

Because of the permeable soil and low-lying, relatively fast-moving aquifer in the Straight River area, retired DNR hydrologist Bob Merritt says Enbridge couldn't have chosen a worse route across this part of the state for its Sandpiper crude oil pipeline.

Merritt was involved in several major studies of the glacial outwash plain comprising the Straight River basin and surrounding areas as a DNR hydrologist, and his findings made him so passionate on the issue that he "came out of retirement" for the first time in four years to talk publically about an environmental issue.

Merritt worked for the DNR for more than 30 years, and it's not just the sandy soil that concerns him – it's the low-lying aquifer underneath.

"Because of their high degree of permeability, allowing rapid infiltration and movement, glacial outwash aquifers are some of the geologic environments most susceptible to contamination," Merritt said.

The aquifer in that area is directly connected to a number of lakes and rivers. The water moves to the east, so a pipeline spill in that area could easily mean oil in lakes, rivers, private wells and even the Park Rapids city water supply, since its wellhead protection area is near the pipeline route, Merritt said.

Adding to the potential problems are lots of agricultural wells in the area used for crop irrigation.

Those big irrigation systems could cause oil from an undiscovered pipeline leak to spread a lot further and faster eastward than it would otherwise, he said.

Pointing to various maps on his laptop computer, he described potential pipeline leaks and the high risk to groundwater, surface water, private wells and indeed the water supply for the city of Park Rapids.

"It could have devastating effects, real disastrous," he said of the proposed Sandpiper route from north to south across the very western edge of Hubbard County.

Water moves fast in the Pine Sands aquifer, as much as 6-7 feet per day, compared to a few inches per year in some aquifers.

But water flow in the underlying aquifer has to be taken into account, Willis Mattison said.

"They were damn lucky," the spill didn't occur over a fast-flowing aquifer, he added.

And there were no major irrigation wells in the area, Merritt said.

The Pine Sands aquifer under Hubbard and Becker counties is "a very sensitive aquifer," Merritt said. "The pipeline basically goes right through the middle of the irrigation well system. If there's a leak in the pipeline and a well sucks up the petroleum, it will be applied to the potato field, drain in, and be sucked into other wells, it will move towards the Park Rapids (city water supply) wells."

Aquifer water in the Straight River area can move 300 to 600 feet per day, and the big irrigation wells, which can pump 1,000 gallons per minute, "can greatly exacerbate the 600-feet per day movement by increasing the gradient," Merritt said.

Both he and Mattison said the city of Park Rapids should not have come out in support of the pipeline route.

"The pipeline actually runs into the Park Rapids wellhead protection area. They're not supposed to allow activities in wellhead protection zones that can contaminate those water supplies," Merritt said.

Mattison said it would be better to route the Sandpiper through the less permeable soils of southern Minnesota farmland.

David Barnett, a special representative to the United Association of Journeymen and Apprentices of the Plumbing and Pipe-Fitting Industry, told the Grand Forks Herald recently that opposition is rooted in anti-oil views, rather than against the pipeline itself.

"Stopping the pipeline is not going to stop the oil," Barnett said. "It's coming through on the trains."

He said the Sandpiper will create about 3,000 well-paying jobs, boost local economies and help ease crude-by-rail traffic. He added that pipelines are safer today than in the past.

From an environmental standpoint, the pipeline company could not have chosen a much worse route than the one through Hubbard County, Merritt said.

"It has the most porous soil, the fastest infiltration rates and the fastest-moving aquifer," he said. "The lakes and streams and groundwater in that aquifer are directly linked, what happens on the land is

going to happen on the lake or stream. If you contaminate one part of it, you're going to contaminate the other part too. That's why we're so alarmed at putting something in the ground – out of sight, out of mind – that can leak, that will leak, at some time in the future."

North Dakota Pipeline Company LLC, an Enbridge subsidiary, is proposing to construct the 565- to 608-mile long Sandpiper pipeline and storage facilities.

The Minnesota portion of the Sandpiper Project is about 300 miles long and will include the installation of a proposed 24-inch diameter pipeline from the North Dakota border to Clearbrook, and a 30-inch diameter pipeline from the Clearbrook to Superior, Wis.

The initial capacity of the Project will be 225,000 barrels per day into Clearbrook and 375,000 barrels per day into Superior.

About 940,000 barrels per day are now moved by rail out of the Bakken region.

To the extent practica-

ble, North Dakota Pipeline Company is proposing to have much of the route co-located with its existing pipeline right-of-way or other utility rights-of-way in Minnesota. NDPC is proposing two general pipeline routes.

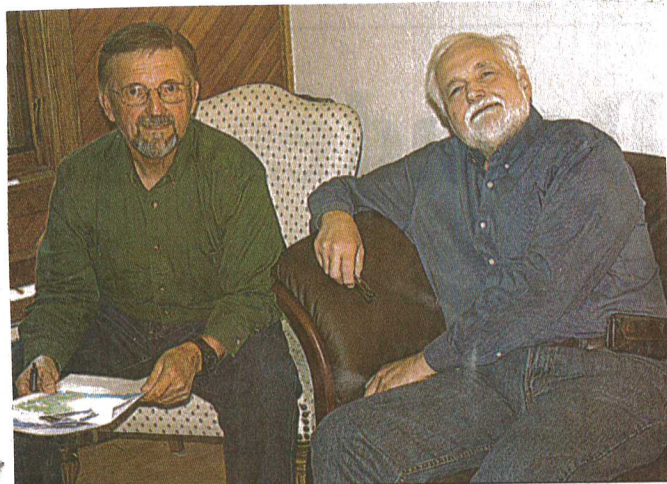
In Minnesota, both routes parallel existing rights-of-way from the North Dakota border south of Grand Forks to Clearbrook, Minn.

From Clearbrook, the northern route follows the Enbridge Energy, Limited Partnership System (Mainline) route, terminating in Superior, Wis.

The southern route deviates from the existing Mainline route at Clearbrook, going south to Hubbard, Minn., and then east to Superior.

Enbridge Energy Inc. on Tuesday said Sandpiper project won't be completed until 2017, about a year behind the company's original estimate.

The company had hoped to start construction in 2015 and have oil moving by early 2016. But those de-



SUBMITTED PHOTO

Pictured from left is former Minnesota Pollution Control Agency official Willis Mattison and former DNR hydrologist Bob Merritt at Merritt's home in Detroit Lakes. The two are concerned about the porous soil and low-lying aquifer along the proposed Sandpiper crude oil pipeline route just across the Becker County line in Hubbard County.

lays in the regulatory process – namely over how many possible pipeline routes should be studied – have led the company to re-vamp its official expectations.

