



<http://insideclimatenews.org/news/20121011/epa-dilbit-enbridge-6b-pipeline-kalamazoo-river-cleanup-tar-sands-oil-sands-keystone-xl-landowners-environment?page=show>

EPA Worries Dilbit Still a Threat to Kalamazoo River, More Than 2 Years After Spill

Enbridge needs to dredge accumulating oil from 100 acres of the river's bottom, EPA says. The work could take up to a year and cost tens of millions more.

By David Hasemyer, InsideClimate News

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A field technician cleaning oil from the Kalamazoo River on Aug. 4, 2010. Credit: Mich. Occupational Safety & Health Administration.

The hidden, long-term effects of the 2010 pipeline accident that spilled more than a million gallons of heavy Canadian crude oil into Michigan's Kalamazoo River became public last week when the EPA revealed that large amounts of oil are still accumulating in three areas of the river.

The problem is so serious that the [EPA](#) [3] is asking [Enbridge Inc.](#) [4], the Canadian pipeline operator, to dredge approximately 100 acres of the river. During the original cleanup effort, dredging was limited to just 25 acres because the EPA wanted to avoid destroying the river's natural ecology. The additional work could take up to a

year and add tens of millions of dollars to a cleanup that has already cost Enbridge \$809 million.

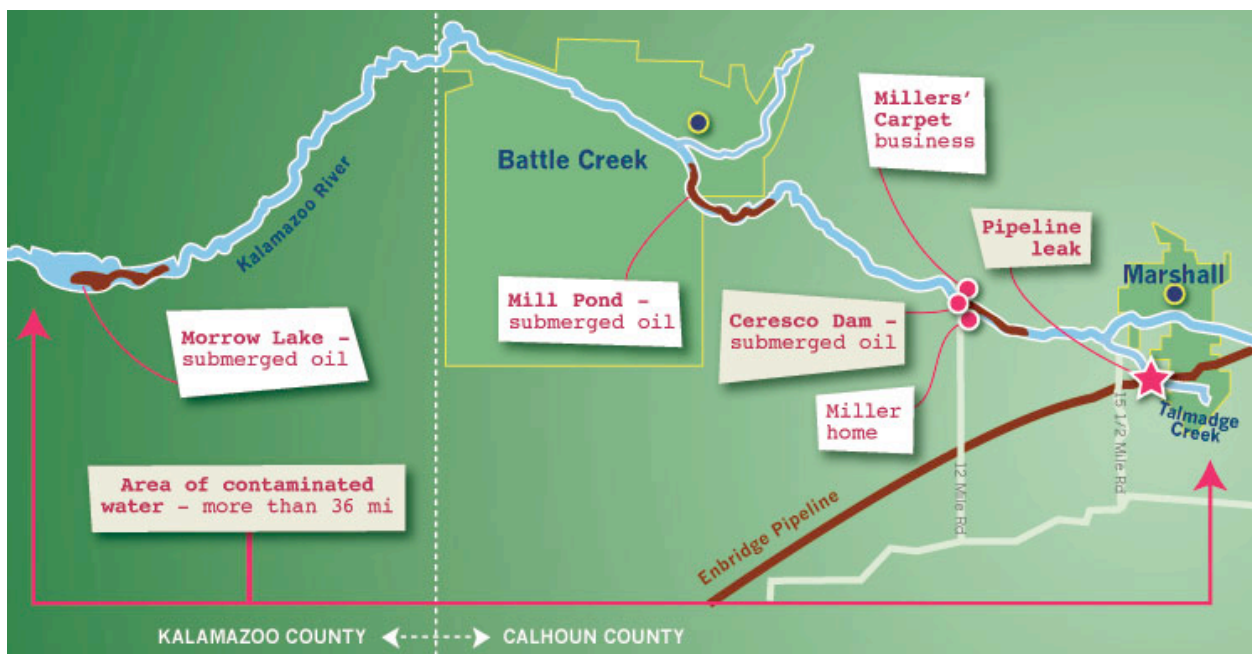
The EPA notified Enbridge of its proposed order on Oct. 3, saying the additional clean-up is "critical" and the work "should be conducted in an expeditious manner" to remove the oil before it recontaminates the river.

"The increased accumulation demonstrates that submerged oil is mobile and migrating, evidencing that submerged oil removal is warranted to prevent downstream migration ... ," Ralph Dollhopf, the EPA's on-scene coordinator and Incident Commander, said in the letter notifying Enbridge of the agency's findings.

In June an [InsideClimate News investigation](#) [5] revealed that the cleanup of the Kalamazoo has been unusually difficult, because the pipeline that ruptured was carrying [dilbit](#) [6], a mixture of heavy Canadian bitumen that has been diluted with liquid chemicals, some of them toxic. Bitumen, also known as tar sands oil, has the consistency of peanut butter and is too heavy to flow through pipelines without being thinned with chemicals. When Pipeline 6B split open, the chemicals began evaporating and the reconstituted bitumen began sinking to the river's bottom.

