CITIZEN PETITION BEFORE THE UNITED STATES UNITED STATES DEPARTMENT OF TRANSPORTATION, PIPELINE HAZARDOUS MATERIALS SAFETY ADMINISTRATION AND UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

APPALACHIAN MOUNTAIN CLUB; BRUCE AND ROXANN BOETTCHER; BOLD NEBRASKA; MR. AND MRS. L. A. BREINER; SUSAN M. CONNOLLY; CONSERVATION LAW FOUNDATION; NICK AND BECKY COOK; JULIA TRIGG CRAWFORD; DAKOTA RESOURCE COUNCIL; DAKOTA RURAL ACTION; STEVEN DASILVA AND KATHY REDMAN DASILVA; JENELDA DITTRICH; CALVIN AND CATHY DOBIAS; ENVIRONMENT MAINE; FRESHWATER FUTURE; FRESH ENERGY; GREAT LAKES ENVIRONMENTAL LAW CENTER; BART HAGUE; RON HOLLAND AND LAURIE GREEN; LAMAR W. HANKINS; JACK AND LYNELLE HUCK; INDIGENOUS ENVIRONMENTAL NETWORK; JOHN KASSEL, FORMER SECRETARY, VERMONT AGENCY OF NATURAL RESOURCES; BRENT AND RONA KINSLEY; BRUCE KIRMMSE; JIM KNOPIK AND CAROLYN KNOPIK; RON AND BRENDA KNOPIK; TOM AND GAIL KNOPIK; ROBERT W. KRUSZYNA AND HARRIET G. KRUSZYNA; GEORGE LAPOINTE, FORMER COMMISSIONER, MAINE DEPARTMENT OF MARINE RESOURCES; VERMONT STATE SENATOR VIRGINIA LYONS; MICHIGAN STUDENT SUSTAINABILITY COALITION; MIDWEST ENVIRONMENTAL ADVOCATES; RICHARD MILES; MINNESOTA CONSERVATION FEDERATION; MINNESOTA CENTER FOR ENVIRONMENTAL ADVOCACY; NATIONAL WILDLIFE FEDERATION; NATURAL RESOURCES COUNCIL OF MAINE; NEBRASKA FARMERS UNION; NEBRASKA WILDLIFE FEDERATION; NEW HAMPSHIRE AUDUBON; NEW HAMPSHIRE TROUT UNLIMITED; NEW HAMPSHIRE WILDLIFE FEDERATION; NORTHERN PLAINS RESOURCE COUNCIL; MAINE STATE SENATOR JOHN L. PATRICK; JOAN KRUSE ROGERS; SAVE THE DUNES; SEBAGO LAKE ANGLERS ASSOCIATION; SIERRA CLUB; RANDY THOMPSON; JERAMIE AND BRENDA VANLEER; VERMONT NATURAL RESOURCES COUNCIL; VERMONT PUBLIC INTEREST RESEARCH GROUP; JASON WESSENDORFF; WESTERN ORGANIZATION OF RESOURCE COUNCILS; and WISCONSIN WILDLIFE FEDERATION

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PETITION SEEKING RULEMAKING TO ADDRESS THE TRANSPORTATION OF DILUTED BITUMEN THROUGH INTERSTATE PIPELINES

> *Contributing to the [Kalamazoo] accident was the Pipeline and Hazardous Materials Safety Administration's (PHMSA) weak regulation for assessing and repairing crack indications, as well as PHMSA's ineffective oversight of pipeline integrity management programs, control center procedures, and public awareness. Contributing to the severity of the environmental consequences were … PHMSA's lack of regulatory guidance for pipeline facility response planning, [and] PHMSA's limited oversight of pipeline emergency preparedness that led to the approval of a deficient facility response plan.*
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> -Report of National Transportation Safety Board, July 25, 2010.[1]

> *Mr. Waxman: Were your regulations developed with the properties of diluted bitumen in mind?*
> *Ms. Quarterman: I don't believe it was a part of the equation, no.*
> *Mr. Waxman: Have you received [sic] your regulations to assess whether they adequately address any risks specific to diluted bitumen?*
> *Ms. Quarterman: We have not done so.*
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> -Testimony of Cynthia Quarterman, PHMSA Administrator, June 16, 2011.[2]

Pursuant to the Right to Petition Government Clause contained in the First Amendment of the United States Constitution,[3] the Administrative Procedure Act,[4] the Pipeline Safety Act, the

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[1] NATIONAL TRANSPORTATION SAFETY BOARD, NTSB/PAR-12/01, PIPELINE ACCIDENT REPORT: ENBRIDGE INCORPORATED HAZARDOUS LIQUID PIPELINE RUPTURE AND RELEASE, MARSHALL, MICHIGAN, JULY 25, 2010 xii [hereinafter NTSB REPORT] (Jul. 10, 2012), *available at* http://www.ntsb.gov/doclib/reports/2012/par1201.pdf (last visited Mar. 15, 2013).

[2] *Pipeline Infrastructure and Community Protection Act of 2011: Hearing on The American Energy Initiative (Day 10): Pipeline Safety Oversight Before the H.R. Subcomm. on Energy and Power, Comm. on Energy and Commerce*, 112th Cong. 68-69 (2011) (statement of Cynthia Quarterman, Administrator of the Pipeline and Hazardous Materials Safety Administration), *available at* http://democrats.energycommerce.house.gov/sites/default/files/image_uploads/061611%20EP%20American%20Energy%20Initiative%2010-Pipline%20Safety%20Oversight.pdf.

[3] The right to "petition for redress of grievances" is "among the most precious of the liberties safeguarded by the Bill of Rights." *United Mine Workers of America, Dist. 12 v. Illinois State Bar Ass'n*, 389 U.S. 217, 222, 88 S. Ct. 353, 356, 19 L. Ed. 2d 426 (1967). It shares the "preferred place" accorded in our system of government to the First Amendment freedoms, and has a sanctity and a sanction not permitting dubious intrusions. *Thomas v. Collins*, 323 U.S. 516, 530, 65 S. Ct. 315, 322, 89 L. Ed. 430 (1945). "Any attempt to restrict those First Amendment liberties must be justified by clear public interest, threatened not doubtful or remotely, but by clear and present danger." *Id*. The Supreme Court has recognized that the right to petition is logically implicit in, and fundamental to, the very idea of a republican form of government. *United States v. Cruikshank*, 92 U.S. (2 Otto) 542, 552, 23 L. Ed. 588 (1875).

Clean Water Act, and the Oil Pollution Act, the undersigned Petitioners request that the Department of Transportation's Pipeline Hazardous Materials Safety Administration (PHMSA) and the Environmental Protection Agency (EPA) initiate rulemaking to address pipeline safety and spill response risks associated with the transportation of tar sands crude oil transported as diluted bitumen through interstate pipelines under the regulatory authority of PHMSA and EPA. Specifically, the undersigned request that PHMSA and EPA:

- Issue protective new pipeline safety standards to ensure that the safety hazards involved in pipelines carrying diluted bitumen are accounted for and safety requirements are stronger than those for conventional crude.

- Require detailed industry reporting of what materials are being carried through pipelines and when they are being carried so that communities and responders can be instantly made aware of what material they are dealing with in the case of a spill. Information regarding the materials being carried through a pipeline, especially in the event of any spill, should be easily accessible to concerned members of the public without long delay or cumbersome process. It should also require companies to disclose the chemical composition of diluted bitumen, including the composition of any diluents used.

- Require PHMSA and EPA to work with communities to put in place spill response plans and training that prepare communities to respond to the unique threats created by the movement of diluted bitumen.

- Make sure that oil companies' spill response plans for diluted bitumen are independently reviewed and subject to public comment.

- Revise monitoring and spill prevention requirements for diluted bitumen to ensure that spill detection systems do not fail and that pipelines are shut down in the first instance of any indication of a leak or other pipeline failure, even in cases where operators suspect a safety breach may not be the cause of a possible abnormality.

- Require operators to immediately shut down and repair pipelines that carry diluted bitumen as soon as operators discover any safety defects, such as cracks or corrosion, even if such defects would currently not require immediate shut down and repair.

- Place a moratorium on any expanded transportation of diluted bitumen, through either new or existing pipelines, until appropriate regulations are put in place.

- Require increased inspection of diluted bitumen pipelines, and periodic independent verification of any operator reporting.

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[4] 5 U.S.C. § 553(e) (2011).

- Engage PHMSA as a required consulting agency in any approval or review of a proposed pipeline carrying diluted bitumen.

- Require rigorous pre-operation review of written integrity management programs developed pursuant to 49 C.F.R. 195.452 for pipelines that may carry diluted bitumen. Review of these programs should extend to baseline assessment plans. Particular emphasis should be given to agency review of preventative and mitigation measures for high consequences areas. This review should be conducted prior to any final agency action allowing for the commencement of pipeline operation or prior to existing pipelines being authorized to carry diluted bitumen, whichever comes sooner. Assessment intervals for pipelines carrying diluted bitumen should be reduced from the current sixty-eight-month requirement to a twenty-four-month requirement.

PETITIONERS

The **Appalachian Mountain Club** (AMC) is the nation's oldest outdoor recreation and conservation organization. AMC promotes the protection, enjoyment, and understanding of the mountains, forests, waters, and trails of the Appalachian region. AMC believes these resources have intrinsic worth and also provide recreational opportunities, spiritual renewal, and ecological and economic health for the region. Because successful conservation depends on active engagement with the outdoors, we encourage people to experience, learn about, and appreciate the natural world. Our 16,000 volunteers, 450 full time and seasonal staff, and 100,000 members, supporters, and advocates are central to our mission. Our staff offers outdoor experiences and programs focused on our Maine and New Hampshire huts and lodges, while our twelve chapters from Maine to Washington, D.C. offer a variety of local outdoor activities and skills workshops. Staff and volunteers also maintain over 1,500 miles of trails, support our conservation policy and research efforts, and work to get urban and at-risk youth outdoors. AMC is very concerned about the risks of transporting tar sands through a sixty-two year old pipeline (the Portland-Montreal Pipe Line) that crosses and threatens some of the most precious outdoor resources in Vermont, New Hampshire and Maine – resources our members cherish and use for recreation, and, in many instances, have worked hard to protect.

Bold Nebraska's mission is to change the political landscape and restore political balance. Bold Nebraska is concerned that today's politics are dominated by policies that are more about protecting big business than families and people. The TransCanada export pipeline, called Keystone XL, is a risky and bad idea for Nebraska, its land, water and economy. The pipeline will threaten Nebraska with the risks of a spill of dirty, corrosive fuel. Bold Nebraska does not want to see it built. Bold Nebraska wants investments in American-made energy, including domestic oil and sustainable biofuels, wind, solar and efficiency programs, which bring long-term jobs to rural and urban Nebraska.

Susan M. Connolly is a resident of Marshall, Michigan where, in July of 2010, Line 6B of the Enbridge Lakehead System spilled approximately one million gallons of tar sand crude into Talmadge Creek and the Kalamazoo River. The spill is the largest in Midwest history, the first of its kind, and has tragically impacted the environment and communities along the river. Susan and her family were directly impacted by the spill. Her children, who attended a childcare center within a half-mile from the Kalamazoo River, and her family pet were sickened by the volatile airborne chemicals from the tar sands spill. Since the day of the spill, she has been studying the impacts of a tar sand spill and questioning the adequacy of regulations related to tar sands pipeline safety. She is a litigation paralegal with twenty-three years of experience. Susan has been using her paralegal skills to research the impacts of the Marshall spill and the regulatory structure that failed to prevent it and adequately protect her family from its impacts. She has testified before Congress and the Unites States Department of State, spoken to the press about the issue, and volunteered her time with several environmental organizations to bring awareness to the issue of tar sands pipeline safety.

The **Conservation Law Foundation** (CLF) is a non-profit, member-driven environmental advocacy organization dedicated to protecting the people, environment, and communities of New England. CLF has, as part of its long standing clean water program, worked to protect the water resources of New England from pollution. As part of its long-standing, sustainable, clean energy programs, CLF has advocated for reducing air and water pollution and greenhouse gas emissions from our power supplies. CLF has thousands of members across the Northeast, including members in northern New England who are users of the natural resources that will be directly affected by the use of the Portland-Montreal Pipe Line for transportation of tar sands oil. CLF has actively been involved in legal, regulatory, and legislative processes regarding fossil fuel use and transportation for more than a decade.

Dakota Resource Council (DRC) was formed in 1978 to protect North Dakota's land, air, water, rural communities and agricultural economy. DRC works for the preservation of family farms, enforcement of corporate farming laws, soil and water conservation, regulation of coal mining and oil and gas development, protection of groundwater and clean air, renewable energy, and sound management of solid and toxic wastes.

Dakota Rural Action is a grassroots family agriculture and conservation group that organizes South Dakotans to protect our family farmers and ranchers, natural resources, and unique way of life. Dakota Rural Action has worked with farmers and ranchers impacted by the proposed Keystone XL pipeline since 2008 to ensure that South Dakota land, water and resources are protected.

Environment Maine is a statewide, citizen-based environmental advocacy organization. Environment Maine believes there is so much that is special about Maine that needs to be protected and preserved for future generations. Environment Maine has 16,000 members and supporters in Maine. Environment Maine is very concerned with the risks tar sands poses to Maine. Pumping tar sands oil through a sixty-two year old pipeline in Maine would threaten

Sebago Lake, the drinking water supply of 200,000 Mainers. It would also threaten pristine and treasured resources like the Crooked River and Androscoggin River, and threaten Casco Bay, an environmental and economic jewel for the Portland, Maine region. Additionally, climate change spurred by tar sands development threatens Mainers livelihood by compromising lobstering and other iconic Maine industries, Maine's coastal communities, and the ecosystems of Maine's vast forests.

