

The Bakken Boom: East Coast At Risk

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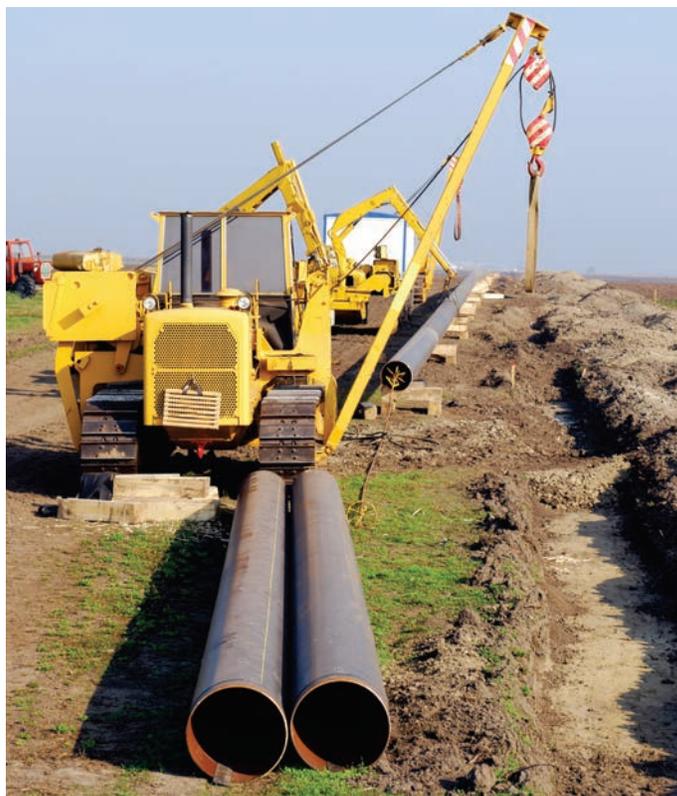
Hydraulic fracturing (fracking), an energy extraction method that injects large quantities of water, sand and chemicals under high pressure to crack the rock and release oil and gas,¹ has caused a surge in domestic oil production.² Fracked oil from the Bakken Shale has put North Dakota at “the center of a revolution,”³ now yielding more oil than Alaska and rising to second place for production behind Texas.⁴ But, as production soars, so does the demand for pipelines, trains and barges to transport Bakken crude oil to refineries,⁵ increasingly on the East Coast,⁶ the most densely populated region of the United States.⁷

Although fracking for shale oil is not occurring in New Jersey or New York,⁸ residents of these highly populated states, and the natural resources that they rely on, are still subject to spills and explosions, as Bakken oil currently enters the region by train and barge. The risk of disaster will only increase if the proposed Pilgrim Pipeline is allowed.

Transporting Bakken Crude: Potential Safety and Health Hazards

Short-term exposure to crude oil can cause difficulty breathing, headaches, nausea and skin irritation⁹; long-term effects include damage to the liver, kidney, respiratory, reproductive, blood, immune and nervous systems, as well as cancer and birth defects.¹⁰

Significantly, Bakken crude oil is more dangerous to transport than other types of crude oil. Its composition, including more combustible gases and higher vapor pressure,¹¹ makes it more volatile and flammable.¹² Thus, when Bakken crude is jostled in train cars, it is more prone to explosion.¹³ Bakken crude also contains higher levels of benzene than other crude oils, as well as potentially problematic levels of hydrogen sulfide gas.¹⁴ Benzene is a known carcinogen and mutagen that causes a variety of diseases, including leukemia.¹⁵ Exposure to hydrogen sulfide, a noxious, colorless gas described as having a “rotten egg” stench at low concentrations,¹⁶ can cause respiratory problems, nausea, vomiting, headaches, difficulty breathing, coma, convulsions and death.¹⁷



With the uncertainty surrounding pending proposals for new pipelines and/or existing pipeline expansion,¹⁸ and an outdated existing pipeline network,¹⁹ oil companies are turning to rails and barges to move their dirty products.²⁰ The typical lifespan

of petroleum pipelines is 50 years, with the potential to last longer if adequately maintained and upgraded.²¹ Considering that the majority of America's existing pipeline infrastructure was built between 40 and 60 years ago, there is concern about pipeline integrity as oil production increases.²² Despite claims that pipelines are the safest way to move crude oil,²³ increased pipeline development can cause environmental and public health problems for nearby communities.