"More than two years after the spill of diluted bitumen, this proposed order demonstrates that EPA is still tackling the problem of how to remove the heavy oil from the Kalamazoo River," said Sara Gosman, an adjunct professor of environmental law and policy at the University of Michigan Law School.

The EPA's determination that more cleanup is needed was based on the findings of a year-long survey of nearly 6,000 locations along the 40 miles of river contaminated when pipeline 6B ruptured in July 2010. Enbridge has until next week to request a conference with the EPA to discuss the additional work and 30 days to submit written comments.



More than 36 miles of the Kalamazoo River were contaminated in July 2010, when an Enbridge oil pipeline ruptured. Despite extensive cleanup efforts, the EPA says substantial deposits of submerged oil remain at three sites. Illustration by Catherine Mann, InsideClimate News.

[Steve Hamilton](#) [7], a Michigan State University professor who was among the experts who worked on the study, said the recommendation for dredging was driven by concern that during flooding the pools of oil could break loose and recontaminate parts of the river that have already been cleaned—or flow downriver into areas that were never touched by the goeey oil.

"We will never get all of the oil out [of the river]. It's impossible," Hamilton said. "The challenge is to determine when do you get to a point of diminishing returns where the eradication is too environmentally destructive to warrant the removal."

A spokesman for the EPA said the agency would not have any comment beyond the information contained in [its proposed order](#) [8] and the [letter it sent to Enbridge](#) [9].

The EPA acknowledged in the proposed order that Enbridge had conducted substantial cleanup since the pipeline ruptured, but "despite these response actions, oil remains in the Kalamazoo River."

Enbridge did not respond to requests for comment for this story. But in [an Aug. 24 letter to the EPA](#) [10], the company said it did not believe that more dredging—especially in the area near the Ceresco Dam—was necessary.

"Enbridge's position is that we have reached a point of diminishing returns where further invasive activities would do more harm than good," Richard Adams, Enbridge's vice president of field operation in the United States, said in the letter.

"In fact, we strongly believe that such action solely for the purpose of aesthetics would both negatively impact the riverine environment and create a significant disturbance and inconvenience to local landowners and other river users."

The company also disputed the EPA's concern that oil is still pooling in the river, especially near the Ceresco Dam.

"[T]he most significant evidence of submerged oil has been sheen which, when collected, has amounted to a volume of less than 1 gallon of product in total during 2012," Adams wrote, referring to the area around the dam.

Deb Miller, who lives near the dam in the community of Ceresco said she sees rainbow sheens of oil floating on the surface when she walks along the river near the carpet store she and her husband own. Recently she ran a garden rake along the river's bottom and said that marble-sized globs of oil popped to the surface, accompanied by the sour whiff of petroleum.

"It's insane how much oil is still here," said Miller, who has testified before Congress about the spill's impact on her life.

Dilbit: The Unknown Factor

The National Transportation Safety Board [blasted Enbridge](#) [11] in July for a "complete breakdown of safety" in the 2010 disaster, which is considered the largest inland oil pipeline spill in U.S. history. [The report criticized the company](#) [12] for failing to make repairs despite knowing of the defects five years before the rupture. The Department of Transportation also imposed a record \$3.7 million civil penalty. [Enbridge paid the fine](#) [13] last month.

Enbridge has proposed replacing the entire 210-mile length of 6B from Indiana to Ontario, Canada, at a cost of \$1.3 billion. But the project has faced [resistance from landowners](#) [14] who are fighting the company's efforts to condemn their land and from lawsuits claiming Enbridge hasn't complied with all state and local regulations and environmental laws.

The study of the contaminated 40-mile section of the Kalamazoo that resulted in the EPA's directive began in 2011 and ended in August.

The EPA enlisted 14 federal, state and local organizations—including the U.S. Fish and Wildlife Service, the U.S. Geological Survey, and the Michigan Department of Environmental Quality—to perform the study as part of a Net Environmental Benefit Analysis to ensure the ongoing cleanup was sufficient and further ecological damage from the spill would be minimized.

Hamilton, the Michigan State University professor of ecology and environment, joined the team as a representative of the [Kalamazoo River Watershed Council](#) [15]. He has done extensive research on the river and its flood plain and spoke to InsideClimate News not as a representative of the EPA but as one of the individual scientists who worked on the investigation.

Hamilton said the study relied on a technique called poling, where a long pole is used to churn up the bottom of the river to see if oil or residue floats to the surface. He said the poling identified about two dozen sections of the river where enough oil remained to be of concern. With those areas in mind, the scientists used a model of the river to simulate floods equal to the high water marks of the last 100 years, five years and the highest flood mark since the spill.

They were particularly attentive to the hundred year flood levels despite the statistical improbability of such a flood occurring.

"With climate change it might be more possible than the record might indicate," Hamilton said.

The recommendation for dredging was based on factors beyond aesthetics, Hamilton said. One of the scientists' primary worries was that not much is known about dilbit.

"This kind of crude oil is a complex mix of hundreds of compounds—some known to be toxic—that has not been studied much," he said. "We just don't understand the consequences well enough."

