in their yards, their roads. You've got many sources and at least two pathways. They will be ingesting it, and they will be inhaling it. You'll have to look at cumulative sources."

Umberto Guzman, an EPA official in Atlanta who is supervising part of Olin's Superfund cleanup, told the Register early Thursday morning that he had been made aware of the contamination by the lawyers some months ago and had a "box" of data. But, he said, "we're not really looking into it" because the information was associated with a lawsuit.

Later in the day, Carol Monell, EPA's branch chief of Superfund remedial services, called to say that the information on the mercury-contaminated aggregate had been shared with at least one other agency a month ago.

Monell said that EPA and other agencies were "still in the process of reviewing" the data and that she did not yet have enough information to determine whether there was a threat to the community.

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