

# SALT IN THE WATER

## DRINKING WATER MAY BECOME SCARCE SOON IF THE CITY DOESN'T FIND A WAY TO STOP THE SALTWATER INTRUSION

**BY KENDRA R. CHAMBERLAIN,** POSTED FEB 22, 2012, [Tweet](#)

Aside from its other attributes, Baton Rouge is known for its delicious water.

Actually, BR's water ranks second in the country, thanks to a fortuitous geological formation – the Southern Hills Aquifer – from which we draw our drinking water.

In as soon as four years though, the fresh ground water we use may be gone, and the water from your tap could soon be too salty to drink – thanks to excessive pumping of the drinking water aquifer and a steady intrusion of salt water.

A small group of people, from private citizens to geologists to even the Baton Rouge Water Company, and the members of the Metro Council are working to get the city-parish government to take the threat of losing drinking water seriously.

“People should be upset about this,” said Hays Town, a retired contractor who formed the organization Baton Rouge Citizens to Save Our Water, Inc. a few weeks ago. “It’s their fresh drinking water that’s being threatened.”

So far, the organization hasn’t been terribly successful. After months of bureaucratic shuffling, the Department of Natural Resources’ Office of Conservation decided last week to postpone a hearing on the issue until more studies have been completed later this year. According to Eugene Owen, executive chairman of the Baton Rouge Water Company, the city can’t afford to wait much longer, and the water is only getting saltier.

### ***PUMPING WATER LIKE NO TOMORROW***

The problem of salt intrusion is not new. According to some sources, officials in Baton Rouge have been aware of the movement of salt water into our drinking water since the 1930s, though it wasn’t considered a threat to the water supply until the late 1960s.

The geology just beneath Baton Rouge, coupled with significant expansion of the water-pumping industry, has left the city between a rock and a salty spot.

The city sits atop a large aquifer that is bifurcated by the Baton Rouge fault line, a fault that runs east to west through the city. The North side of the fault line is where the drinking water is; the south side of the fault line is where the salt water is.

“Traditionally, the ground water level north of the Baton Rouge fault is higher than the water level south of the Baton Rouge fault, so there’s a south water flow,” said Dr. Frank Tsai, a specialist in water resources and coastal engineering at LSU.

According to Dr. Tsai, as fresh water is being pumped out of the north end of the fault, salt water is flowing in.

“Pumping north of the Baton Rouge fault created a pressure difference, so right now the ground water level in the north area is much, much lower than the level in the south area,” he said.

Both local and federal agencies have been monitoring the progress of saltwater intrusion for decades. The Capital Area Ground Water Conservation Commission was created by the state legislature back in 1975 specifically to keep an eye on the burgeoning issue.

Though saltwater intrusion is nothing new, a perfect storm of expanded industry, plus a rapid expansion of population, along with some other factors, has accelerated the amount of salt water entering the northern area of the fault line.

“When looking at the breakthrough curve of chloride concentration, it has increased dramatically recently – in the past five years,” Dr. Tsai said.

In studying the 1,500 foot-sand aquifer, which serves as the main source of drinking water for East Baton Rouge, Dr. Tsai found some startling results.

“Starting from around 1997 to now, the rate of decline [of drinking water] is four feet per year,” Dr. Tsai said. “That’s very impressive, really. That’s dramatic. If you look back to the ground water rate of declination between 1975 to 1997, it mild – it’s probably less than one foot per year.”

The loss of fresh water is only one half of the pickle, though.

## ***MEET THE CHLORIDES***

The other side of the coin is that as salt water moves in, it mingles with the fresh water. As the city uses up more and more of the fresh water, the remaining fresh water essentially will get saltier and saltier.

The Environmental Protection Agency has established guidelines for chloride in drinking water as a National Secondary Drinking Water Regulation (NSDWR), which are non-enforceable contaminant guidelines. According to the EPA website, this class of recommended guidelines refers to contaminants that may cause “cosmetic or aesthetic effects.” In other words, there’s no real dangerous threat posed to the health of an individual drinking salt water, though eventually the water can become too salty to drink.

Aside from a terrible taste, higher concentrations of chloride in the drinking water would contribute to one’s daily sodium intake. But perhaps more importantly, chloride increases the corrosivity of water and can cause metal pipes to leach out metal particles into the drinking water.

The saltwater intrusion is progressing through the city slowly, meaning that some areas have higher concentrations of chlorides than others. The EPA’s suggested standard is 250 milligrams per liter – a level that some wells have already surpassed in Baton Rouge. According to Hay Town’s [www.SaveBrWater.com](http://www.SaveBrWater.com), Well EB-807A surpassed EPA guidelines of 250 parts per million of chlorides concentration back in 1980. As of 1990, it had reached 3300 milligrams per liter.

Meanwhile, other wells across the city are not far from reaching the threshold either.

“Our model predicts the Lula well [1,500 foot-sand] will reach two hundred and fifty before 2016,” Dr. Tsai said. “It’s very, very close and that is scary – within four or five years. That’s why Baton Rouge Water Company is worried to remedy it quickly.”

Or, to quote Executive Chairman Eugene Owen, “We’re just out of talking time.”

## ***DIGGING UP SOLUTIONS***

So far, there are a few feasible solutions on the table for Baton Rouge. First of all, the consensus is that we can always get our drinking water from the Mississippi River...after a significant amount of filtering and treatment. In fact, The Advocate reported last week that the Baton Rouge Water Company had already purchased land along the Mississippi in case the water became too salty to drink.

According to Town, converting river water to drinking water isn’t our best option.

“It would cost between two and three times as much to deliver treated Mississippi water,” he said.

The other option the Baton Rouge Water Company is pursuing is the installment of scavenger wells – wells that would extract salt water before it hits the drinking water wells at Lula and Government St.

“That’s one possible remediation approach,” Dr. Tsai said, though he noted it would only stave off the salt intrusion for another 50 years.

“To me, scavenger wells are a temporary solution,” he explained. “That well will be protected for 50 years but within those 50 years, the salt water will still come in to the aquifer. There is no way to stop the salt water from coming in – even though we reduce the concentration of chlorides in some areas.”

Another possible avenue of remediation might be to convince the industrial facilities to use river water in their processes instead of tapping into the drinking water for non-drinking purposes.

“In my opinion, it’s good to get the industrial companies to consider using more surface water, thereby reducing pumping from ground water,” Dr. Tsai said. “I think that can reduce the intrusion rate.”

Baton Rouge Citizens to Save Our Water agrees with Dr. Tsai.

“We believe its public use – for the people – should be preserved by having the industry go to the Mississippi river, where they’re located anyway,” Town said.

The Office of Conservation’s recent decision to delay a hearing until further study of the phenomenon hardly seemed like a solution to Town.

“There’s always ongoing studies,” Town said. “They’re just putting it off and putting it off. You can’t keep studying it to death.”

Town argued that it’s up to the citizenry to demand a hearing about the issue, and he encourages interested individuals to join his cause.

“People need to say they want a hearing so that they will hold a hearing. If the people don’t care, then the politicians might not care.”

**Foot-sand:** Method of referring to different aquifers based on the depth of the sand in the aquifer. For example, the 1,500 foot-sand denotes the aquifer whose sand is at a depth of 1,500 feet.

**Chloride:** Element that is measured in concentrations in water to determine the salinity of water. Remember that salt is Sodium Chloride.

**Scavenger Well:** Well that extracts salt water from the aquifer before the chloride reaches the drinking water wells throughout the city.