Congress has ordered a study, which is being conducted by the National Academy of Sciences, to determine whether dilbit is more likely than conventional oil to corrode pipelines. The study isn't expected to be finished until the summer of 2013.

Three Areas at Risk

The investigators decided that "sheen management"—a technique that uses booms to contain oil floating to the surface—was appropriate for most of the sections where they found pools of oil. But they concluded that dredging was the only solution for three areas of the river between Marshall and Kalamazoo, Mich. The vulnerable areas are upstream of Ceresco Dam, upstream of the Battle Creek Dam in the Mill Ponds area, and in the delta upstream of Morrow Lake. Together, they cover about 100 acres, an area about the size of 75 football fields.

Near the Ceresco Dam, the investigators discovered the area of submerged oil had increased from 20 acres to 23.5 acres and that oil globules were floating to the surface, according to the EPA's proposed order.

Because that area was subjected to what the EPA called "highly effective" dredging in 2010, the agency concluded that additional dredging would prove successful. The earlier dredging project lasted about three weeks and crews carted away 5,500 cubic yards of oil-soaked sediment from the river bottom, enough to fill 27 semi-trailers. An estimated 14 million gallons of water was decontaminated and returned to the river.

Mill Pond, the second section of the river cited for intense cleanup, presented more of a quandary for the EPA. Some sections shouldn't be dredged, the agency decided, because the digging and scraping would do too much damage to the sensitive ecology and because the submerged oil wasn't likely to move down river.

At the third proposed cleanup site, the Delta just upstream from Morrow Lake, the investigators discovered a "substantial expansion" of the submerged oil, with the plume now covering most of the two-mile length of the delta, an area of about 55.5 acres.

Hamilton said the scientists decided dredging was needed, because floods might dislodge the submerged oil and allow it to flow into a part of the Kalamazoo River unblemished by the spill.

"It would be wise to get at it now when it's practical before it either becomes lodged in small backwater areas or migrates into areas where oil has not been previously discovered," he said.

Links:

[1] <http://insideclimatenews.org/author/david-hasemyer>

[2] <http://insideclimatenews.org/sites/default/files/DSC00024.JPG>

[3] <http://www.epa.gov/enbridgespill/>

[4] <http://www.enbridgeus.com/>

[5] <http://insideclimatenews.org/news/20120626/dilbit-diluted-bitumen-enbridge-kalamazoo-river-marshall-michigan-oil-spill-6b-pipeline-epa?page=show>

[6] <http://insideclimatenews.org/news/20120626/dilbit-primer-diluted-bitumen-conventional-oil-tar-sands-Alberta-Kalamazoo-Keystone-XL-Enbridge>

- [7] <http://www.zoology.msu.edu/all-faculty/stephen-hamilton.html>
- [8] <http://www.documentcloud.org/documents/454566-20121003-proposed-order-for-removal.html>
- [9] <http://www.documentcloud.org/documents/454564-20121003-cover-letter-re-proposed-order.html>
- [10] <http://www.documentcloud.org/documents/459208-enbridge-letter-to-epa.html>
- [11] <http://www.nts.gov/news/2012/120710.html>
- [12] <http://www.documentcloud.org/documents/408340-nts-6b-final-report.html>
- [13] <http://www.freep.com/article/20120911/NEWS05/309110050/Enbridge-pays-3-7M-penalty-in-10-oil-spill>
- [14] <http://insideclimatenews.org/news/20120912/enbridge-6B-oil-pipeline-michigan-public-services-commission-dilbit-kalamazoo-brandon>
- [15] <http://www.kalamazooriver.org/>
- [16] <http://insideclimatenews.org/news/20121002/enbridge-6b-pipeline-michigan-grassroots-landowners-eminent-domain>
- [17] <http://insideclimatenews.org/news/20120821/dilbit-disaster-insideclimate-news-new-york-times-op-ed-enbridge-oil-sands-canada-pipelines-safety-nts-keystone-xl>
- [18] <http://insideclimatenews.org/news/20120626/dilbit-diluted-bitumen-enbridge-kalamazoo-river-marshall-michigan-oil-spill-6b-pipeline-epa>
- [19] <http://insideclimatenews.org/topic/6b-pipeline>
- [20] <http://insideclimatenews.org/special-focus-topics/dilbit-disaster>
- [21] <http://insideclimatenews.org/topic/enbridge>
- [22] <http://insideclimatenews.org/reuters-topics/green-energy>
- [23] <http://insideclimatenews.org/topic/kalamazoo-river>
- [24] <http://insideclimatenews.org/topics/tar-sandsoil-sands>
- [25] <http://insideclimatenews.org/topics/epa>
- [26] <http://insideclimatenews.org/topics/water-and-oceans>
- [27] <http://insideclimatenews.org/about/comment-policies>
- [28] <http://insideclimatenews.disqus.com/?url=http%3A%2F%2Finsideclimatenews.org%2Fnews%2F20121011%2Fepa-dilbit-enbridge-6b-pipeline-kalamazoo-river-cleanup-tar-sands-oil-sands-keystone-xl-landowners-environment>