http://insideclimatenews.org/news/20120628/dilbit-disaster-diluted-bitumen-oil-spill-enbridge-6b-michigan-epa-kalamazoo-river?page=show

The Dilbit Disaster: Inside The Biggest Oil Spill You've Never Heard Of, Part 3

'Hearing the oil being described as a totally different product knocked my feet out from under me,' Miller recalls. 'What else have they lied to us about?'

By Elizabeth McGowan and Lisa Song, InsideClimate News Jun 28, 2012

Response operations near the source of the spill on Talmadge Creek near the Kalamazoo River, Aug. 1, 2010. The EPA first estimated that the cleanup would take two months, but more than 35 miles of the river remained closed to the public for almost two years. Credit: EPA

This is part 3 of a three-part series. You can read it all on an eBook, [2] or read part 1 here [3] and part 2 here [4].

As the fall of 2010 approached, John LaForge could still smell tar when he drove by his old house with the windows of his truck rolled down.

LaForge had lost hope that he and Lorraine would someday return to the house on Talmadge Creek where they had raised four children. Tire tracks from heavy equipment had scarred and muddied the lawn LaForge once tended so carefully.

The cleanup of North America's biggest dilbit pipeline spill was behind schedule and LaForge's property in southwestern Michigan, about a quarter mile from where an Enbridge pipeline had split open on July 25, was ground zero. More than 2,050 workers had flocked to Marshall, a community of 7,400. Parking was such a hassle at Kate's Diner, where he ate breakfast before work, that he worried regulars would stop patronizing the restaurant.

LaForge began negotiating with Enbridge for the company to buy his property. In September, he and Lorraine, along with their daughter and her three young children, left the two hotel rooms they'd shared for 61 days and rented a house while they looked for a place to buy. Enbridge footed the $12,000 hotel bill and agreed to pay their rent. All

the moving was taking a toll on Lorraine. She was still recovering from the emergency gallbladder surgery she'd undergone while they were living in the hotel.

The LaForges salvaged photographs, dishes and hardwood furniture from their home of 28 years. But the oil stink had permeated their mattresses, clothing, books, toys, rugs and upholstered furniture. They left it all behind."How do you replace your granddaughter's little dress from her first day in kindergarten?" LaForge said, looking back on that difficult transition. "You put your sweat and heart into a place and then somebody comes along and destroys it. It's painful."

The spill was adding stress to Deb Miller's life, too.

She and her husband, Ken, finally re-opened their carpet and flooring store in October, two months after the spill forced them to shut it down. They had no intention of selling their house or business, even though both buildings were located near Ceresco Dam, another focal point of the cleanup. Enbridge offered to pay their rent if they temporarily relocated their business, but the offer didn't cover the cost of moving their inventory. The Millers said no. Instead, they accepted an "inconvenience" payment for lost income.

Watching the cleanup drag on was turning Miller into an activist. Her bout with breast cancer had sensitized her to health issues, and she feared that the toxicity of the oil might have jeopardized residents and emergency responders in ways that scientists didn't understand. She filled a three-ring binder with 8-by-10 color photographs documenting the mess at the dam and carried it to meetings and strategy sessions with neighbors.

"First responders are our neighbors, our dads and our brothers," she said. "What training were they provided? Our local agencies were tasked with responsibilities they were in no way equipped to handle."

In mid-September, Miller took her photos to Washington, D.C., where she and five other Calhoun County residents testified before the House Transportation and Infrastructure Committee. The chairman, Jim Oberstar, was a Democrat from Minnesota, where another section of Enbridge's Lakehead pipeline system is located. Two representatives from Michigan served on the committee: Mark Schauer, a Democrat who represented the Marshall area, and Candice A. Miller, a Republican from the eastern part of the state. (Candice Miller is not related to Deb Miller.)

It was Deb Miller's first trip to the nation's capital. She was nervous, but determined to be heard. She labored almost three weeks on her 19 pages of testimony. Congressional staffers had told Miller and her neighbors to "write from the heart."

"I knew I had to do what I had to do," she said recently. "My message was that I'm not going away. We told our stories because somebody had to put a face on what the impact of this spill was."

The Sept. 15 hearing in the Rayburn House Office Building lasted seven hours. EPA Administrator Lisa Jackson was among the witnesses. So were National Transportation Safety Board Chairman Deborah Hersman and Enbridge CEO Patrick Daniel.

Miller sipped water to control the nagging cough she'd had since the spill.