Fresh Energy is concerned with major pipeline infrastructure projects that take us backward in our transition to a clean energy economy by enabling expansion of carbon intensive tar sands delivery into and through the state of Minnesota. For five years, Fresh Energy has been educating Minnesotans about the threat of tar sands extraction and use for accelerating dangerous climate change. When these tar sands are transported through beautiful Minnesota, they put the state's iconic places and healthy communities at risk. For more than twenty years, Fresh Energy has transformed widely held economic and environmental ideas into smart energy policy. Currently, Fresh Energy's efforts are concentrated in six key areas: regulating carbon pollution, transitioning beyond fossil fuels to clean energy, improving our transportation and land-use systems, expanding transmission for renewable energy, and increasing clean energy and energy efficiency.

Freshwater Future, then named the Great Lakes Aquatic Habitat Network and Fund, was created in 1996 as an innovative program to help local communities across the Great Lakes region protect their local lakes, rivers and wetlands. With the understanding that citizens' success could be greatly improved with just small amounts of funding, connections to others doing similar work and access to technical expertise, the program was created to meet these needs. Freshwater Future became an independent 501(c)(3) organization in 2006. The mission of Freshwater Future is to ensure the healthy future of our waters in the Great Lakes region. After the Enbridge disaster along the Kalamazoo River, Freshwater Future stepped in to help support the local efforts of community based groups advocating for proper clean-up by providing financial assistance and expertise. Freshwater Future along with many community based groups that are part of our network of over 1,500 community groups and advocates are concerned about the possibility of other such disasters throughout the Great Lakes region.

The **Great Lakes Environmental Law Center** was founded to protect the world's greatest freshwater resource and the communities that depend upon it. Based in Detroit, the Great Lakes Environmental Law Center has a board and staff of dedicated and innovative environmental attorneys to address our most pressing environmental challenges. The Great Lakes Environmental Law Center was also founded on the idea that law students can and must play a significant role in shaping the future of environmental law. In all of our work, law students are one of the Great Lakes Environmental Law Center's most valuable resources. The Great Lakes Environmental Law Center is very concerned about the risks of a tar sands spill in one of the many waters we work to protect. The July 25, 2010 Marshall, Michigan spill sadly demonstrated both the catastrophic impacts of a tar sands spill on Great Lakes area waters as well as the grossly inadequate regulation of diluted bitumen transportation and spill response. The Great

Lakes Environmental Law Center is also very concerned about the climate impacts of tar sands development and what it will mean for the future of Great Lakes' ecosystems and the communities that depend on these ecosystems.

Bart Hague is a landowner in Waterford, Maine, with the Portland-Montreal Pipe Line running through a mile of his land, contiguous to a critical reach of the Crooked River and intersecting tributaries, wetlands and aquifer. The Crooked River is designated as an Outstanding River. His reach of the Crooked River features prime salmon and brook trout gravel beds, Class AA drinking waters, and outdoor recreation assets. Crooked River flow contributes forty percent of the flow, attenuated, into Lake Sebago, which is the source of drinking water for over 200,000 residents of Greater Portland. To forever protect this critical resource, Bart Hague donated a conservation easement to the Western Foothills Land Trust. He has devoted a lifetime career to public works, and watershed and environmental planning. He is concerned that any flow of tar sands oil or bitumen might pose unacceptable risks. Accordingly, he urges development of standards governing the safety of diluted bitumen transmitted through pipelines.

Ron Holland and **Laurie Green** own two properties in Caledonia County, Vermont, both of which are traversed and directly threatened by the Portland-Montreal Pipe Line. They are very concerned about the risks of a tar sands spill to their properties should this aging, sixty-two year-old pipeline be used for transporting tar sands oil. Also, they cherish Vermont, and are very concerned that Vermont's current climate, economy and way of life are directly threatened by climate change. Tar sands development promises to emit unsustainable levels of carbon into the atmosphere, almost certainly adding to the deleterious and permanent changes to the landscape, flora, fauna, and climate of Vermont that global warming will bring.

Indigenous Environmental Network (EIN) was established in 1990 within the United States. IEN was formed by grassroots Indigenous peoples and individuals to address environmental and economic justice issues. IEN's activities include building the capacity of Indigenous communities and tribal governments to develop mechanisms to protect Indigenous people's sacred sites, land, water, air, natural resources, health of both Indigenous people and all living things, and to build economically sustainable communities. IEN accomplishes this by maintaining an informational clearinghouse, organizing campaigns, direct actions and public awareness, building the capacity of community and tribes to address environmental and economic justice issues, development of initiatives to impact policy, and building alliances among Indigenous communities, tribes, inter-tribal and Indigenous organizations, people-of-color/ethnic organizations, faith-based and women groups, youth, labor, environmental organizations and others. IEN convenes local, regional and national meetings on environmental and economic justice issues, and provides support, resources and referral to Indigenous communities and youth throughout primarily North America – and in recent years – globally. IEN is concerned about the impacts of tar sands spill on land, water and other natural resources used and relied upon by Indigenous peoples.

John Kassel is the President of the Conservation Law Foundation, New England's oldest environmental advocacy organization committed to protecting the region's environment for the benefit of all people. Prior to joining CLF, he served as Secretary of Vermont's Agency of Natural Resources in the administration of Gov. Howard Dean, after joining the agency previously as its General Counsel and then in private practice for a number of years. John's personal commitment to the health and restoration of Northern New England's water resources is matched by the work of CLF to reduce the risks of harm to those resources. The proposal to ship one of the dirtiest and most destructive forms of oil – tar sands oil – through Vermont, New Hampshire and Maine presents an enormous risk to those resources and the people of the region who rely on them for their business and pleasure.

Brent and Rona Kinsley are residents of Vermont's pristine Northeast Kingdom. The Portland-Montreal Pipe Line traverses their farm. A tar sands spill from that pipeline would directly threaten their health, land and livelihood.

Bruce Kirmmse lives in Randolph, New Hampshire. The Portland-Montreal Pipe Line goes through his property, which he has owned for almost fifty years. He is very worried about the possibility that tar sands bitumen will be pumped through one of the pipelines in that right-of-way, specifically the eighteen-inch pipeline, which is over sixty years old. Mr. Kirmmse is well aware of the July 25, 2010 spill that has fouled the Kalamazoo River and the fact that the Kalamazoo River spill has proven nearly impossible to clean up. He does not want that scenario to play out for him and the resources he has enjoyed for half a century. The pipeline crosses a beautiful little stream on his property. He would find it heartbreaking if that stream was destroyed by a spill, or if bitumen were to coat the bottom of Israel's River, which is about thirty yards downstream from his property. Mr. Kirmmse is also extremely concerned about the toxic impacts of the lighter hydrocarbons – which are notorious carcinogens – being released into the atmosphere, and the effect it would have on his and his neighbors' health. A leak on the pipeline would also potentially destroy his and his neighbors' property values.

Robert W. Kruszyna and Harriet G. Kruszyna are homeowners in Randolph, New Hampshire. The Portland-Montreal Pipe Line passes through their backyard. They are extremely concerned about the risks of a tar sands spill if the pipeline is converted to tar sands use. The pipeline lies within 100 feet of their house, and runs parallel to the Moose River for a few hundred feet and before passing under a tributary stream and then under the Moose River itself. The Moose River is a tributary to Androscoggin River, which the pipeline also crosses. The bedrock is very near the surface near their home, so the pipe is not deeply buried. During storms like Irene and Sandy, and during regular Spring runoff, the Moose River transforms into a raging torrent, sometimes scouring away the gravel covering the pipe and directly exposing it to rocks, tree limbs and other debris carried by the river. The pipe that is likely to be reversed for tar sands use is more than sixty years old. Mr. Kruszyna is a physicist and has observed shoddy engineering and workmanship performed on the pipeline over the years under the guise of maintenance. The Kruszynas are worried that the weak regulatory structure currently in place

will result in an inevitable spill that will have catastrophic consequences for them – not only literally destroying the land and waters on and near their property with the bitumen and its toxic diluents, but also endangering the health and safety of all those who live along the pipeline. It would also potentially destroy their property value and harm the economy of their region, which relies on tourism and its reputation as a remote and pristine area.

George Lapointe is a former Commissioner of the Maine Department of Marine Resources, serving from 1998 to early 2011. In that position, he worked on many efforts to protect and restore Maine's fisheries and other marine resources through sustainable management and habitat protection. These resources, from lobsters to groundfish, are critical to Maine's economy and identity. The Montreal-Portland Pipe Line, which could be used to transport tar sands oil, and the Presumpscot River, which is traversed by the pipeline, both end at Casco Bay. Casco Bay is one of Maine's major bays and is particularly important to commercial clamming. Maine has worked long and diligently to clean clam flats as clam flats are especially vulnerable to pollution. In 1996, an oil tanker crashed into a bridge pier and spilled 180,000 gallons of refined oil product into the harbor of Casco Bay. Luckily much of the spilled oil was recovered. A spill of diluted bitumen, whether from the tanker or directly from the pipeline, could have far greater environmental and economic damage for the Bay and those species and residents that depend on it.

Vermont **State Senator Virginia Lyons** is in her seventh term representing the largest district, Chittenden County, in the Vermont State Senate. She is a professor of Biology and taught for nearly thirty years at Trinity College, Vermont. She served as Chair of her Select Board for nearly fifteen years and serves on a number of local, state, and national boards. For most of her time in the Vermont Senate, she has served as Chair of the Natural Resources and Energy Committee. Her focus as an elected official is on energy, water quality, land use planning, and the nexus between the environment and public health. Senator Lyons continues to work for economic health by promoting investment in sustainable use of the state's natural resources. The Portland-Montreal Pipe Line travels through pristine areas of Vermont and threatens those natural resources. Many citizens are concerned about the environmental and public health risks posed if the pipeline is converted to carry tar sands. Almost thirty towns in Vermont recently passed town meeting resolutions against tar sands transport through the pipeline or the state. Some of those towns are in Senator Lyons's district. Senator Lyons believes that the pipeline must be subject to rigorous environmental protection standards to eliminate any risks associated with substances it transports.

The **Michigan Student Sustainability Coalition** facilitates action, cooperation, and communication among the students of Michigan by providing an organizational entity committed to environmental justice and sustainability. The MSSC supports student sustainability work on many campuses throughout Michigan and creates opportunities for students to come together in a shared learning experience that creates solidarity to leverage the collective youth voice. MSSC creates student leaders in Michigan's sustainability movement so that our youth may have an

impact on the future of Michigan's environment, economy, and society. We recognize that much of our cultural identity and livelihoods comes from Michigan's natural resources and areas, and work collectively to preserve these for our futures and generations to come. We are extremely concerned about the threats that tar sands oil pipelines throughout the Great Lakes poses to our state. Based on our experiences with the 2010 Kalamazoo River Enbridge spill, it is clear that neither oil companies nor governing bodies are prepared to deal with this type of oil when spills occur. Tar sands oil may remain submerged in this river for many years to come and we hope to prevent future spills and ecosystem destructions by supporting measures to increase pipeline regulation and safety measures, specifically when dealing with tar sands oil.

Midwest Environmental Advocates (MEA) has legitimate concerns with the expanding infrastructure of tar sands pipelines in the Midwest, which has already had incredible impacts to our land and water through spills and pipeline construction. For almost fourteen years, MEA has worked for healthy water, healthy air, healthy land and healthy government for this generation and the next. MEA believes that access to healthy water is a right we all share and the organization uses its expertise in water law to help citizens protect this right. In addition, MEA believes that the land makes marks upon us just as we leave our marks upon the land. To that end, MEA works to protect the rich soils of the Midwest, as well as citizens' rights to determine how land is used.

The **Minnesota Conservation Federation** is a common sense conservation organization made up of hunters, anglers and others who are dedicated to the enjoyment, education and ethical use of our natural resources. MCF provides an impartial vehicle for all members to have a proactive effect on sound conservation policy. We have been the Minnesota affiliate of the National Wildlife Federation since 1936. Our affiliation is mutually beneficial as we work to develop national and global conservation policy. Tar sands currently flow through at least one major pipeline in Minnesota that impacts natural resources along its route. We are concerned about the impacts of tar sands spill from a pipeline to wildlife habitat and natural resources in Minnesota.

The **Minnesota Center for Environmental Advocacy** (MCEA), headquartered in St. Paul, Minnesota, was founded in 1974 with a mission of using legal and policy advocacy to achieve positive, long-term solutions for Minnesota's most pressing environmental and natural resource problems. One of MCEA's primary projects has been work to encourage a transition away from fossil-fuel, including tar sands, toward cleaner energy sources in meeting Minnesota's future needs. MCEA regularly appears before federal and state courts, and state regulatory commissions.

The **National Wildlife Federation** (NWF) is the nation's largest conservation advocacy organization and education organization. Founded in 1936, NWF is a non-profit organization with its headquarters in Reston, Virginia and affiliate organizations in almost fifty states and territories. NWF's mission is to inspire Americans to protect wildlife for our children's future. NWF and its approximately one million members are committed to protecting wildlife and

wildlife habitat from the dangers of dirty fuels like tar sands, and in ensuring climate change impacts are mitigated by turning away from fossil fuels and towards clean, renewable energy sources.

The **Natural Resources Council of Maine** (NRCM) is a nonprofit membership organization protecting, restoring, and conserving Maine's environment, now and for future generations. NRCM works to improve the quality of Maine's rivers; to reduce toxic chemicals threatening the health of Maine families and wildlife; to decrease air and global warming pollution; and to conserve Maine lands. NRCM harnesses the power of the law, science, and the voices of more than 12,000 supporters statewide and beyond. NRCM has specifically worked for decades to protect and restore the Androscoggin River, one of Maine's great rivers, and the Crooked River, one of the state's most ecologically pristine waterways. Both rivers are crossed multiple times, and paralleled for many miles, by an aging oil pipeline – the Portland-Montreal Pipe Line – that could be modified to carry diluted bitumen. The lack of pipeline standards for diluted bitumen pipelines puts these natural resources and many others at risk. Pipelines that carry tar sands also jeopardize Maine's efforts, supported by NRCM for more than a decade, to reduce the dangerous impacts of climate change. NRCM has worked to help establish state policies to reduce Maine's contribution to climate change because the state is extremely vulnerable to climate impacts such as sea-level rise, increased flooding and storm surge, loss of softwood forest habitat, and severe weakening of the winter recreation economy.

