WATER WORRIES

LI officials fear new plans could contaminate crucial aquifer

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ANCIENT AQUIFER, MODERN PROBLEMS

Bid to pump from the purest water underlying LI prompts worries about contamination, saltwater intrusion

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The region’s purest, most protected source of drinking water could become contaminated and infused with saltwater if New York City and a Nassau County water district are able to pump from the ancient Lloyd aquifer under Long Island, local officials and experts fear.

The Lloyd, lying along the bedrock deep under geographic Long Island, already is becoming increasingly salty and unfit to drink at the edges because of overpumping to slake the human thirst for water.

Now, as New York City readies a plan to begin pumping anew from its shuttered network of Queens wells — which includes four sunk in the Lloyd — and an inland Nassau County water district attempts to become the first non-coastal community to surmount a state moratorium on drilling into the Lloyd, policymakers and experts are viewing the moves with concern.

“The Lloyd is special, it’s limited, and it should be held as a reserve for coastal communities, period,” said Sarah Meyland, director of the Center for Water Resources Management at the New York Institute of Technology in Old Westbury.

Long Island is a federally designated sole-source aquifer region, meaning the Island’s 2.8 million residents rely solely on the underground aquifer system for drinking water.

Of the three main aquifers under Nassau and Suffolk counties, the Lloyd is the oldest and deepest, with water on the South Shore more than 8,000 years old.

It’s also thought to be the purest water, largely untouched by the contamination from years of industrial and other human activity that has marred the higher aquifers — including the Magothy, the aquifer from which much of Long Island gets its water.

The Lloyd holds about 9 percent of Long Island’s freshwater, but for some coastal communities where the upper aquifers have been overwhelmed with saltwater, such as Long Beach, the Lloyd is the only source of water.

Moratorium on most wells

A 1986 state moratorium bans all but coastal communities from sinking new wells into the Lloyd. The state Department of Environmental Conservation grants exemptions only for “just cause and extreme hardship.”

The state has never granted such an exemption, although the Suffolk County Water Authority made the first serious attempt at one in 2003, seeking to use Lloyd water to dilute elevated nitrate levels in the water from its Northport wellfield.

While DEC staff and an administrative law judge recommended granting the exemption, it was denied in 2007 by then-DEC Commissioner Alexander “Pete” Grannis.

After the rejection, the water authority ended up spending $300,000 to run a line from another well to Northport instead.

“I think the real concern of the commissioner was not what we were doing in Suffolk County, but what they would do in Nassau County based on the determination he made,” said Timothy Hopkins, the water authority’s general counsel, reflecting on the Lloyd application.

This year, in the second application for an exemption since the moratorium was created, the Bethpage Water District — affected by underground contamination from the former Northrop Grumman Naval site — applied to the state to deepen one of its wells from the Magothy aquifer into the Lloyd.
“Use of the aquifer requires specific permission,” the district’s January application reads. “But with no future viability of existing Well No. 4-1, and the deteriorating water quality throughout much of the district, the Lloyd formation must now be considered as a potential water supply source.”

While the drinking water supplied to Bethpage residents is treated so it is safe to drink, Spokesman David Chauvin said, addressing the regional planning council.

The city’s plans “could potentially make the Lloyd aquifer unusable for residents of Long Beach in the future,” he said, adding: “Long Beach does not have an alternative water source.”

But even without the additional pumping, either in New York City or in Nassau, it appears that the Lloyd already may be overextended.

New research conducted by Frederick Stumm, a research hydrologist with the U.S. Geological Survey’s New York Water Science Center in Coram, appears to show that the line of saltwater intrusion — where the Atlantic Ocean pushes against the underground freshwater — in the Lloyd is much closer to the coast than previously thought, although it’s still unclear exactly where that line lies.

That points to the fact that the Lloyd aquifer likely already is overpumped, he said.

“Obviously you wouldn’t have saltwater intrusion in some of the coastal communities if the resource was managed at a level that would be sustainable,” Stumm said.

That highlights the importance of keeping the Lloyd as pristine as possible, Meyland said.

“The policy has been, given all the other water that is available to water utilities, the Lloyd is there as a backup emergency supply — especially for coastal communities that have nowhere else to go,” she said.

That was echoed by geologist and State Assem. Steve Englebright (D–Dyker Heights), who said the Lloyd — pure, ancient and in limited supply — should be kept “for a true emergency.”

“That’s our fallback,” he said.

“You’ve seen our ace in the water hole.”