"I was an innocent bystander," she said [5] when it was her turn to sit behind a microphone and address the committee. "I did not choose to breathe that foul air. I did not choose to lose a summer to … vacuum trucks, fan boats, and helicopters and strangers on my riverbank, not to be able to utilize our pool in our back yard for lack of privacy. I did not choose to close my business, and I certainly did not choose to watch the geese struggle while covered in oil. Enbridge made that decision for me.

"I sincerely hope this spill will ensure that you (Enbridge) will be more responsible with the maintenance of all of your pipelines, even if it means replacing them all," she added. "I pray they will remain closed until that can be determined how safely to restart them."

Another Calhoun County resident, Michelle BarlondSmith, told the committee that when she and other residents of a Battle Creek trailer park sought health care for spill-related symptoms, an Enbridge representative told them they had to sign a waiver form [6]. They later learned that the form gave the company access to their entire medical histories.

The trailer where BarlondSmith lived with her husband, Tracy, was just 200 to 300 feet from the oiled river, she told InsideClimate News. They spent several weeks at a hotel to escape the stench, which she said made her feel dizzy and sick to her stomach.

In a transcript of the testimony, Schauer, the representative from Battle Creek, asked BarlondSmith [7] if she was comfortable with the company having access to her medical records.

Ms. BARLONDSMITH: To be very frank with you, one of the side effects that you have with this is you do not think clearly… I read over it twice very quickly. I gave it to my husband. He glanced at it because he was going to go to the doctor also.

Mr. SCHAUER: He is not an attorney, I take it, or a health care provider?

Ms. BARLONDSMITH: Unfortunately, he is not an attorney and I wish he was. But I signed it because I was told if you wanted to see the doctor, you must sign this.

Schauer grilled Daniel [8], the Enbridge CEO, about the medical release form. Schauer and Oberstar had sent a letter [9] to Daniel on Sept. 1, demanding that Enbridge stop asking uninsured residents to sign the waiver.

Mr. SCHAUER: So have you stopped the use of this form?

Mr. DANIEL: I don't know that offhand. I can get back to you and confirm that.

Mr. SCHAUER: Well, and I also request—and I think I requested this in writing—that you rescind all of those that have been signed. Would you agree to do that?

Mr. DANIEL: Yes.

Mr. SCHAUER: Thank you.

Rep. Candice Miller pressed Daniel [10] about a defect on a section of 6B in her district where the pipeline is buried under the St. Clair River, a vital drinking water source for northern Michigan.

The dent had been identified in August 2009 and was serious enough to meet PHMSA's criteria for repair within 60 days. But 11 months later, it still wasn't repaired. And Miller wanted to know why.

In his testimony, Daniel explained [11] that because "the site is very difficult to access," Enbridge decided to lower the operating pressure while conducting "a comprehensive engineering assessment."

"The likelihood that that dent will cause a leak is very remote," he assured the committee. "It is smooth, without evidence of corrosion or cracking. The pipe at that point is twice as thick as normal and is protected by concrete and engineered gravel. Nonetheless, Enbridge is committed to replacing or repairing that segment of pipe, and we will submit our proposed plan to the regulator by the end of this month."

Daniel also reiterated the promise he had made so often since he arrived in Michigan the day the spill was detected.

"I am personally committed and our company is committed to doing everything that we can to make up to the people in Marshall and Battle Creek for the mess that we made,"Daniel said [12]. "We are working very diligently to meet the September 27th deadline for cleanup of the spill, in conjunction with the EPA and all of the coordinating agencies… You have my commitment that we will be there to make your constituents happy that we have done the right job."

When Deb Miller's plane landed in Michigan that night, she was almost giddy after watching how committee members held Enbridge accountable.

"I'm not naïve enough to think that everything would be resolved that day," she said. "But I walked out of there with a ray of hope that maybe somebody was listening."

But Miller was scared, too. She'd always assumed that the oil that was polluting the river in her back yard was ordinary crude. But in casual conversations away from the microphone that day, people had called it "diluted bitumen," a term she'd never heard before.

"Hearing the oil being described as a totally different product knocked my feet out from under me," Miller recalled. "My first reaction was to cry. Then I wondered, 'What else

have they lied to us about?' To this day, that is why I am so frustrated with EPA and Enbridge. Nobody knocked on my door and told me I was in danger."

Miller wasn't alone with her fears.

By early September, local residents had dialed the hotline Enbridge set up the day of the spill at least 9,400 times. The hotline, as well as the county health office, local hospitals and the Poison Control Center, had been flooded with questions about what harm the stinky air might be causing.