Founded in 1913, **Nebraska Farmers Union** is dedicated to protecting and enhancing the quality of life and economic well-being of family farmers and ranchers, and their rural communities. As Nebraska's largest family farm and ranch agricultural organization with over 6,200 family farm and ranch families as members, Nebraska Farmers Union is dedicated to the farm income issues which matter most to rural families. With active members across the state, Nebraska Farmers Union is one of Nebraska's oldest and strongest grassroots organizations. Nebraska Farmers Union is extremely concerned about the possible impacts of a tar sands pipeline spill on land and water resources Nebraska farmers and ranchers depend on for their livelihood, health and well-being.

Nebraska Wildlife Federation, which was chartered in 1970, is a state-wide, non-profit, membership based organization dedicated to fish and wildlife conservation through environmental education, fish and wildlife conservation, and common sense public policy. Whether working to protect the imperiled ecosystems of the Platte River and the Rainwater Basin, preserving the hidden majesty of the Pine Ridge or Niobrara River, searching out the last remnants of Nebraska's Tallgrass prairie, or helping state agencies better manage Nebraska's huntable and fishable species, the Nebraska Wildlife Federation is working for its members and the people of Nebraska – and working for wildlife. Its programs promote nature education, environmental awareness and enjoyment. Nebraska Wildlife Federation works to advance state and national policies that are good for family farmers, rural communities and our natural resources. It is extremely concerned about the risks to Nebraska's natural resources, wildlife, and people if tar sands oil is allowed to be pumped through the heart of Nebraska.

New Hampshire Audubon's mission is to protect New Hampshire's environment for wildlife and for people. Ensuring that major land and water development projects in the state undergo a comprehensive environmental review with opportunity for public input is a high priority for our membership. A flow reversal of the Portland-Montreal Pipe Line for tar sands transportation would be a major change of use for an aging infrastructure, and any breach of the pipeline could have serious environmental, economic, and public health consequences.

The **New Hampshire members of Trout Unlimited**, a cold water conservation organization, strongly oppose the pumping of tar sands oil through the existing pipeline that runs from Portland, Maine to Montreal, Quebec (the Portland-Montreal Pipe Line) and believe that current safety regulations do not protect critical natural resources from a potential spill. The current pipeline crosses two major river systems and a number of other minor water bodies in New Hampshire and in any rupture that might occur would have a catastrophic impact on the environment as well as the economy of the state. These water bodies support many different varies of endangered and threatened aquatic species as well as large and diverse animal population. The area is heavily used by hunters, fisherman and other outdoor enthusiasts.

New Hampshire Wildlife Federation is devoted to the preservation and protection of hunting, fishing, and trapping and the conservation of and access to fish and wildlife habitat and resources in New Hampshire. New Hampshire Wildlife Federation is deeply concerned about the possibility of tar sands being carried along the sixty-two year old Portland-Montreal Pipe Line that potentially impacts wildlife, wildlife habitat, and natural resources used and enjoyed by our members.

Northern Plains Resource Council is a grassroots conservation and family agriculture group that organizes Montana citizens to protect our water quality, family farms and ranches, and unique quality of life. Northern Plains organized the Northern Plains Pipeline Landowners Group, a group of landowners crossed by the proposed Keystone XL pipeline to protect landowners and public safety. Northern Plains also worked to maximize transparency surrounding the Exxon pipeline spill in the Yellowstone River.

Maine **State Senator John L. Patrick** is entering his second term representing most of Oxford County in the Maine State Senate; previously he represented the city of Rumford and adjacent towns for eight years in the Maine House of Representatives. He is a lifelong resident of the Androscoggin River valley and worked for nearly thirty years at a paper mill there, serving terms as President of the United Paperworkers Local 900 and as board member of the Maine AFL-CIO. His focus as an elected official is on the needs of working families, including creating jobs that pay living wages and promoting economic opportunity through education and small business initiatives. He understands the dependence of the region's economy on natural resources, from forests to the Androscoggin River to other waterways. Approximately twenty-five miles of the Portland-Montreal Pipe Line passes through his district, including a crossing of the

Androscoggin River, and his constituents are very concerned about the risks were the pipeline to be converted to carry tar sands. Two towns in his district (Bethel and Waterford) have passed municipal resolutions stating their concern about the risks of a tar sands pipeline spill to water quality, public health and safety, local natural resources and, by extension, the economy that depends on them. Sen. Patrick believes that it is imperative that our pipelines are subject to safety standards that reflect the true risks from the substances transported through them.

Save the Dunes, an organization with origins that go back to 1952, seeks to preserve, protect and restore the Indiana Dunes and all natural resources in Northwest Indiana's Lake Michigan Watershed for an enhanced quality of life. Among other programs, Save the Dunes seeks to protect the critically important Indiana Lake Michigan Watershed, as well as the Indiana Dunes, through effective watershed planning and implementation. Save the Dunes is very concerned about the risks to the waters it seeks to protect from a tar sands pipeline spill. Another incident like the July 25, 2010 Kalamazoo spill would have tragic consequences for the region. Safety regulations must protect our waters from such risk.

The **Sebago Lake Anglers Association** was established in 1994 and incorporated as a non-profit organization in 2009 to promote, protect and enhance the quality and longevity of the ecosystem of the Sebago Lake Region and to work with regulatory agencies and other organizations in the interest of advancing fishery development, waterway access, equitable water levels, water quality, and conservation of the natural resources of the Sebago Lake Region watershed. The sixty-two year old Portland-Montreal Pipe Line directly threatens Sebago Lake and several of its tributaries, including crossing the Crooked River at multiple locations. A tar sands spill into the Sebago Lake watershed would not only threaten the drinking water supply of about 200,000 Mainers, but also cause long-term and potentially permanent damage to the fisheries and natural resources of the Sebago Lake region.

The **Sierra Club** was founded in 1892 and is the nation's oldest grass-roots environmental organization. The Sierra Club is incorporated in California, and has its headquarters in San Francisco, California. It has more than 700,000 members nationwide. The Sierra Club is dedicated to the protection and preservation of the natural and human environment. The Sierra Club's purpose is to explore, enjoy and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; and to educate and enlist humanity to protect and restore the quality of the natural and human environments. Solving the pressing environmental and health problems associated with the production and transportation of fuel derived from Canadian tar sands is one of Sierra Club's highest priorities.

The **Vermont Natural Resources Council** (VNRC) is Vermont's leading nonprofit environmental education and advocacy organization. For fifty years, with the support of and in service to over 5,000 members, VNRC has worked to promote policies and practices that serve as the foundation of the state's economy – clean, abundant fresh water, working farms and forests, wild, majestic places, thriving communities and a clean, green renewable energy future.

Vermont Public Interest Research Group (VPIRG) is a non-profit public interest organization with over 20,000 members and supporters in Vermont, and a mission of promoting and protecting the health of Vermont's people, environment, and locally-based economy. For nearly forty years, VPIRG has worked on issues related to protecting Vermont consumers and promoting renewable energy sources, both of which have been among the organization's highest priorities since our founding in 1972. The interests which VPIRG seeks to address include all the potential impacts upon the people of Vermont and VPIRG's members that arise from the reversal of the Portland-Montreal Pipe Line for the purpose of transporting tar sands oil. Specifically, we have a particular interest in preventing the potentially disastrous climate consequences of exploiting tar sands oil, as well as in the numerous environmental and public health risks associated with piping highly corrosive material through a sixty-two year old pipeline running through some of Vermont's most environmentally sensitive areas.

The **Western Organization of Resource Councils** (WORC) is a regional network of grassroots community organizations that include 10,000 members and thirty-eight local chapters. Based in Billings, Montana, WORC is committed to building sustainable environmental and economic communities that balance economic growth with the health of people and stewardship of their land, water, and air resources. WORC members in three states would be directly affected as landowners or neighbors of the Keystone I pipeline or proposed Keystone XL pipeline.

The **Wisconsin Wildlife Federation** (WWF) was formed by sportsmen and women in 1949. Historically it has been a strong leader in conservation through its work with sports clubs, citizen volunteers and policy makers. It works to assure that Wisconsin's outdoor heritage will be available for our children and grandchildren. WWF is made up of hunters, anglers, trappers and others that are actively engaged in the outdoors. Its members deeply appreciate Wisconsin's wildlife and recognize the importance of protecting fish and wildlife habitat. WWF understands that the long-term sustainability of fish and wildlife populations depends upon clean water, clean air and healthy forests and grasslands. WWF is dedicated to the future of hunting, fishing, trapping and the shooting sports. WWF is concerned about the risks to wildlife and wildlife related outdoor activities in Wisconsin from a tar sands spill. A spill such as the Kalamazoo River spill would have devastating consequences for wildlife in Wisconsin, for our members who enjoy wildlife, and for future generations who will inherit our natural resources.

The following citizen petitioners from Nebraska and Texas all either own property in the right-of-way of the proposed, and, in Texas, partially constructed, Keystone XL tar sands pipeline, or have an interest in land or resources that would be directly impacted by that right-of-way:

Bruce and RoxAnn Boettcher of Bassett, Nebraska.

Mr. and Mrs. L. A. Breiner of Stuart, Nebraska.

Nick and Becky Cook of Fullerton, Nebraska.

Julia Trigg Crawford of Sumner, Texas.

Steven DaSilva and Kathy Redman DaSilva of Nacogdoches, Texas.

Jenelda Dittrich of Elgin, Nebraska.

Calvin and Cathy Dobias of Atkinson, Nebraska.

Lamar W. Hankins of San Marcos, Texas.

Jack and Lynelle Huck of Lincoln, Nebraska.

Jim Knopik and Carolyn Knopik of Belgrade, Nebraska.

Ron and Brenda Knopik of Belgrade, Nebraska.

Tom and Gail Knopik of Fullerton, Nebraska.

Richard Miles of Omaha, Nebraska.

Joan Kruse Rogers of Seward, Nebraska.

Randy Thompson of Martell, Nebraska.

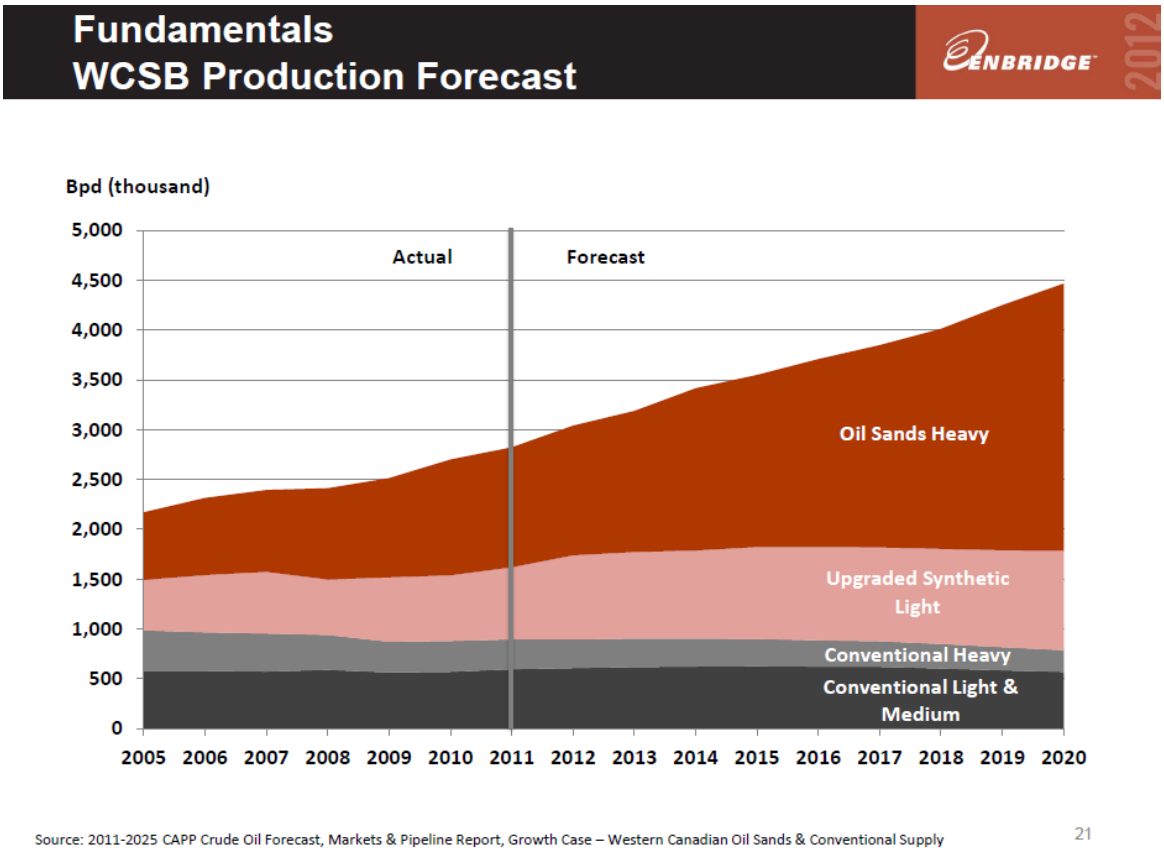
Jeramie and Brenda VanLeer of Archer, Nebraska.

Jason Wessendorff of Verdigre, Nebraska.

STATEMENT OF GROUNDS

The easy days of oil are over. Long past is the time when oil could be thought of as black gold that sprayed from the ground. Today's oil increasingly comes from remote places, is hard to extract, and carries severe risks and consequences. No source of oil illustrates this better than tar sands. Largely contained in Alberta, Canada, tar sands deposits are mined or drilled to extract a thick, viscous substance called bitumen that in many ways is as akin to coal as it is to oil. The extraction and development of bitumen is dirty and dangerous. Vast areas of lush boreal forest must be mined in order to extract tar sands, or large underground injection wells must essentially cook the tar sands using massive quantities of hot steam to melt the bitumen so it can be brought to surface.

