

It might be that normally the top couple of inches only pour into the spillway but during one rainstorm there was a lot of wind, he said.

Sediments in the water could have been stirred up.

He was asked if the source of the contamination could be determined, but Keeton explained that testing for that can be tricky and expensive.

There are tests that can determine if the waste is coming from a chicken or a pig or cow but he said he wasn't sure how effective such tests would be.

It's clear, however that the Pine River numbers are much higher in areas where there is agricultural runoff and lower in areas where there isn't that runoff, he said.

Even so, he was asked if human waste was contributing to the problem and he acknowledged that it likely was one part of the contamination coming into the river in Alma via faulty and failing septic systems outside the city limits.

Recreational use of the river, along with economic development aren't the only concerns. Alma gets 20 percent of its drinking water from the river.

The last test samples were completed Wednesday, Keeton said and have been forwarded to the Department of Environmental Quality.

Once those samples are reviewed by the state, it may mean that the city would be placed on a long list of cities to be in line for still more tests, he said.

It is but a start.

Several residents asked if warning or advisory signs shouldn't be posted.

Marcus Cheatham, director of the Mid Michigan Health Department said that the state has authorized health departments to issue advisories for its local waterways and beaches.

Trouble is, Cheatham said, what should the signs say? No swimming or tubing any day but boating or fishing is OK on some days?

The truth is, the hospital has not been over run with E. coli infections.

"And there are no bodies in the river," he said.

Still, the community has to "take the data to heart" and an advisory will be issued after consulting with the city and the state as to the wording, Cheatham said.

He and Keeton pointed out that the problem is not unique to Gratiot, and there are problems throughout the state, including the Chippewa River, which is also reporting high E. coli numbers.

Keeton said he couldn't say that the Pine River was deadly dangerous every day.

"But it is on certain days," he said.

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Alma study: Pine River an E. coli roller coaster

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By Linda Gittleman, The Morning Sun

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On any day in the summer it's not safe to splash around in the Pine River in or near Alma.

But on some days it's downright dangerous due to the very high level of E. coli in the river.

Those days include the times right after it rains.

So called "magic numbers" regarding E. coli showing up in this summer's tests were stressed at the Healthy Pine River citizens meeting Wednesday night.

One magic number is 130. No sample should exceed that, according to the state's standards, said Alma College Professor Tim Keeton, who oversaw the sampling completed by Alma College Student Alex Hall to state requirements.

If those samples exceed 300, it's deemed unsafe for humans, he said.

Four of the five sites exceeded 130 every day this summer while three of the locations showed numbers well over 300 nearly every day.

And on five days, a new magic number of E. coli samples was added: 1,000 – the number recorded in the Pine.

The fact is, E. coli colonies above 1,000 simply aren't counted, Keeton said.

"It's probably much more than 1,000," he said. "It's easily 2,000 or 3,000."

The spots sampled included Riverview Drive, Harrison Road, the Alma Boat Launch – the worst areas – along with Luce Road and the State Street mill pond.

The city of Alma is paying a Grand Rapids firm to duplicate the study to validate the numbers.

In both those studies, State Street proved something of a mystery, Keeton said.

The numbers were low there – even below the 130 cut off. But not during those times right after it rained.

On at least one of those days the numbers jumped as high as 600 even on State Street.

And on those days the other spots zoomed past 1,000.

There's no question that day to day the numbers are like a roller coaster at all the locations: up and down and up and down again, Keeton said.

But State Street was consistently low and Keeton could only speculate why.

"State Street is puzzling," Keeton said. "There's something going on in the spillway."