A survey [13] of four riverside communities that the Michigan Department of Community Health conducted within a month of the spill found that almost 60 percent of the 550 people interviewed experienced headaches, breathing difficulties, coughs, vomiting, anxiety or other health problems.

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The federal Pipeline and Hazardous Materials Safety Administration allowed Enbridge to reopen pipeline 6B on Sept. 27, two months after the massive spill. The agency limited it to pumping 10.2 million gallons per day instead of 11.3 million gallons per day. But Enbridge was back in business.

The cleanup wasn't proceeding as rapidly.

Enbridge missed its Sept. 27 EPA deadline—the one that required it to rid the creek, river and shorelines of all oil. A new deadline was set for Oct. 31.

Close to 30 miles of boom was now positioned along the river. But more oil kept turning up. It saturated soil and plants along the floodplain. It contaminated small islands along the river. It was embedded in up to six inches of underwater sediments.

"I truly believe the characteristics of this material is the reason we still have such a heavy operation out here," Mark Durno, the EPA deputy incident commander, told Michigan Public Radio. "Because it was a very heavy crude, we ended up with a lot more submerged oil than we anticipated having to deal with...If you'd shovel down into the islands you'd see oil pool into the holes we'd dig."

Durno had become a fixture at Pastrami Joe's, a popular deli. Twelve- and 16-hour workdays meant he stayed in touch with his wife and two young children back in Ohio with text messages and brief phone calls. Every day, his wife e-mailed him photos of the home remodeling project they had begun about the time of the spill. The way the cleanup was proceeding, he figured he wouldn't be leaving Marshall any time soon.

Federal regulations require culpable parties—in this case Enbridge —to restore waterways to their pre-spill state. But how was the company going to remove every bit of submerged oil from 36 miles of the river when it hadn't even been able to thoroughly clean more than two miles of Talmadge Creek?

Tracking and removing the transient blobs of bitumen that had sunk to the bottom of the river was especially frustrating.

In October, the EPA directed Enbridge to experiment with dredging a three-acre area above the Ceresco Dam, which was inundated with oil. Crews operating excavators dug for about three weeks and carted away 5,500 cubic yards of oil-soaked sediment, enough to fill 27 semi-trailers. They also removed, decontaminated and then returned 14 million gallons of water to the river.

They managed to extract the bulk of the oil. However, that brutal but efficient operation wasn't an option elsewhere on the oiled river. All of that gouging would destroy fish habitat and ruin underwater beds where mussels feed and breed.

Other traditional cleanup methods were also proving harmful.

Ripping out oil-coated islands and oil-ravaged logs and plants deprived fish of vital shelter. And the steady beat of waves caused by so many boats on the water eroded the banks where muskrats and beavers burrowed for shelter.

Gradually, everybody agreed that they had to treat the river as a living organism, not as an entity to be conquered.

Enbridge began developing more gentle techniques. Workers on foot, in boats or in marsh buggies used rakes with metal tines, rototiller blades, chain drags or air- and water-spraying wands to gently agitate the oil by hand. Then they vacuumed it up or collected it with nets, booms and absorbent pads.

On average, the Kalamazoo is only about three feet deep, so instead of always using boats with standard engines that could tear up the shallow river, Enbridge brought in flat-bottomed "airboats" powered by raised aircraft-type propellers and engines.

Progress was slow. Nobody was surprised when Enbridge failed to meet the EPA's Oct. 31 deadline for removing all submerged oil from the river. A few days later, the company increased its estimate [14] of how much oil had spilled from 6B, from 819,000 gallons to 843,444 gallons.

But the news wasn't all grim.

On Nov. 5, Jim Rutherford, Calhoun County's public health officer, announced that people who lived near the river could once again drink and cook with their well water. No pollutants had been found, although the testing would continue.

Despite this reassurance, Deb Miller stuck with the bottled water. Instead of cooking her family's Thanksgiving dinner in Ceresco, she moved the celebration to her younger daughter's house a few miles away.

By this time, Enbridge also had managed to skim, vacuum and sop up most of the visible oil in the creek and river. It was a small step in the right direction, even though everybody was sure oil remained hidden in the waterways and floodplain.

EPA supervisors knew that Enbridge's first attempt to totally purge the creek of oil was a stopgap measure.

"It's kind of like doing an initial surgery," Ralph Dollhopf, the EPA incident commander, said about that effort. "It's done to get the gross amount of oil and get the situation stabilized. We knew residual oil would be identified afterward and we'd have to come back to meet long-term requirements."