Once extracted, bitumen cannot simply be put in a pipe and shipped. It is too hard a substance for that. Instead, it must either be diluted or refined down to a material resembling conventional crude. Given massive increases in extraction rate (see the following graph)[5] without increases in nearby refining capacity, an ever increasing amount of raw bitumen is being blended with volatile natural gas condensate to create diluted bitumen, which is then transported by pipeline to distant refineries or ports. This massive tar sands development is radically changing the nature of our oil pipeline infrastructure.



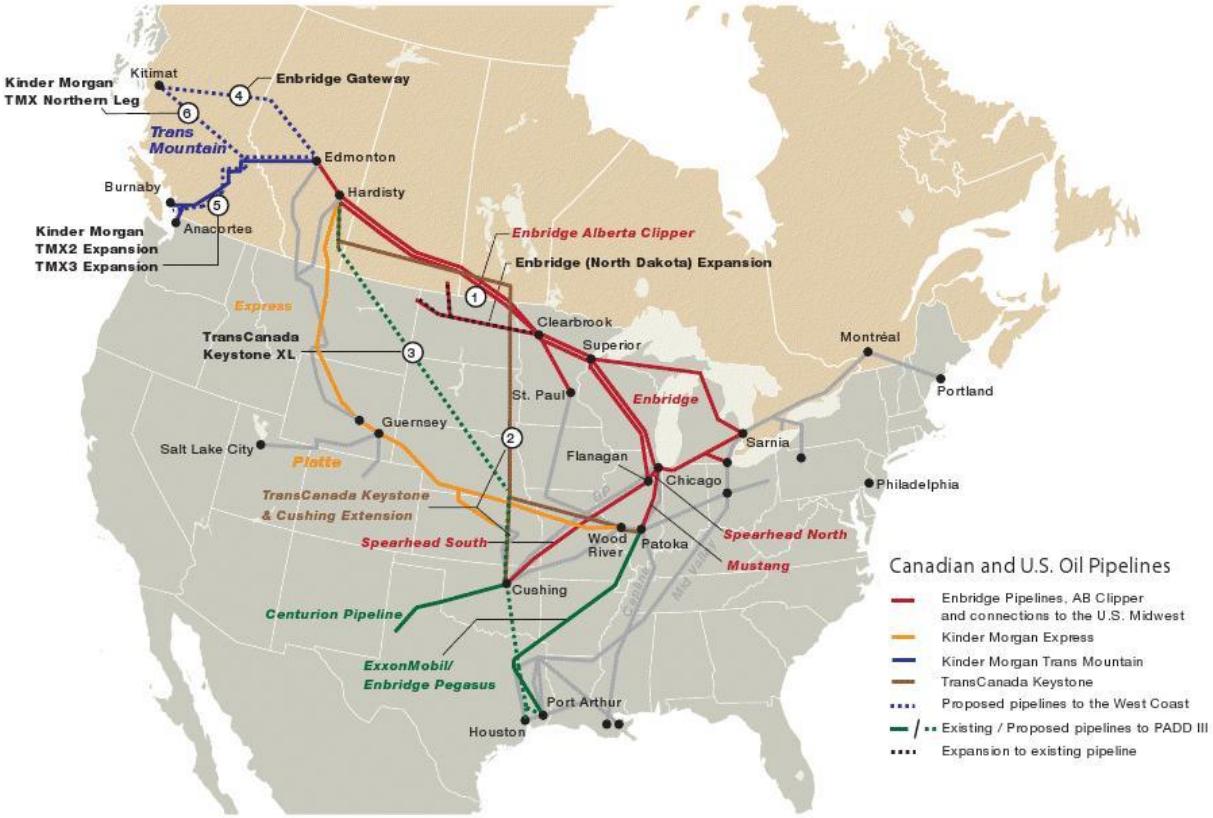
Simply put, diluted bitumen and conventional crude oil are not the same substance. There is increasing evidence that the transport of diluted bitumen is putting America's public safety at risk. Current regulations fail to protect the public against those risks. Instead, regulations governing pipeline construction, operation, maintenance and spill preparedness and response under the Pipeline Safety Act (PSA), Clean Water Act (CWA), and Oil Pollution Act (OPA) treat diluted bitumen and conventional crude the same. This must change.

[5] ENBRIDGE ENERGY PARTNERS L.P., NEW MARKET EXTENSIONS EASTERN ACCESS, EEP DAY 2012, at slide 21 (March 7, 2012), *available at* http://www.enbridgepartners.com/WorkArea/downloadasset/15545/2012-03-EEP-Day-Presentation-Combined.aspx (last visited Mar. 15, 2013).

Compared to conventional crude, diluted bitumen poses higher risks when it is transported by pipe and when it spills. It is a highly corrosive and potentially unstable blend of thick raw bitumen and volatile natural gas liquid condensate.[6] These qualities, along with the fact that it needs to be shipped at high temperature and pressure, make it especially dangerous to transport. Leak detection system failure also appears to be a significant problem with pipeline's transporting diluted bitumen. When it spills, as was tragically seen in the July 2010 Enbridge pipeline rupture that contaminated the Kalamazoo River and caused the massive evacuation of nearby communities, it is far harder to respond to and contain than conventional spills. Diluted bitumen also poses grave health risks to spill-impacted communities; risks that appear to be more acute than are seen in spills of conventional crude.

As the below map shows, the rapid expansion of diluted bitumen infrastructure in existing or proposed pipelines impacts significant portions of the United States, endangers countless communities, and threatens some of our most vital resources. Diluted bitumen is now the primary product being transported through existing pipelines in the Midwest.[7] With the construction of the Keystone XL pipeline, it would be transported to the Gulf Coast. A likely project in the Northeast would bring diluted bitumen across Northern New England. Thus, diluted bitumen pipelines immediately threaten or will likely threaten numerous ecologically important natural resources from the Great Lakes to the Ogallala Aquifer to Casco Bay as well as countless communities and citizens.

[6] NATURAL RESOURCES DEFENSE COUNCIL, TAR SANDS PIPELINES SAFETY RISKS [hereinafter NRDC REPORT] 4 (Feb. 2011), *available at* http://www.nrdc.org/energy/files/tarsandssafetyrisks.pdf.
[7] *Id*. at 3.



PHMSA and EPA have regulatory authority over pipeline safety and spill response plans pursuant to the PSA, CWA and the OPA. Existing pipeline safety laws were not written with diluted bitumen in mind[8] and the current regulatory framework is inadequate to manage the unique risks presented by the movement of this novel substance.[9] It is imperative that PHMSA and EPA promulgate new rules that recognize the heightened risks of transporting diluted bitumen, and put in place measures and requirements that will serve to better protect communities from these risks. As such, Petitioners request that PHMSA and EPA promulgate rules to address the risks of transporting diluted bitumen and to ensure that adequate spill response plans needed for diluted bitumen are in place.

[8] *Hearing on Pipeline Infrastructure and Community Protection Act of 2011*, *supra* note 2, at 68-69.

[9] Press Release, National Transportation Safety Board, *Pipeline Rupture and Oil Spill Accident Caused by Organizational Failures and Weak Regulations* [hereinafter NTSB Press Release] (July 10, 2010), *available at* http://www.ntsb.gov/news/2012/120710.html.

STATEMENT OF LAWS AT ISSUE

1. Administrative Procedure Act

The APA provides citizens with the right to petition for the "issuance, amendment, or repeal" of an agency rule.[10] A "rule" is the "whole or a part of an agency statement of general or particular applicability and future effect designed to implement, interpret, or prescribe law or policy."[11] The APA requires an agency to "conclude a matter presented to it" "within a reasonable time."[12] Judicial review under the APA requires that "the reviewing court shall compel agency action unlawfully withheld or unreasonably delayed."[13]

2. Pipeline Safety Act

The PSA's purpose is to "provide adequate protection against risks to life and property posed by pipeline transportation and pipeline facilities by improving the regulatory and enforcement authority of the Secretary of Transportation."[14] The PSA grants broad authority for federal regulation of all aspects of pipeline safety.

3. Clean Water Act

Congress enacted the Clean Water Act, 33 U.S.C. §§ 1251 *et seq*., with the express purpose of "restor[ing] and maintain[ing] the chemical, physical, and biological integrity of the Nation's waters."[15]

4. Oil Pollution Act

The OPA of 1990[16] was passed in the wake of the 1989 Exxon Valdez tanker disaster as an amendment to the CWA. It created a comprehensive compensation and liability scheme for oil spill pollution. The OPA is designed to improve the nation's ability to prevent and respond to oil spills by expanding on the federal government's role in regulating oil spill responses and by providing for additional resources for the federal government to respond to oil spills. The OPA created the Oil Spill Liability Trust Fund[17] (OSLTF), a crucial resource for funding oil spill response.

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[10] 5 U.S.C. § 553(e).
[11] *Id*. § 551(4).
[12] *Id.* § 555(b).
[13] *Id.* § 706(1). *See also Telecommunications Research and Action Center v. FCC*, 750 F.2d 70 (D.C. Cir. 1984).
[14] 49 U.S.C. § 60102(a)(1).
[15] 33 U.S.C. § 1251(a).
[16] *Id*. § 2701 et seq.
[17] *Id*. § 2701(11).

ARGUMENT

Current pipeline regulations do not distinguish between diluted bitumen, a highly corrosive and potentially unstable blend of thick raw bitumen and volatile natural gas liquid condensate (often referred to as "dilbit"), and conventional crude, allowing pipeline companies to move diluted bitumen through pipelines designed to move conventional crudes. Current regulations governing oil spills and response planning also do not account for the differences between diluted bitumen and conventional crude. Because of the extreme risks that both the transportation and spills of diluted bitumen pose when compared to conventional crude, these regulations must be changed to ensure that people, communities, and natural resources are more adequately protected from the risks of diluted bitumen.

As detailed below, diluted bitumen is a substantially different substance than conventional crude, including most conventional "heavy" crudes which do not need to be chemically diluted prior to transport. Its widespread transportation in the United States is relatively new, but is growing dramatically. With tar sands production in Alberta rapidly expanding and Canadian upgraders operating at full capacity, oil companies have started transporting more diluted bitumen to U.S. refineries that can process the corrosive material or to ports for export.[18]

Until recently, the United States has imported the majority of tar sands crude from Canada in the form of synthetic crude oil, a substance similar to conventional crude oil because it has already gone through an initial upgrading process. But with increasing production and static refining capacity in Canada, there has been a rapid increase in the transport of diluted bitumen.[19] From 2009 to 2012, blended bitumen exports to the United States have grown from 480,000 barrels per day (bpd_ in the first quarter of 2009 to 800,000 bpd in the first quarter of 2012 – more than three quarters of the approximately 1.1 million bpd of tar sands oil currently flowing into the United States.[20] This upward trend will continue. By 2022, the Canadian Association of Petroleum Producers project tar sands oil production will increase by more than 1.8 million bpd.[21]

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[18] Canadian blended bitumen (DilBit, SynBit, and DilSynBit) exports grew from about 480,000 bpd in the first quarter of 2009 to more than 800,000 bpd in the fourth quarter of 2012. *See* NATIONAL ENERGY BOARD, ESTIMATED CANADIAN CRUDE OIL EXPORTS BY TYPE AND DESTINATION 2009 – Q1, http://www.neb-one.gc.ca/clf-nsi/archives/rnrgynfmtn/sttstc/crdlndptrlmprdct/2009/stmtdcndncrdlxprttpdstnt2009_q1.xls and 2012-Q1, http://www.neb-one.gc.ca/clf-nsi/rnrgynfmtn/sttstc/crdlndptrlmprdct/2012/stmtdcndncrdlxprttpdstnt2012_q1.xls.

[19] *See id.*

[20] *See id. See also* IHS CERA SPECIAL REPORT, THE ROLE OF CANADIAN OIL SANDS IN THE US MARKET: ENERGY SECURITY, CHANGING SUPPLY TRENDS, AND THE KEYSTONE XL PIPELINE 1 (Jun. 2011) (about 1.1 million bpd of Canada's crude exports to the United States were from oil sands), *available at* *http://www.ihs.com/products/cera/energy-industry/oil-sands-dialogue.aspx* (last visited Mar. 15, 2013).

[21] CANADIAN ASSOCIATION OF PETROLEUM PRODUCERS, CRUDE OIL FORECAST, MARKETS & PIPELINES 38 (Jun. 2012), *available at* http://www.CAPP.ca/getdoc.aspx?DocId=209546&DT=NTV (last visited Mar. 15, 2013).

The desire to move more diluted bitumen into the United States is illustrated by recent major pipeline projects. Diluted bitumen is the primary product being transported through the TransCanada Keystone I pipeline that runs from Alberta's tar sands to Illinois and Oklahoma, which carries 591,000 bpd.[22] It is also the chief product being carried through Enbridge's recently built Alberta Clipper pipeline, which connects to the extensive Lakehead system in Wisconsin.[23] The Alberta Clipper Pipeline has a capacity of 450,000 bpd with an ultimate capacity of up to 800,000 bpd.[24] Enbridge has recently applied for a Presidential Permit to increase the amount of oil flowing through the pipeline to 880,000 bpd.[25] The Alberta Clipper line brings diluted bitumen to the existing Enbridge Lakehead system that transports both conventional oil and tar sands through Minnesota, Wisconsin, Illinois, Indiana, and Michigan. It was line 6B of the Lakehead system that spilled at least 840,000 and perhaps up to 1.1 million gallons of diluted bitumen into the Kalamazoo River in a catastrophic July 2010 spill.[26] Plans have been proposed to link the Lakehead system from a terminal in Flanagan, Illinois to Cushing, OK via a new line.[27] This would allow diluted bitumen to be moved from Cushing to refineries on the Gulf Coast, where tar sands products could be easily exported.

Transporting diluted bitumen is also the primary purpose of TransCanada's proposed Keystone XL pipeline. This pipeline would run nearly 2000 miles from Alberta through some of America's most sensitive lands and aquifers on the way to refineries on the U.S. Gulf Coast and having a carrying capacity of 830,000 bpd.[28] If approved, the Keystone XL pipeline would bring Canada's total U.S export capacity to in excess of 4.1 million bpd.[29] This would constitute over a third of the total U.S. oil imports.[30] Additionally, a likely reversal of the Portland Montreal Pipe Line in New England would bring tar sands from the Lakehead system through Ontario and

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[22] TRANSCANADA CORP., 2011 ANNUAL REPORT 9 (2012), *available at* http://www.transcanada.com/docs/Investor_Centre/2011_TCC_AR_Eng.pdf (last visited Mar. 15, 2013).