A Pipeline of Problems, Coming to New Jersey and New York

Oil and gas development can substantially reduce the value of real estate and land while increasing the risk of leaks and explosions.²⁴ More than 10,000 pipeline incidents have occurred in the United States since 1993, including about 6,000 from petroleum pipelines.²⁵ In fact, one of the worst and most expensive oil spills in U.S. history came from a pipeline failure. It occurred in July 2010 when a pipeline ruptured near a tributary of Michigan's Kalamazoo River, spilling as much as 1 million gallons of tar sands crude. The clean-up cost almost \$1 billion, and the spill devastated sensitive ecosystems and impacted people who live in nearby communities.²⁶

Pilgrim Pipeline Holdings has proposed building a pipeline to transport Bakken crude from Albany, New York to a refinery in Linden, New Jersey²⁷ — the most densely populated state in the country.²⁸ The pipeline is proposed to travel through the Highlands, a region that provides drinking water to more than 5 million people, and would come close to the Jersey City Reservoir, a water body used for recreational fishing.²⁹

When an aquifer is polluted by oil, the impacts can endure. For instance, despite efforts to clean up an oil spill that polluted a Minnesota aquifer in 1979, the water still wasn't safe to drink 17 years later because levels of benzene, toluene, ethylbenzene and xylenes still exceeded safety limits established by the U.S. Environmental Protection Agency.³⁰ If a spill were to contaminate the Ramapo River Aquifer, a drinking water source beneath the anticipated route of the Pilgrim Pipeline,³¹ it could likewise take decades before the water is safe to consume. Additionally, if vapors from an oil-contaminated aquifer migrate to the surface, there could be an explosion or fire.³²

Yet our current regulatory framework does not allow for adequate assurance of the safety of our nation's pipelines. In terms of government oversight, only 400 federal and state inspectors are charged with monitoring our country's 2.5 million miles of pipelines and ensuring their safety.³³

Exploding Trains, Albany At Risk

The oil boom has significantly increased the amount of crude oil transported by rail.³⁴ The number of carloads used to transport oil spiked by more than 6,500 percent from 2005 to 2013.³⁵ According to the North Dakota Pipeline Authority, 75 percent of Bakken oil leaving for refineries leaves by train.³⁶



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Of this oil, approximately a quarter ends up in Albany, a “hub” because of its port, rail network and proximity to East Coast refineries.³⁷ As of February 2014, only about 20 percent of the hazmat tank cars used to transport crude oil and other flammable liquids had been built to the latest safety standards.³⁸ Even with improved safety standards for railcars, Bakken crude remains highly volatile, and this puts Albany in grave danger.

Described as a “ticking time bomb” by Senator Charles Schumer (D-NY),³⁹ train derailments have already occurred in the Albany region,⁴⁰ and one significant accident could devastate Albany. For example, in July 2013, explosions swept through Lac-Mégantic, a small town in Québec, after a 72-car train transporting close to 2.2 million gallons of Bakken crude oil derailed, killing 47 people and spilling 26,385 gallons of oil into the Chaudiere River.⁴¹ Such an accident would be devastating to New York's state capital, which has a population density almost six times that of Lac-Mégantic.⁴²

Barges of Bakken Oil Along the Hudson

Barges are able to carry extremely large amounts of cargo, so when accidents occur, thousands of gallons of crude oil can be released directly into waterways. For example, on January 27, 2013 in Vicksburg, Mississippi a barge struck a railroad bridge

and spilled about 7,000 gallons of crude oil into the Mississippi River.⁴³ A little over a year later, in February 2014, an accident caused a barge to spill 31,500 gallons of crude oil into the Mississippi River, between Baton Rouge and New Orleans.⁴⁴

About 25 million gallons of Bakken crude oil is transported by barge and ship on the Hudson River each week, amounting to some 2.8 billion gallons a year.⁴⁵ In December 2012, a tanker carrying 12 million gallons of Bakken crude lost control and ran aground on rocks in the Hudson River, just south of Albany, while en route to New Brunswick, Canada.⁴⁶ The accident did not cause a spill in the river, but it serves as a wake-up call. If the next such accident leads to a spill, millions of gallons of Bakken crude could flow downstream, and the resulting vapors could lead to headaches, dizziness, nausea and vomiting in communities along the river.⁴⁷

Train, Barge or Pipeline: No Good Methods of Transportation

Pipeline spills release much larger amounts of oil than spills from any other mode of transport.⁴⁸ Undetected spills, from inadequate detection systems or as a result of monitoring

personnel's failure to identify a rupture, can enable a spill to go for hours or even days,⁴⁹ posing serious risks to drinking water. Oil train wrecks have caused massive explosions,⁵⁰ and oil barges put major bodies of water at risk in the event of a spill.⁵¹ Fortunately, the opposition to the Pilgrim Pipeline is growing, with communities in northern New Jersey passing resolutions in opposition to this fracked oil pipeline.⁵²

Allowing the build out of sprawling pipeline infrastructure would lock in decades more of U.S. dependence on dirty fossil fuels. While crude transport by rail and barge may be less binding, history proves that these methods could subject the densely populated Northeast to pollution, disease and death. As an independent consultant on hazardous material shipments explained in the Albany newspaper *Times Union*, "Albany now has been unfortunately sort of targeted by the oil industry for major flow of crude oil across the continent ... It's like Houston on the Hudson except with no jobs. You have a lot of the risks, but no jobs."⁵³

Instead, the East Coast — and the entire United States — should be weaning off fossil fuel consumption through policies that will lead us to a sustainable, clean energy future.

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