The cleanup ramped down for the winter. By mid-December, only about 200 workers were on-site.

Before the year ended, Enbridge announced that it had been able to recycle 766,288 gallons of oil recovered from the spill site. Instead of sending it to a landfill, the company was able to return it to the pipeline terminal in Griffith, Ind., where it was again pumped through 6B.

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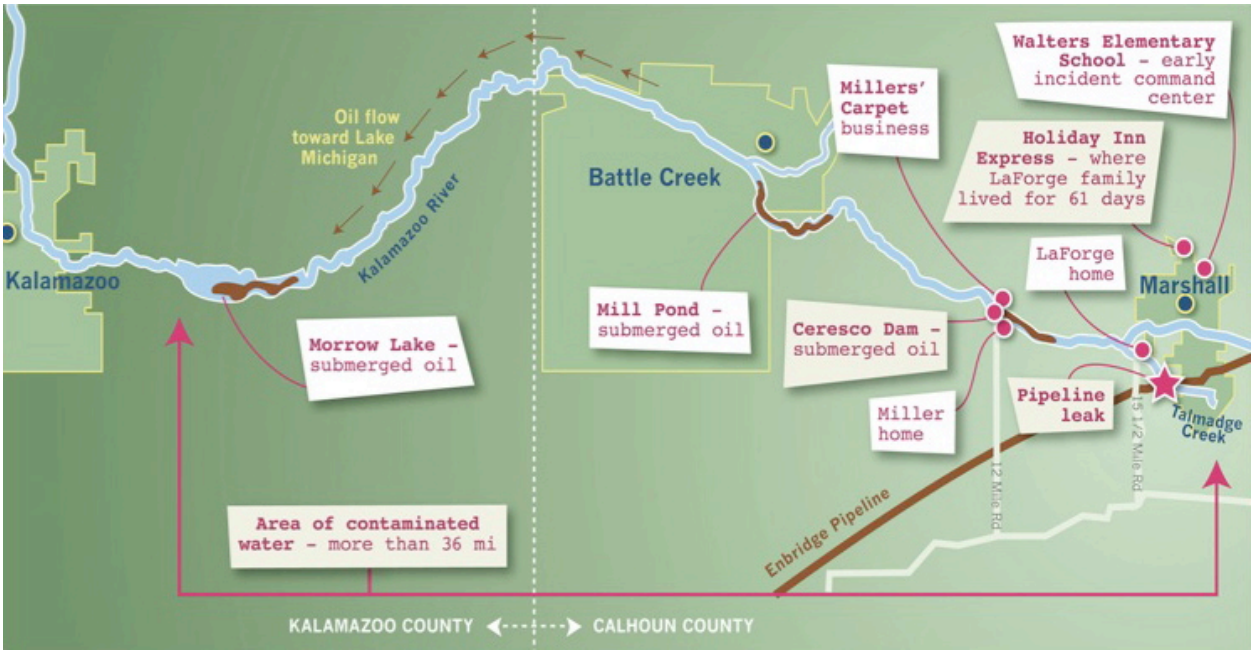
In the spring of 2011, teams of scientists continued the tedious process of mapping the submerged oil. The digital snapshot that emerged confirmed their fears. Tar balls the size of marbles were still piling up in low spots on the river bottom.

Roughly 200 acres, an area about the size of 150 football fields, were still tainted with oil.

Three landmarks were identified as "oil magnets." One was above Ceresco Dam, next to the Millers' business, where they had dredged in October. The second was near the dammed Mill Pond in Battle Creek. The third was at the delta of Morrow Lake, where the river flows into a dammed recreation area before it reaches the city of Kalamazoo.

Click on map to enlarge



Map of the rupture site and Kalamazoo River. Illustration by Catherine Mann for InsideClimate News.

"The submerged oil is a real story, it's a real eye-opener," the EPA's Mark Durno told the Natural Resources Defense Council's OnEarth magazine. "In larger spills we've dealt with before, we haven't seen nearly this footprint of submerged oil, if we've seen any at all."

They were back to the problem they had started with: How would they tackle submerged oil that was a moving target?

John Sobojinski, the engineer who had supervised Enbridge's operation in Marshall since November 2010, said beating the river to death didn't make sense.

"You would have to run bulldozers and excavators down 38 miles of river and take out everything to get every last bit of oil," Sobojinski said. "The river would never recover."