[23] Enbridge, Inc., *Alberta Clipper and Southern Lights*, http://www.enbridge.com/Alberta-Clipper-and-Southern-Lights.aspx (last visited Mar. 15, 2013).

[24] *Id.*

[25] http://www.enbridge.com/EEP-and-ENB-project-expansions-May-2012.aspx.

[26] *See*, http://www.epa.gov/enbridgespill (where EPA reports collecting 1.1 million gallons of oil in the recovery effort). The NTSB report states that 843,444 gallons were spilled. NTSB Report at Abstract.

[27] Enbridge, Inc., *Flanagan South Pipeline Project*, http://www.enbridge.com/FlanaganSouthPipeline.aspx (last visited Mar. 15, 2013).

[28] U. S. Department of State: Keystone XL Project, *Draft Supplemental EIS*, ES-3 (Mar. 2013), *available at* http://keystonepipeline-xl.state.gov/documents/organization/205719.pdf (last visited Mar. 15, 2013). It should be noted that the Keystone XL pipeline, originally proposed as a single project, was bifurcated into two separate projects after it the project was rejected for a Presidential Permit in 2012. TransCanada, the project proponent, is constructing a southern leg from Cushing, OK to the Gulf Coast over public objections and a law suit. The northern segment, which crosses the U.S.-Canadian border, is currently under review for a Presidential Permit.

[29] PAUL W. PARFOMAK, CONGRESSIONAL RESEARCH SERVICE, KEEPING AMERICA'S PIPELINE SAGE AND SECURE: KEY ISSUES FOR CONGRESS (March 13, 2012) at 27, *available at*, http://www.fas.org/sgp/crs/homesec/R41536.pdf.

[30] *Id.*

into northern New England to Portland, ME for shipment.[31] Indeed, any infrastructure carrying one-third of US oil imports should be state of the art and implement practicable measures to diminish safety hazards.

These infrastructure changes represent a massive restructuring of pipeline use that is outpacing safety standards, leaving the public and the environment at risk. Below we detail the risks of transporting diluted bitumen, why existing regulations are not adequate, and why new rulemaking is necessary and required to protect the public. We request that new rulemaking occur. We further request that until such rulemaking occurs and appropriate regulations are in place, no new or expanded pipeline transportation of diluted bitumen be allowed.

I. DILUTED BITUMEN POSES GRAVELY DIFFERENT RISKS THAN CONVENTIONAL CRUDE OIL

Diluted bitumen differs from conventional crude oil in several key ways. Tar sands oil is derived from sand that is impregnated with viscous, extra-heavy oil known as bitumen.[32] Bitumen is the valuable component of tar sands because it can be refined into liquid fuels.[33] In many ways, bitumen is as akin to coal as it is oil, a solid mass that cannot be pumped out of the ground under normal conditions.[34] For years, it was considered a junk fuel: too expensive, too dirty and too impractical to develop.[35] Because it is so viscous and heavy, tar sands oil must be diluted with lighter hydrocarbons before it can be pumped through a pipeline, creating a substance known as diluted bitumen or "dilbit," also known as "heavy crude," "oil sands heavy," and "tar sands oil."[36]

In contrast, conventional crude is a liquid fuel source that flows readily. As Nancy Kinner, a civil and environmental engineering professor at the University of New Hampshire and co-director of the Coastal Response and Research Center who researches submerged oil has stated: "[O]ne would not consider tar sands typical crude oil…It's not considered crude oil by most

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[31] *See*, IHS SPECIAL REPORT, FUTURE MARKETS FOR CANADIAN OIL SANDS 6 (Jan. 2013), *available at* http://www.ihs.com/products/cera/energy-industry/oil-sands-dialogue.aspx; John Dillon, *Oil Exec Says Line Could Be Used for Tar Sands*, RUTLAND HERALD, Feb. 19, 2013, http://www.rutlandherald.com/article/20130219/NEWS03/702199828.

[32] Alberta Energy, *What is Oil Sands?*, http://www.energy.alberta.ca/OilSands/793.asp (last visited Jan. 28, 2013).

[33] CONGRESSIONAL RESEARCH SERVICE, OIL SANDS AND THE KEYSTONE XL PIPELINE: BACKGROUND AND SELECTED ENVIRONMENTAL ISSUES 2 (Jul. 16, 2012), *available at* http://www.fas.org/sgp/crs/misc/R42611.pdf (last visited Mar. 15, 2013).

[34] THE PEMBINA INSTITUTE, OILSANDS, HEAVY CRUDES, AND THE EU FUEL-QUALITY DIRECTIVE 2 (Mar. 2012), *available at* http://www.pembina.org/pub/2325.

[35] Robert Kunzig, *The Canadian Oil Boom*, NATIONAL GEOGRAPHIC MAGAZINE, Mar. 2009, *available at* http://ngm.nationalgeographic.com/2009/03/canadian-oil-sands/kunzig-text (last visited Mar. 15, 2013).

[36] *About Tar Sands*, Oil Shale & Tar Sands Programmatic EIS, http://ostseis.anl.gov/guide/tarsands/index.cfm (last visited Jan. 22, 2013).

people who deal with oil and oil spills."[37] The higher acid number, viscosity, sulfur levels, heavy metal content, quantity of abrasives, and proprietary blend of diluents all make tar sands oil a significant different product than conventional crude. It must be treated differently.

Unlike conventional crude, bitumen must be mined or extracted in-situ.[38] Tar sands strip mining occurs when the bitumen deposits are less than about 75 meters below the surface.[39] In-situ methods are used for deeper deposits and use steam injections to liquefy the bitumen, allowing it to flow out of the reservoir.[40] These extraction techniques are very energy intensive and are a significant part of the reason why tar sands oil produces so much more greenhouse gas emissions than conventional crude.

A. Bitumen Must be Diluted or Refined to be Transported

Bitumen cannot be shipped by pipe in raw form. To be shipped, it must either be refined down to a substance resembling conventional crude or be diluted with chemicals in order for it to flow to upgrading and refining facilities through a pipe.[41] Diluted bitumen is often referred to as "heavy crude," but it differs substantially from many other "heavy crudes" because it must be shipped with diluents.

B. Transport of Diluted Bitumen is Increasing Rapidly

Alberta contains the world's third largest oil reserves, totaling 170.8 billion barrels.[42] Crude bitumen, which is mixed with a diluent to form tar sands oil, comprises 169.3 billion barrels, or over 99 percent of these reserves.[43] The vast majority of tar sands oil coming into the United States was previously upgraded to synthetic bitumen (which resembles lighter crudes) in Canada.[44] However, Canadian refineries are running at full capacity and there are no plans for

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[37] Lisa Song, *A Dilbit Primer: How It's Different from Conventional Oil*, INSIDE CLIMATE NEWS, June 26, 2012 [hereinafter *A Dilbit Primer*], *available at* http://insideclimatenews.org/news/20120626/dilbit-primer-diluted-bitumen-conventional-oil-tar-sands-Alberta-Kalamazoo-Keystone-XL-Enbridge.

[38] NRDC REPORT, *supra* note 6, at 5.

[39] CONGRESSIONAL RESEARCH SERVICE, CANADIAN OIL SANDS: LIFE-CYCLE ASSESSMENTS OF GREENHOUSE GAS EMISSIONS 4 (June 2012), *available at* http://www.fas.org/sgp/crs/misc/R42537.pdf.

[40] *Id.*

[41] NRDC REPORT, *supra* note 6, at 5.

[42] Alberta Energy, *Facts and Statistics*, http://www.energy.gov.ab.ca/OilSands/791.asp (last visited Mar. 15, 2013).

[43] *Id.*

[44] NRDC REPORT, *supra* note 6, at 4.

new refineries to be built.[45] With skyrocketing production of tar sands, more and more tar sands is and will be exported out of Canada as diluted bitumen.[46]

In 2011, Alberta produced 637 million barrels of tar sands oil, which amounts to 1.7 million bpd.[47] According to the Canadian government, tar sands oil production is expected to increase to 3 million bpd in 2018 (about 1.1 billion barrels per year),[48] and to 3.7 million barrels of tar sands oil per day by 2021 (about 1.35 billion barrels per year).[49]

All of this increased production of tar sands oil must go somewhere for processing. The production of synthetic crude, which is derived from "upgrading" bitumen from tar sands, will remain relatively flat since little or no additional upgrading capacity is expected to be built in Canada.[50] As noted by the Canadian Association of Petroleum Producers (CAPP), "[t]ight pipeline capacity as a result of these growing supplies has been one of the major reasons for the discounted prices received by Canadian . . . crude oil producers . . . ."[51] Thus, Enbridge and TransCanada are pursuing pipeline expansion strategies to transport the increasing volumes of "oil sands heavy," or diluted bitumen. Both Enbridge and TransCanada have made clear that they see increasing pipeline capacity to carry crude from Canada into the United States a central part of their growth strategy.[52]

C. Diluted Bitumen is Chemically and Physically Different from Conventional Crude

Compared to conventional crude, diluted bitumen has lower density, is much heavier, is higher in viscosity, has a much higher acid number, has significantly more sediment, is higher in sulfur, and has a higher heavy metal content.[53] Particularly relevant to this petition, these physical differences between diluted bitumen and conventional crude are significant because they impact

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[45] CANADIAN ASSOCIATION OF PETROLEUM PRODUCERS, CRUDE OIL FORECAST, MARKETS & PIPELINES 9 (Jun. 2012), *available at* http://www.CAPP.ca/getdoc.aspx?DocId=209546&DT=NTV (last visited Dec. 12, 2012).

[46] Canadian Press, *Should Canada Refine its Own Oilsands Bitumen?*, CBC NEWS, Aug. 27, 2012, *available at* http://www.cbc.ca/news/politics/story/2012/08/27/pol-cp-oilsands-refinery.html. *See also* NRDC REPORT, *supra* note 6, at 4.

[47] *Production & Reserves*, Energy Resources Conservation Board (last visited Nov. 6, 2012), http://www.ercb.ca/learn-about-energy/energy-in-alberta/production-reserves.

[48] Alberta Energy, *Oil Sands*, http://www.energy.gov.ab.ca/OurBusiness/oilsands.asp (last visited Mar. 15, 2013).

[49] Alberta Energy, *Facts and Statistics*, http://www.energy.gov.ab.ca/OilSands/791.asp (last visited Mar. 15, 2013).

[50] CANADIAN ASSOCIATION OF PETROLEUM PRODUCERS, CRUDE OIL FORECAST, MARKETS & PIPELINES 9 (Jun. 2012), *available at* http://www.CAPP.ca/getdoc.aspx?DocId=209546&DT=NTV (last visited Dec. 12, 2012). Tar sands oil is sometimes diluted with synthetic crude to create a product known as SynBit to reduce viscosity.

[51] *Id*. at 22.

[52] http://www.enbridgeus.com/Delivering-Energy/Growth-Projects/, http://www.transcanada.com/investor/annual_reports/2011/mda/oil_pipelines/outlook.

[53] NRDC REPORT, *supra* note 6, at 6.

how the respective substances move through pipelines, how they affect pipelines, and how they behave in the event of a spill.

The following table summarizes key characteristics of tar sands oil compared to conventional crude oil (West Texas Intermediate):[54]

Characteristic	Tar Sands Oil	Conventional Crude
Density (gravity)	19-21 API	39.6 API
Acidity (total acid number)	0.8-4.3	0-0.3
Viscosity	201 Centistokes (cST)	5 cST
Sulfur Content	2.5%-4.5%	0.3%-0.5%
Heavy Metals	Vanadium, Nickel, Arsenic, others	Negligible

As the chart illustrates, in comparison to conventional crude oil, tar sands oil is approximately twice as dense, forty times more viscous, contains sulfur content 5-10 times higher, contains higher total acid concentrations, and contains higher concentrations of heavy metals.[55] Tar sands oil's "combination of chemical corrosion and physical abrasion can dramatically increase the rate of pipeline deterioration."[56]

[54] This table was constructed from numerous sources, including: The Engineering Toolbox, *Fluids, Kinematic Viscosities*, http://www.engineeringtoolbox.com/kinematic-viscosity-d_397.html (last visited Jan. 24, 2013); Environment Canada, Emergencies Sciences and Technology Division, Oil Properties, *Athabasca Bitumen*, http://www.etc-cte.ec.gc.ca/databases/oilproperties/Default.aspx (Select 'Athabasca Bitumen' from the chart and click 'Locate oil' link below the list) (last visited Jan. 24, 2013); Environmental Science and Technology Centre, Oil Properties Database, *West Texas Intermediate* (2010http://www.etc-cte.ec.gc.ca/databases/oilproperties/Default.aspx (Select 'West Texas Intermediate' from the chart and click 'Locate oil' link below the list). (last visited Jan. 23, 2013); Canadian Association of Petroleum Producers, *TAN Phase III Project Update* 7 (March 25, 2008); Keith A. Couch, James P. Glavin & David L. Shapiro, *The Impact of Bitumen-Derived Feeds on the FCC Unit*, UOP LLC a Honeywell Company (2008), *available at* http://www.uop.com/wp-content/uploads/2011/03 /UOP-FCC-Bitumen-Processing-case-study.pdf (last visited Jan. 23, 2013); Crandall, et al., *Oil Sands Products Analysis for Asian Markets* 102 (Pulvin & Gertz, Inc., 2005), *available at* http://www.energy.alberta.ca/EnergyProcessing/pdfs/products_analysis_ asian_markets.pdf (last visited Jan. 24, 2013); Gareth Crandall, *Non-Conventional Oil Market Outlook* 4 (2002), *available at* http://www.docstoc.com/docs/49228343/Non-Conventional-Oil-Market-Outlook (Click 'Download Document'). (last visited Jan. 24, 2013); National Petrochemical and Refiner's Association, *Question 50, 2008 NPRA Q&A and Technology Forum: Answer Book*. (April 20, 2009).