Enbridge and the EPA devised a new plan that Dollhopf described as the "locate, clean up and repeat" approach. Instead of trying to scour the entire river bottom, they would let the tar balls roll into the three spots the scientists had pinpointed as oil magnets. As the tar balls accumulated, they'd go in and extract them. It was frustrating to have to wait out the oil, but the evolving science supported their patience.

"At a minimum, we're writing a chapter in the oil spill cleanup book on how to identify submerged oil," was how Dollhopf described the challenges they faced. "We're writing chapters on how it behaves once it does spill (and) how to recover it."

In some areas, Enbridge continued using the gentler cleanup techniques it had developed in the fall of 2010 to capture underwater oil. But elsewhere crews also tried a more mechanized—and harsher—approach to agitate and collect the dilbit. They fitted excavator buckets with rototiller blades, pulled chain drags and air- and water-spraying wands and rototiller blades behind boats, and equipped pontoon boats with excavators that could pull chain drags.

In June 2011, the EPA gave Enbridge a new deadline: Finish the river cleanup by Aug. 31. But the company missed that deadline, too. More than 800 workers remained on the job.

The EPA's Susan Hedman no longer sounded so optimistic. "Capturing and cleaning up this heavy oil is a unique challenge," she told reporters [16] a year after the cleanup began. "No one at the EPA can remember dealing with this much submerged oil in a river."

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As the cleanup slogged on, the people of Marshall were growing accustomed to the presence of the workers and the economic benefits they brought to their little community, which bills itself as the "City of Hospitality." Hotels were often full and workers were spending money at the Stagecoach Inn, the Dark Horse Brewery and Schuler's Restaurant and Pub, a historic landmark downtown.

Enbridge—whose slogan is "Where Energy Meets People"—tried to solidify that feeling of goodwill by donating money to an assortment of causes.

The company upgraded a park near Battle Creek that had been closed by the spill and paid for a new bridge between the park and a large river island. It built fishing and boating piers at five other recreational sites and set up an endowment fund to maintain them. It donated $100,000 to the Calhoun County Trailway Alliance's hiking trail project and promised another $100,000 if the alliance raised matching funds.

Other gifts included $45,000 to United Way branches in Marshall, Battle Creek and Kalamazoo, $50,000 to the Marshall school district and $20,000 to the county fairgrounds.

Most people appreciated Enbridge's efforts. The vice president of a local conservation club, which received about $25,000 from the company, said that [17] despite the tragedy of the oil spill he thought Enbridge was "really attuned to the environment."

A woman who accepted what she described as Enbridge's "generous offer" to buy her home on Talmadge Creek said "Everything they did was a class act. Everything."

Others, including Deb Miller, viewed Enbridge's generosity as a public relations gimmick.

"People say, 'Well, Enbridge is trying its best,'" Miller said while standing on the porch of her carpet business overlooking the river. "Well, maybe its best isn't good enough. There's no end in sight. What's going to happen 10 years from now if the oil is still in the river?"

In October 2011, Enbridge CEO Patrick Daniel was named [18] "Canada's Outstanding CEO of the Year." In a statement announcing the honor, the president and CEO of Caldwell Partners, the law firm that founded the award, described Enbridge as "an exceptional community supporter having invested in hundreds of charitable and non-profit organizations across Canada and the United States."

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On an unseasonably warm day in November, John LaForge drove with an InsideClimate News reporter past his old house near Talmadge Creek. Using money from his settlement with Enbridge, he had built a new house—as well as pole barns for his excavating and garbage-hauling businesses—four miles away. The family had moved in over the summer.

LaForge said he felt his settlement with Enbridge had been a fair one. But he still winced when he saw the cracks crisscrossing his once-immaculate concrete driveway—and when he noticed that someone had cut down the flowering crabapple he and his wife had planted in memory of their son, Justin, who died in a car accident at the age of eight.

From the vacant house he drove to a nearby neighborhood of ranches, colonials and luxury homes that had been built along the Kalamazoo over the last several decades. He had excavated some of the basements.

As he navigated the long horseshoe-shaped road, he periodically pointed to empty houses that Enbridge now owned.

"People make jokes that we live in Enbridgeville because they've bought everything," LaForge said. "They don't realize what people went through. That company thinks money can buy anything."

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With another winter approaching, the Enbridge workforce tapered off to about 450. The focus would be on meeting EPA's new deadline for the creek cleanup: March 31, 2012.

The only way to be sure the creek would be oil-free, was to strip away the contaminated stretch, a little more than two miles. Essentially, crews would be building a creek from scratch. Dredging—the technique they'd considered too severe for the river—made sense here.

Contractors pieced together mazes of corduroy roadways and navigated their excavators, front-end loaders, graders and dump trucks along the floodplain. Then they scraped the oily creek bed and its banks down to the bone, scooping out 21,578 cubic yards of dirt. Finally, they hauled in tons of "new" dirt, shaping it to follow the path the creek had traveled before the spill.

When they finished, the water ran as clear as ever through the reinvented portion of the creek. The only hint that something traumatic had occurred were the yards of landscaping cloth and erosion control blankets spread out to protect the newly planted native grasses and other vegetation. Tiny trees planted during the mild winter were already sprouting new roots.

Enbridge met the March deadline. And Jay Wesley, the fish expert with the Michigan Department of Natural Resources who has spent 16 years studying the watershed, was confident the creek would bounce back.

The only question was how long it would take Mother Nature to right herself. In 2000, a survey found 11 species of fish and 192 individual fish in that segment of the creek. A few weeks after the spill, Wesley and other natural resource specialists had counted just three species of fish and 53 individual fish.

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On April 18, 2012—21 months after 6B ruptured—the first mile of the tainted section of the Kalamazoo River was opened to the public for boating and swimming. Jim Rutherford, the Calhoun County health director who had called for a voluntary evacuation after the spill, was also responsible for making this decision.

To celebrate their accomplishment that day, the EPA's Durno and a dozen other federal, state and local officials climbed into kayaks and paddled the cleaned-up portion between Perrin Dam and Saylor's Landing.

Durno, who takes a dip in Lake Erie every New Year's Day when he's home in Cleveland, wore his wetsuit. He slipped out of his kayak and swam for a few minutes in the 60-degree water.

Durno said he didn't see or smell any oil during his swim. But neither he nor anyone else involved in the cleanup suggests that all the oil is gone.

Technically, restoring the river to pre-spill conditions would mean removing every last tar ball, no matter the cost. But scientists have realized for months that would be foolhardy.

"Do we sterilize the river and destroy its ecology to restore it?" asked Durno. "That's the key question."

Teams of specialists using poles are now doing another survey, their third, to determine how much oil remains in the river's bottom. The results won't be in for a few weeks, but

the EPA's Dollhopf said they are "definitely seeing significant reductions from last year and the year before."

To plan their next steps, the scientists and the cleanup experts have sliced the river into ecological sections according to patterns of oil contamination, types of wetlands, and species of animals, plants and trees. Each section will be cleaned with the technology that works best for its unique situation. Heavily oiled sections might be tackled with more intrusive methods. Lightly oiled areas may be treated with nothing more than some bundles of pine and fir trees placed underwater to trap the tar balls that are still bouncing along the river's bottom.

"Some of those scenarios may involve leaving oil behind, so it's unlikely that every last drop of oil will be removed," said Dollhopf, who still works out of the cluster of temporary trailers near the rupture site, where the cleanup command post has been housed since the fall of 2010. "We don't want to cross over the balance point of the benefits of oil removal and the harm of oil recovery. We always have to weigh that."

On June 21, Rutherford opened about 34 more miles of the river. The only section that's still closed is a small stretch at the delta of Morrow Lake, which is marked off with buoys. The EPA estimates [19] that 1,148,229 gallons of oil have been recovered so far. Enbridge still maintains that its ruptured pipeline released only 843,444 gallons.

Rutherford said the water in the open section of the river now meets all necessary health and safety requirements. A study by the Michigan Department of Community Health said people who come into contact with the oil might suffer some skin irritation, but they won't experience long-term health problems.

Information kiosks at ramps along the river are now stocked with brochures citing that study and telling people what to do if they see or touch oil. The kiosks also have disposable wipes for removing oil from skin or boats.

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After three and a half years of deliberating about whether to repair or replace 6B, Enbridge recently asked the Michigan Public Service Commission for permission to replace the line and almost double its capacity. Replacing 6B through Michigan and Indiana will cost close to $1.9 billion. It will be 36 inches rather than 30 inches wide in most places and capable of pumping up to 21 million gallons of oil per day.

The expansion is needed, Enbridge says, to meet the growing demand of U.S. refineries for cheap Canadian dilbit.

Researcher Lisa Schwartz and InsideClimate News intern Kathryn Doyle contributed to this report.

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[19] http://insideclimatenews.com/news/20120611/Enbridge-oil-spill-michigan-Kalamazoo-tar-sands-epa-ntsb-6b
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