[55] A. Swift, *Identifying Safety Issues With Diluted Bitumen Pipelines* 5 (NRDC, July 2012), *available at* http://onlinepubs.trb.org/onlinepubs/Dilbit/Swift072312.pdf.

[56] NRDC REPORT, *supra* note 6, at 6.

Diluted bitumen also has high concentrations of chloride salts which can lead to chloride stress corrosion in high temperature pipelines.[57] Moreover, the diluent used is a natural gas condensate that quickly evaporates, quickly spreading toxin laden fumes when spilled.[58] In short, diluted bitumen is an extremely pernicious substance.

D. Diluted Bitumen Places Greater Stress on Pipelines During Transport and Operation than Conventional Crude

Because of its density and viscosity, tar sands oil requires greater pressure to pump it through pipelines, which results in greater heat and friction. The following table summarizes the pressure and heat needed to pump tar sands oil as compared to conventional crude:[59]

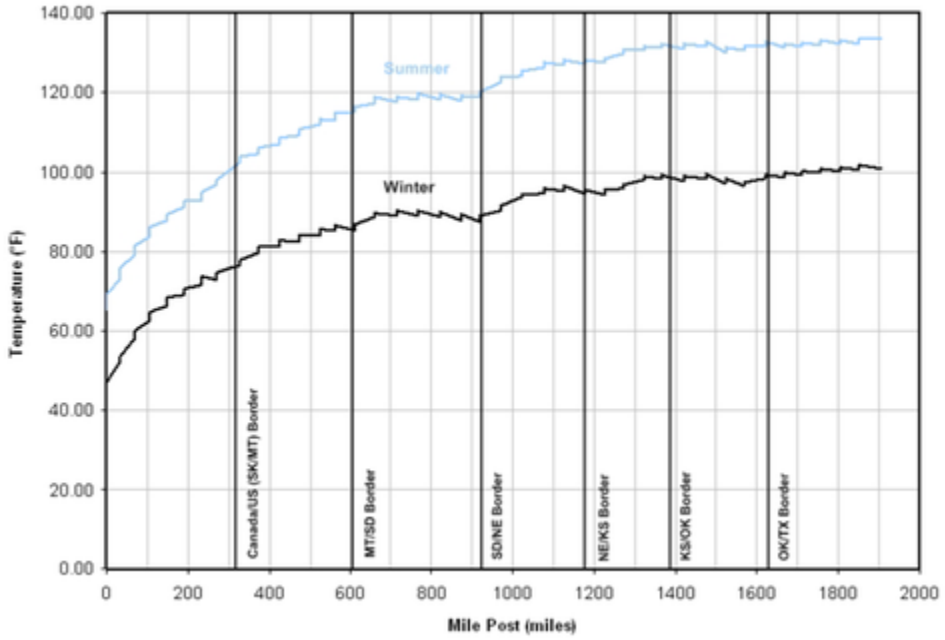
Characteristic	Tar Sands Oil	Conventional Crude
Pipeline Temperature	Up to 158º F	A few degrees above soil temperature
Pipeline Pressure	Up to 2160 psi	<800 psi on average

[57] Baker Hughes, *Planning Ahead for Effective Canadian Crude Processing* 4 (2010), *available at* http://www.bakerhughes.com/assets/media/BAhbBlsHOgZmImJ3aGl0ZXBhcGVycy80YzJhM2M4ZmZhN2UxYzNjNzQwMDAwMWQvZmlsZS8yODI3MS1jYW5hZGlhbl9jcnVkZW9pbF91cGRhdGVfd2hpdGVwYXBlcl8wNi0xMC5wZGY (last visited Mar. 15, 2013); A.I. (Sandy) Williamson, Ammonite Corrosion Eng. Inc., Presentation to the National Association of Corrosion Engineers, *Degradation Mechanisms in the Oilsands Industry* 27 (2006), *available at* http://www.naceedmonton.com/pdf/FtMacPresentation/Ammonite_Degradation%20Mechanisms%20in%20OS%20Operations_NACE_Fort%20Mac_10%2006.pdf (last visited Mar. 15, 2013).

[58] *See*, NTSB REPORT, *supra* note 1, at 62 (levels of benzene and petroleum hydrocarbons were sufficient to require respiratory protection for cleanup workers four days after the spill occurred); *see also* Cynthia Giles, Assistant Administrator for Enforcement and Compliance Assurance, U.S. E.P.A. Letter to Jose Fernandez and Dr. Kerri-Ann Jones, U.S. Department of State 3 (Jun. 6, 2011) (noting that benzene was a component of the diluent present at the Kalamazoo spill, it is a volatile organic compound, and that high benzene levels in the air prompted voluntary evacuation notices to nearby residences), *available at* http://www.eenews.net/assets/2011/06/07/document_gw_02.pdf (last visited Mar. 15, 2013).

[59] The sources for this table include: *Joint Rates, Rules and Regulations Tariff Applying on Petroleum Products*, Colonial Pipeline Company (March 27, 2008), *available at* http://docs.google.com/viewer?a=v&q=cache:AjCOfgP6boQJ:www.colpipe.com/pdfs/Supp%25203%2520FERC%252088Conocophillips.xls.pdf+Colonial+pipeline+specifications+temperature+F&hl=en&gl=us&pid=bl&srcid=ADGEESgnFL1hSRhw0o7f2KD7gH93MxUboEdKoHcMCsuAoNnlm6mjQ4pythJTZbtUm-r6UYUwZYH_h0MYZQQO4BdoBg4Rr8M_zqBi3bTq3ZLd MkB9GXA6-N5uaLMi0PL2Fg1r_Ybqpepl&sig=AHIEtbSA8D1IC4mXOq-mUgRrY4MMB Ro6XA. (Click the "plain HTML" link to be redirected to document); *Keystone Pipeline, United States of America*, Net Resources International, http://www.hydrocarbons-technology.com/projects/keystone_pipeline/ (last visited Jan. 24, 2013); United States Department of State, *Draft Environmental Impact Statement, Keystone XL Oil Pipeline Project, Appendix L: Pipeline Temperature Effects Study* (April 16, 2010), *available at* http://keystonepipeline-xl.state.gov/archive/dos_docs/deis/appendices/index.htm.

Diluted bitumen poses particular threats to pipeline integrity that conventional crude does not pose. Diluted bitumen moving through a pipeline has been aptly described as "fast, hot, and toxic liquid sandpaper."[60] Compared to conventional crude, as described above, it contains a combination of chemical corrosion and physical abrasion can dramatically increase the rate of pipeline deterioration.[61] The high pressure required to move diluted bitumen results in pipelines heating up as the diluted bitumen flows through them. Pipeline temperatures for conventional crudes are just a few degrees above soil temperature, but moving diluted bitumen requires pipelines to be heated to up to 158°F.[62] Following is a graphic provided from TransCanada for the environmental review process for the Keystone XL that shows how hot the material moving through that pipe would be.



[63]

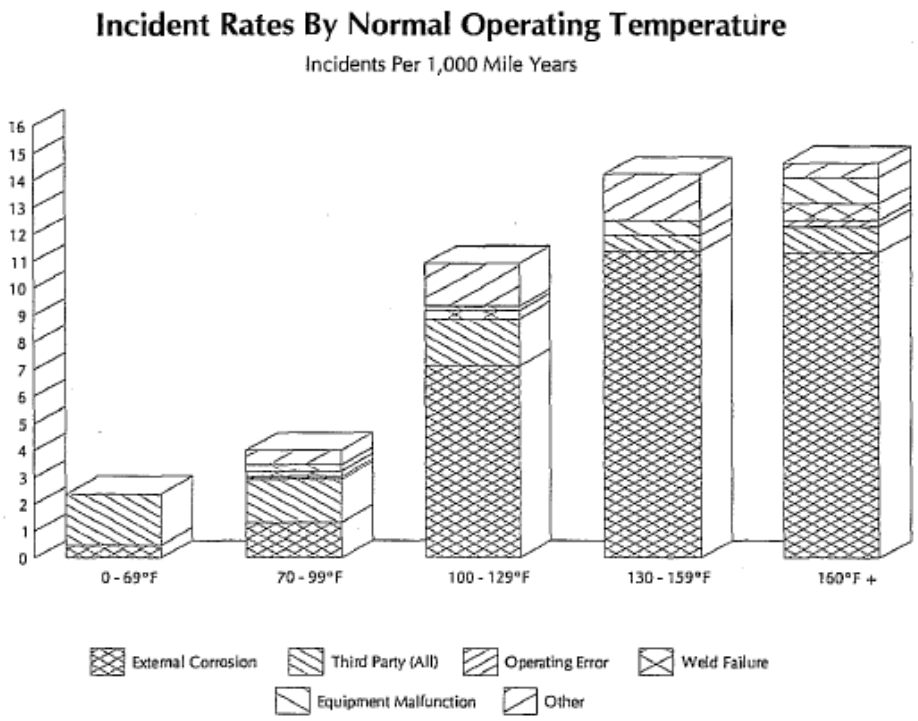
[60] NATURAL RESOURCES DEFENSE COUNCIL ET AL, GOING IN REVERSE: THE TAR SANDS OIL THREAT TO CENTRAL CANADA AND NEW ENGLAND 2 (April 2002), *available at* http://www.nrdc.org/energy/going-in-reverse.asp (Under 'Read the Report,' click Full Report (PDF). link).

[61] NRDC REPORT, *supra* note 6, at 6.

[62] ANTHONY SWIFT, NATURAL RESOURCES DEFENSE COUNCIL, PRESENTATION TO NATIONAL ACADEMY OF SCIENCES, UNDERSTANDING SAFETY ISSUES WITH DILUTED BITUMEN PIPELINES 5 (July 2012), *available at* http://onlinepubs.trb.org/onlinepubs/Dilbit/Swift072312.pdf.

[63] U.S. DEPT. OF STATE, DRAFT SUPPLEMENTAL EIS, KEYSTONE XL PROJECT, APP.S, PIPELINE TEMPERATURE EFFECTS STUDY, at S-2 (Mar. 2013), *available at* http://keystonepipeline-xl.state.gov/documents/organization/205567.pdf . This chart may prove to be conservative – Keystone 1's maximum temperature is listed as 158 degrees F.

A study from the early 1990s found that higher temperatures results in more spills. Here is a telling graphic from that study:[64]



Moving diluted bitumen furthermore requires pipelines to be highly pressurized. Industry defines a high pressure pipeline as one that operates over 600 pounds per square inch (psi).[65] Conventional crude in the U.S. is moved at about 800 pounds psi, while the pressure for Enbridge's proposed Northern Gateway Pipeline would be 2160 psi.[66] The Keystone tar sands pipeline operates at pressures up to 1440 psi.[67]

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[64] CALIFORNIA STATE FIRE MARSHAL, RELATIONSHIP BETWEEN PIPELINE TEMPERATURE AND SPILLS, HAZARDOUS LIQUID PIPELINE RISK ASSESSMENT 69 (Mar. 1993), *available at*, http://osfm.fire.ca.gov/pipeline/pdf/publication/pipelineriskassessment.pdf.

[65] Shell Oil Company, *Pipeline Terminology*, http://www.shell.us/products-services/solutions-for-businesses/pipeline/pipeline-america/terminology.html (last visited Mar. 15, 2013).

[66] *Id.*

[67] "Keystone Pipeline, USA," Net Resources International, 2011, http://www.hydrocarbons-technology.com/projects/keystone_pipeline (last visited Jan. 12, 2011); *Draft Environmental Impact Statement for Keystone XL, Appendix L: Pipeline Temperature Effects Study*, U. S. Department of State, 2010. The DEIS and its appendices for Keystone XL can be found via http://www.keystonepipeline-xl.state.gov.

High pressure and heat increase the corrosive effects diluted bitumen has on pipelines. An accepted industry rule of thumb is that the rate of corrosion doubles with every twenty degree Fahrenheit increase in temperature.[68] At high temperatures, the mixture of light, gaseous condensate, and thick, heavy bitumen, can become unstable.[69] Variations in pipeline pressure can cause the natural gas liquid condensate to change from liquid to gas form. This creates gas bubbles within the pipeline. When bubbles form and collapse, they release bursts of high pressure that can deform pipeline metal.[70] The instability of diluted bitumen can render pipelines particularly susceptible to ruptures caused by pressure spikes.[71]

While movement of diluted bitumen is new to United States pipelines, since the 1980s, it has been regularly moved through pipelines in Alberta. By 2009, over two-thirds of all crude produced in Alberta was transported as diluted bitumen at some point.[72] Due to differences in data collection and regulation between Alberta and the United States, any comparison is imprecise, but the information from Canada is nevertheless informative and alarming. Despite its relatively recent construction, Alberta's hazardous liquid pipeline system had 218 spills greater than 26.3 gallons per 10,000 miles of pipeline caused by internal corrosion from 2002 to 2010, compared to 13.6 spills greater than 26 gallons per 10,000 miles of pipeline from internal corrosion reported in the United States during that same time period.[73] Thus, based on this data, the rate of spills due to internal corrosion is sixteen times higher in Alberta than in the United States. This strongly indicates that diluted bitumen has potentially extreme corrosive impacts on pipelines that will lead to frequent spills.

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[68] *See*, CIRIA, Chemical Storage Tank Systems – Good Practices, p. 204.

[69] "Expert Viewpoint – Phase Behaviors of Heavy Oils and Bitumen," Schlumberger Ltd., 2011, http://www.heavyoilinfo.com/feature_items/expert-viewpoint-phase-behavior-of-heavyoils-and-bitumen-with-dr.-john-m.-shaw (last visited Jan. 12, 2011). *See also*: Changjun Li et al., *Study on Liquid-Column Separation in Oil Transport Pipeline*, ASCE Conf. Proc. 361, p. 54, 2009, http://cedb.asce.org/cgi/WWWdisplay.cgi?175441 (last visited Jan. 12, 2011).

[70] This phenomenon is known as cavitation. A. I. (Sandy) Williamson, *Degradation Mechanisms in the Oilsands Industry*, Calgary, Alberta: Ammonite Corrosion Eng. Inc., 2006, Presentation to the National Association of Corrosion Engineers, slide 31, http://www.naceedmonton.com/pdf/FtMacPresentation/Ammonite_Degradation%20Mechanisms%20in%20OS%20Operations_NACE_Fort%20Mac_10%2006.pdf (last visited Jan. 12, 2011).

[71] Zou, X-Y, Shaw, J.M., Challenges Inherent in the Development of Predictive Deposition Tools for Asphaltene Containing Hydrocarbon Fluids, Petroleum Science and Technology, 22(7&8), 2004, 773-786.

[72] Tar sands constituted 69 percent of Alberta's production in 2009. A portion of this was transported as diluted bitumen to upgraders in Alberta and the rest was exported, as dilbit, to refineries elsewhere in Canada and in the United States. Energy Resources Conservation Board, Alberta's Energy Reserves 2009 and Supply/Demand Outlook, 2010-2019, June 2010, p. 2-18, http://www.ercb.ca/sts/ST98/st98_2010.pdf (last visited Jan. 12, 2011).

[73] NRDC REPORT, *supra* note 6, at 8. Alberta's pipeline system is newer than the United States pipeline system. Over half of the pipelines currently operating in Alberta have been built in the last twenty years as the tar sands region developed. In contrast, the majority of hazardous liquid pipelines in the United States are more than forty years old. This matters because the older a pipeline is the likely it is to have defects and weaknesses due to wear and old technology fails to keep pace with current standards.

E. Bitumen Behaves Differently and More Dangerously than Conventional Crude When Spilled

The density, viscosity, higher acid number, and toxicity of tar sands oil make it substantially more damaging and difficult to contain and respond to when it is released into the environment.

The chemical composition of diluted bitumen impacts how it behaves once spilled. While every type of crude oil is composed of hundreds of chemical compounds ranging from light to heavy, the vast majority of chemicals in conventional oils are in the middle of the range.[74] However, diluted bitumen has very few mid-range compounds. Instead, it is composed of very light diluents and very heavy bitumen.[75] "Because bitumen makes up 50 to 70 percent of the composition of dilbit, at least 50 percent of the compounds in dilbit are likely to sink in water, compared with less than 10 percent for most conventional crude oils," a difference that is critical in the context of spill response.[76] In short, diluted bitumen sinks when it is spilled making response extremely challenging and resource intensive.

Conventional crude oil can be contained, skimmed, absorbed, or consumed because it typically floats on water.[77] Because tar sands oil is so much heavier, much of it sinks and sticks to the substrate.[78] Moreover, heavy oil exposed to sunlight forms an even stickier substance that is difficult to remove from rocks and sediment.[79] In addition, the various toxic substances in tar sands oil bioaccumulate in humans and wildlife, so their harmful impacts continue with time.[80] As noted in the recent Draft Supplemental EIS to the proposed Keystone XL pipeline:

> As with some other types of oil, Dilbit will not float on water indefinitely. The Dilbit-specific characteristics, water temperature, and particulate load in the water could result in much of the oil being submerged in the water column. Submerged oil can be suspended in the water column, suspended just above the river bed, or intermixed with sediment and trapped in the river bed and shoreline. In flowing waters, the spreading of the oil in three dimensions creates many challenges for

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[74] Lisa Song, *Is Dilbit Oil? Congress and the IRS Say No*, TRUTHOUT, Aug. 4, 2012, *available at* http://truth-out.org/news/item/10693-is-dilbit-oil-congress-and-the-irs-say-no.
[75] *Id.*
[76] *Id.*
[77] *How do you clean up an oil spill?*, University of Delaware Sea Grant Program (2004), http://www.ceoe.udel.edu/oilspill/cleanup.html.
[78] *Tar Sands Oil Spill in Kalamazoo River in Michigan the Most Expensive Onshore Oil Spill in History*, Motley News and Photos (July 11, 2012), http://motleynews.net/2012/07/11/tar-sands-oil-spill-in-kalamazoo-river-in-michigan-the-most-expensive-onshore-oil-spill-in-history.
[79] NRDC REPORT, *supra* note 6, at 7.
[80] *Canada's Tar Sands*, Nature Canada, http://www.naturecanada.ca/tarsands_habitat.asp (last visited Jan. 24, 2013).

> responders to minimize the impacts of the release. Consideration of submerged oil in a flowing water environment would require different response action planning and response equipment to contain and recover the submerged oil. Dilbit intermixed with sediment and trapped in the river bed and shoreline results in a persistent source of oil and will present new response and recovery challenges. The understanding and adaptation of response and recovery techniques to Dilbit spills in flowing water scenarios continues along the Kalamazoo River in response to the 2010 Enbridge release near Marshall, Michigan. As the response to the Marshall Michigan Dilbit spill continues to mature and evolve, the lessons learned from the response and recovery efforts should be considered to facilitate the implementation of proper response planning and response strategies to improve the overall response to Dilbit spills.[81]

Likewise, the Draft SEIS recognized:

> Dilbit released into an aquatic environment could sink to the bottom of the water column and coat the benthic substrate and sediments. Dilbit intermixed with sediment, trapped in the river bed or on an oiled shoreline would result in a persistent source of oil due to the slow rate of degradation of Dilbit in these environments. Dissolved components of the Dilbit such as benzene, PAHs, and heavy metals could be slowly released back to the water column for many years after the release. The dissolved components (e.g. benzene, PAHs, heavy metals) could allow for long term chronic toxicological impacts to many organisms (e.g. macro-invertebrates) in both the benthic and pelagic portions of the aquatic environment.[82]

The substantially greater impacts of tar sands oil on the environment are illustrated by the Kalamazoo River spill.[83] The heavy bitumen sank to the river bottom, coating wildlife, rocks and sediment.[84] At the time of the Kalamazoo spill, Enbridge's CEO denied that the pipeline

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[81] U.S. Dept. of State, Draft Supplemental EIS Keystone XL Project, 4.13-60 (Mar. 2013), *available at* http://keystonepipeline-xl.state.gov/documents/organization/205621.pdf (last visited Mar. 15, 2013).
[82] *Id*. at 4.13-26.
[83] Environmental Protection Agency, Region V, *Pollution/Situation Report #166* 8 (Oct. 29, 2012), *available at* http://www.EPA.gov/enbridgespill/pdfs/sitreps/20121025_sitrep_166.pdf.
[84] NTSB REPORT; David Sassoon, *Crude, Dirty and Dangerous*, N.Y. Times (Aug. 20 2012), *available at* http://www.nytimes.com/2012/08/21/opinion/the-dangers-of-diluted-bitumen-oil.html?_r=0.

was carrying tar sands oil.[85] As investigations began to reveal that the substance was indeed tar sands, the CEO finally admitted that the leak was tar sands oil.[86]

The response to this diluted bitumen spill is far from complete.[87] Cleanup costs are at approximately $800 million and rising, making Kalamazoo by far the most expensive pipeline oil spill in U.S. history.[88] The Kalamazoo spill demonstrates that tar sands oil is unusually damaging and difficult to remediate if it leaks or spills into the environment.

In addition, diluted bitumen contains significant quantities of toxins. Oil giant Imperial Oil has reported that diluted bitumen contains a variety of toxins including hydrogen sulfide, benzene, and polynuclear aromatic hydrocarbons.[89] These chemical compounds can cause a variety of significant human health problems including, but not limited to, breathing difficulty, dizziness, damage to the central nervous system, coma, cancer, and death.[90] According to Environment Canada, the chief Canadian federal environmental regulatory arm, diluted bitumen also contains toxic compounds such as arsenic, nickel, and vanadium[91] in larger quantities than what is found in conventional crude.[92] These heavy metals do not biodegrade and accumulate in the environment, becoming an ongoing threat to the health of people and wildlife long after their initial toxic impacts are felt.[93]

The low flash point and high vapor pressure of the natural gas liquid condensate used to dilute the bitumen also increase the risk of the leaked material exploding.[94] Diluted bitumen can form

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[85] *Michigan Oil Spill Increases Concern Over Tar Sands Pipelines*, OnEarth (Aug. 6, 2010), http://www.onearth.org/article/michigan-oil-spill-tar-sands-concerns.

[86] *Michigan Oil Spill: The Tar Sands Name Game (and Why It Matters)*, OnEarth (Aug. 12, 2010), http://www.onearth.org/node/2410.

[87] Sandy Smith, EHS Today, *EPA: More Work Needed to Clean up Enbridge Oil Spill in Kalamazoo River* (Oct. 5, 2012), *available at* http://ehstoday.com/environment/epa-more-work-needed-clean-enbridge-oil-spill-kalamazoo-river.

[88] NTSB Press Release, *supra* note 9.

[89] Imperial Oil, Material Safety Data Sheet: DilBit Cold Lake Blend (2002), *available at* http://www.msdsxchange.com/english/show_msds.cfm?paramid1=2479752.

[90] *Id.*

[91] Environment Canada, Athabasca Bitumen, *available at* http://www.etc-cte.ec.gc.ca/databases/OilProperties/pdf/WEB_Athabasca_Bitumen.pdf.

[92] NRDC REPORT, *supra* note 6, at 7.

[93] *Id.*

[94] There are numerous cases of pipeline explosions involving NGL condensate, including the Jan. 1, 2011 explosion of a NGL condensate line in northern Alberta ("Pengrowth investigates pipeline explosion in northern Alberta," *The Globe and Mail*, Jan. 2, 2011, http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/pengrowth-investigates-pipeline-explosion-in-northern-alberta/article1855533 (last visited Jan. 12, 2011)); and the 2007 explosion of an NGL pipeline near Fort Worth Texas after it had been ruptured by a third party ("No Injuries In Parker Co. Gas Pipeline Explosion," *AP/CBS 11 News*, 12 May 2007, http://www.keiberginc.com/web_news_files/pipelineexplosion-pr1.pdf (last visited Jan. 12, 2011)).

an ignitable and explosive mixture in the air at temperatures above 0 degrees Fahrenheit.[95] This mixture can be ignited by heat, spark, static charge, or flame.[96] One of the potential toxic products of a diluted bitumen explosion is hydrogen sulfide, a gas which can cause suffocation in concentrations over 100 parts per million and is identified by producers as a potential hazard associated with a diluted bitumen spill.[97] Enbridge identified hydrogen sulfide as a potential risk to its field personnel during its cleanup of the Kalamazoo River spill.[98]

Diluted bitumen further presents many troubling unknowns that complicate spill response. This is in large part because current regulations do not require adequate reporting by industry of the chemical composition of diluted bitumen and allow industry to claim that the composition of diluted bitumen can be kept secret for trade purposes. Both EPA and the Canadian Department of Fisheries and Oceans (DFO) have raised serious concerns about this matter.[99]

EPA specifically raised concerns about the differences between conventional crude and diluted bitumen spills in its comments on the 2010 Draft Environmental Impact Statement for the proposed Keystone XL Pipeline. One of EPA's most significant concerns centered on the fact that regulators do not have sufficient information regarding the chemical composition of the diluted bitumen since the chemical properties of the diluent are kept secret by the industry. EPA notes that:

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[95] "Material Safety Data Sheet: Natural Gas Condensates," Imperial Oil, 2002, http://www.msdsxchange.com/english/show_msds.cfm?paramid1=2480179 (last visited Jan. 12, 2011).

[96] "Material Safety Data Sheet: Natural Gas Condensate, Petroleum," Oneok, 2009, http://www.oneokpartners.com/en/CorporateResponsibility/~/media/ONEOK/SafetyDocs/Natural%20Gas%20Condensate%20Petroleum.ashx (last visited Jan. 12, 2011).

[97] "Hydrogen Sulfide," Occupational Safety and Health Administration, Fact Sheet, 2005, http://www.osha.gov/OshDoc/data_Hurricane_Facts/hydrogen_sulfide_fact.pdf (last visited Jan. 12, 2011); "Material Safety Data Sheet: DilBit Cold Lake Blend," Imperial Oil, 2002, http://www.msdsxchange.com/english/show_msds.cfm?paramid1=2479752 (last visited Jan. 12, 2011).

[98] *Enbridge Line 6B 608 Pipeline Release, Marshall Michigan, Health and Safety Plan*, Enbridge, Inc., 2010, http://www.epa.gov/enbridgespill/pdfs/finalworkplanpdfs/enbridge_final_healthsafety_20100819.pdf, (last visited Jan. 12, 2011).

[99] For example, Dr. Kenneth Lee, Director of DFO's Centre for Offshore Oil Gas and Energy Research, wrote in a 2011 research proposal that the "Northern Gateway pipeline proposal [a proposed Canadian line from the tar sands region in Alberta to the British Columbia coast] lacks key information on the chemical composition of the reference oils used in the hypothetical spill models." Will Campbell & Vivian Luk, *Enbridge Cleanup Plan Does Not Take Bitumen into Account,* THE GLOBE & MAIL, August 26, 2012, *available at* http://www.theglobeandmail.com/news/british-columbia/enbridge-cleanup-plan-does-not-take-bitumen-into-account/article4500233/. He proposed a series of studies to gain a better understanding of this matter, nothing that he was "'uncertain' whether traditional methods to contain and oil spill and clear contaminated water would be effective." Haz Mat Staff, *SPILL DEBATE: Conventional Crude vs. Oil Sands Bitumen*, DAILY NEWS, August 31, 2012, *available at* http://www.hazmatmag.com/news/spill-debate-conventional-crude-vs-diluted-oilsands-bitumen/1001659664/. Dr. Lee's concern stemmed from the fact that Enbridge's response plan for a potential spill from the proposed Northern Gateway pipeline was essentially a plan for conventional crude that did not take into account the differences between conventional and tar sands derived oils.

> [I]n order for the bitumen to be transported by the pipeline, it will be either diluted with cutter stock (the specific composition of which is proprietary information to each shipper) or an upgrading technology is applied to convert the bitumen to synthetic crude oil. . . . Without more information on the chemical characteristics of the diluent or the synthetic crude, it is difficult to determine the fate and transport of any spilled oil in the aquatic environment. For example, the chemical nature of the dilutent [sic] may have significant implications for response as it may negatively impact the efficacy of traditional floating oil spill response equipment or response strategies. In addition, the Draft EIS addresses oil in general and as explained earlier, it may not be appropriate to assume this bitumen oil/synthetic crude shares the same characteristics as other oils… We recommend that a more complete chemical/physical profile of the oil and details describing the processing activities be provided. . . . [100]

EPA echoed these comments in its 2011 letter regarding the Draft Supplemental EIS for the proposed Keystone XL pipeline:

> With regard to the chemical nature of the diluents that are added to reduce the viscosity of bitumen, the SDEIS states "the exact composition may vary between shippers and is considered proprietary information" (SDEIS, pg. 3-104). We believe an analysis of potential diluents is important to establish the potential health and environmental impacts of any spilled oil, and responder/worker safety, and to develop response strategies. In the recent Enbridge oil spill in Michigan, for example, benzene was a component of the diluent used to reduce the viscosity of the oil sands crude so that it could be transported through a pipeline. Benzene is a volatile organic compound, and following the spill in Michigan, high benzene levels in the air prompted the issuance of voluntary evacuation notices to residents in the area by the local county health department.[101]

Benzene also occurs in conventional crude, but the levels of benzene present in the environment after the spill in Michigan were far more acute than what would have been found after a spill of conventional crude.[102]

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[100] Comment Letter from Cynthia Giles, Assistant Administrator for Enforcement and Compliance Assurance, U.S. EPA to Jose W. Fernandez and Kerry-Ann Jones, U.S. Department of State, at 2 (July 16 2010).

[101] Comment Letter from Cynthia Giles, Assistant Administrator for Enforcement and Compliance Assurance, U.S. EPA to Jose W. Fernandez and Kerry-Ann Jones, U.S. Department of State, at 3 (June 6 2011).

[102] U.S. DEPT. OF STATE, DRAFT EIS, KEYSTONE XL PROJECT, APP. Q. PIPELINE RISK ASSESSMENT AND ENVIRONMENTAL CONSEQUENCE ANALYSIS, at 4-9 to -10 (Mar. 2013) (showing significantly higher levels of

The tragic consequences of the Kalamazoo spill were detailed in a July 2012 report by the National Transportation Safety Board (NTSB).[103] The report was highly critical of Enbridge, the pipeline operator, and the existing federal regulatory framework. The NTSB found that, "Pervasive organizational failures by a pipeline operator *along with weak federal regulations* led to a pipeline rupture and subsequent oil spill in 2010… This accident is a wake-up call to the industry, the regulator, and the public."[104] Not only was the pipeline rupture not addressed for over seventeen hours, Enbridge's operators twice pumped additional oil through the pipeline, constituting eighty-one percent of the total release.[105] The response costs are estimated at around $800 million and counting, making this diluted bitumen spill the most expensive on-shore spill in U.S. history.[106]

When the spill occurred, the heavy bitumen sank to the river bottom and the lighter chemicals used to dilute the bitumen evaporated.[107] Resulting toxic fumes forced local residents to flee from their homes and over 300 people suffered from immediate illness due to benzene exposure.[108] A recent report filed by the Michigan Department of Community Health found that nearly sixty percent of individuals living in the vicinity of the Kalamazoo River spill experienced respiratory, gastrointestinal, and neurological symptoms consistent with acute exposure to benzene and other petroleum related chemicals.[109] The long term consequences for these people who were exposed to benzene and other compounds contained in the diluted bitumen remain unknown. It took several weeks for officials to be informed that the spilled substance was diluted bitumen: up to that point they did not even know the name of the substance they were responding to because federal law does not require pipeline operators to reveal the specific contents of their pipelines and Enbridge did not initially volunteer this information.[110]

The response to the Kalamazoo River spill has thus far required more than 2000 personnel, over 150,000 feet of boom, 175 heavy spill response trucks, forty-three boats, and forty-eight oil

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estimated benzene concentrations following a synthetic crude spill versus a diluted bitumen spill), http://keystonepipeline-xl.state.gov/draftseis/index.htm (Click on Appendix Q Pipeline Risk Assessment and Environmental Consequence Analysis) (last visited Mar. 15, 2013).

[103] *Id.*

[104] NTSB Press Release, *supra* note 9. (emphasis added).

[105] NTSB REPORT, *supra* note 1, at xii.

[106] NTSB Press Release, *supra* note 9.

[107] David Sassoon, *Crude, Dirty and Dangerous*, NEW YORK TIMES, August 20, 2012, *available at* http://www.nytimes.com/2012/08/21/opinion/the-dangers-of-diluted-bitumen-oil.html?_r=1.

[108] NTSB Press Release, *supra* note 9.

[109] MARTHA STANBURY ET AL., ACUTE HEALTH EFFECTS OF THE ENBRIDGE OIL SPILL, LANSING, MI: MICHIGAN DEPARTMENT OF COMMUNITY HEALTH, November 2010, http://www.michigan.gov/documents/mdch/enbridge_oil_spill_epi_report_with_cover_11_22_10_339101_7.pdf (last visited Jan. 12, 2011).

[110] David Sassoon, Crude, *Dirty and Dangerous,* NEW YORK TIMES, August 20, 2012, *available at* http://www.nytimes.com/2012/08/21/opinion/the-dangers-of-diluted-bitumen-oil.html?_r=1.

skimmers.[111] Yet, the response is still not complete and the river may never be restored.[112] Despite already spending eighteen times more than would be spent on a spill of conventional oil, cleanup crews are still working to remove residual oil from the riverbed and wetlands.[113] On October 3, 2012 EPA issued an order to Enbridge demanding that the company undertake additional efforts to continue to "remove and mitigate the effects of oil discharged."[114] On March 14, 2013, EPA ordered dredging of the river to contain further contamination from lingering oil.[115] The response to this spill is likely to continue for many years. As reported in a recent New York *Times* piece on the anniversary of the Kalamazoo spill, the "accident underscored not only how different dilbit is from conventional oil, but how unprepared we are for the impending flood of imports."[116]

In the aftermath of the Kalamazoo Spill, EPA issued multiple statements that the nature of the diluted bitumen spill presented different and more severe challenges than spills of conventional crude. For instance, EPA's On-Site Spill Coordinator Mark Durno stated:

> Where we thought we might be winding down our piece of the response, we're actually ramping back up. The submerged oil is a real story –it's a real eye-opener. … 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.[117]

Similarly, Susan Hedman, EPA Region 5 Administrator, said in a press interview that:

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[111] PLAINS JUSTICE, THE NORTHERN GREAT PLAINS AT RISK: OIL SPILL PLANNING DEFICIENCIES IN KEYSTONE PIPELINE SYSTEM 9 (Nov. 23, 2010), *available at* http://plainsjustice.org/files/Keystone_XL/Keystone%20Pipeline%20Oil%20Spill%20Response%20Planning%20Report%202010-11-23%20FINAL.pdf (last visited Mar. 15, 2013).

[112] *See*, U.S. Environmental Protection Agency, Press Release, *EPA Orders Enbridge to Perform Additional Dredging to Remove Oil from Kalamazoo River*, Mar. 14, 2013, http://yosemite.epa.gov/opa/admpress.nsf/0/19CDD21822F762CD85257B2E006ECBB9 (last visited Mar. 15, 2013).

[113] NATIONAL WILDLIFE FEDERATION, IMPORTING DISASTER, THE ANATOMY OF ENBRIDGE'S ONCE AND FUTURE OIL SPILLS 3 (2012), *available at* http://www.nwf.org/~/media/PDFs/Global-Warming/Reports/NWF_EnbridgeOilSpill_WEB_Final.ashx.

[114] EPA Region 5, In the Matter of Enbridge et. al., Order for Removal Under Section 311(c) of the Clean Water Act, Docket No: CWA (2012), *available at* http://xa.yimg.com/kq/groups/468332/45287179/name/20121003-proposed-order-for-removal.pdf.

[115] *See* U.S. Environmental Protection Agency, Press Release, *EPA Orders Enbridge to Perform Additional Dredging to Remove Oil from Kalamazoo River*, Mar. 14, 2013, http://yosemite.epa.gov/opa/admpress.nsf/0/19CDD21822F762CD85257B2E006ECBB9 (last visited Mar. 15, 2013).

[116] David Sassoon, *Crude, Dirty and Dangerous*, NEW YORK TIMES, August 20, 2012, *available at* http://www.nytimes.com/2012/08/21/opinion/the-dangers-of-diluted-bitumen-oil.html?_r=1.

[117] OnEarth blog, July 25, 2011 http://www.onearth.org/article/tar-sands-oil-plagues-a-michigan-community

> After a comprehensive assessment this past spring, we've identified approximately 200 acres contaminated with submerged oil that will require further clean up. Capturing and cleaning up this heavy oil is a unique challenge. No one at the EPA can remember dealing with this much submerged oil in a river.[118]

Ralph Dollhopf, EPA incident commander for Kalamazoo, stated that in response to the spill EPA is "writing the book" on how to respond to these kinds of spills and that "[a]t minimum, we're writing a chapter in the oil spill cleanup book on how to identify submerged oil. … We're writing chapters on how it behaves once it does spill (and) how to recover it."[119] Dollhopf further stated that when Enbridge's pipeline ruptured, the lighter part of the oil evaporated, "making the heavy mixture even more heavy as it moved down the creek and down the river; it had an increased tendency to sink… It's the nature of the mixture of the oil that caused it to sink."[120] In a separate interview he added that:

> I would never have expected ... that we would have spent two or three times longer working on the submerged oil than surface oil. I don't think anyone at the EPA anticipated that, I don't think anyone at the state level anticipated that, I don't think anyone in industry anticipated that.[121]

F. Leaks of Diluted Bitumen are More Difficult to Detect than Conventional Crude Leaks

Leaks in diluted bitumen pipelines are often more difficult to detect than leaks in pipelines carrying just conventional crude. As diluted bitumen flows through a pipeline, pressure changes within the pipeline can cause the natural gas liquid condensate component to move from liquid to gas phase.[122] This forms a gas bubble that can impede the flow of oil. Because this phenomenon – known as column separation – presents many of the same signs as a leak to pipeline operators,

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[118] *American Independent Article*, *http://dirtyoilsands.org/news/article/after_kalamazoo_river_oil_spill_heavy_metal_levels_rise*

[119] Blog on Stop Tar Sands Oil Pipelines, October 2011 http://stoptarsands.org/tar-sands-spills; *see also The Kalamazoo Gazette*, July 24, 2011 http://www.mlive.com/news/kalamazoo/index.ssf/2011/07/kalamazoo_river_oil_spill_resp.html

[120] Blog on Stop Tar Sands Oil Pipelines, October 11, 2011 http://stoptarsands.org/public-comment-submitted-u-s-national-interest-determination; *see also The Kalamazoo Gazette*, July 24, 2011 http://www.mlive.com/news/kalamazoo/index.ssf/2011/07/kalamazoo_river_oil_spill_resp.html

[121] *The Tyee*, March 5, 2012 http://thetyee.ca/News/2012/03/05/Diluted-Bitumen/

[122] A. Bergant and A. R. Simpson, "Cavitation in Pipeline Column Separation," 1999, http://www.iahr.org/membersonly/grazproceedings99/doc/000/000/112.htm (last visited Jan. 12, 2011).

real leaks may go unnoticed. The proper response to column separation is to pump more oil through the pipeline, making misdiagnoses potentially devastating.[123]

During the Kalamazoo River spill, the Enbridge pipeline gushed for more than seventeen hours before the pipeline was finally shut down, and control center staff attributed system-generated alarms to column separation rather than a leak.[124] Ultimately, emergency responders were not notified until more than eighteen hours after the spill began.[125]

In sum, diluted bitumen is significantly different from conventional crude in its chemical and physical makeup, almost certainly poses higher and more acute risks during transport, and behaves in a more dangerous, destructive and toxic manner than spills of conventional crude. In order to protect the public and impacted resources, these differences need to be accounted for in regulations governing pipeline safety and spill response.

G. Tar Sands Oil is Much More Greenhouse Gas Intensive and Results in More Significant Climate Impacts than Conventional Crude Oil

Utilizing tar sands oil results in much greater greenhouse gas emissions and climate impacts than conventional crude oil. There are two primary reasons for these increased climate impacts: (1) the heaviness and viscosity of tar sands oil requires more energy and resource-intensity for extraction, and (2) its chemical composition requires more refining to yield consumable fuels.

Accordingly, the greenhouse gas emissions from tar sands oil are up to 111 percent greater than the average crude oil refined in the U.S., on a well-to-tank basis; and up to twenty percent greater on a well-to-wheel basis.[126]

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[123] Matthew McClearn, "Enbridge: Under Pressure," *Canadian Business*, December 6, 2010, http://www.canadianbusiness.com/markets/commodities/article.jsp?content=20101206_10023_10023 (last visited Jan. 12, 2011).

[124] U.S. DEPT. OF STATE, DRAFT EIS, KEYSTONE XL PROJECT, APP. Q. PIPELINE RISK ASSESSMENT AND ENVIRONMENTAL CONSEQUENCE ANALYSIS, at 4-9 to -10 (Mar. 2013) (showing significantly higher levels of estimated benzene concentrations following a synthetic crude spill versus a diluted bitumen spill), http://keystonepipeline-xl.state.gov/draftseis/index.htm (Click on Appendix Q Pipeline Risk Assessment and Environmental Consequence Analysis) (last visited Mar. 15, 2013).

[125] Deborah Hersman, Chairman of the National Transportation Safety Board, Testimony before Committee on Transportation and Infrastructure, September 15, 2010, http://www.ntsb.gov/news/speeches/hersman/daph100915.html (If link doesn't work, go to http://www.ntsb.gov/news/speeches_hersman.html and click on the September 15, 2010 speech listed under 2010) (last visited Jan. 12, 2011).

[126] Congressional Research Service, *Oil Sands and the Keystone XL Pipeline: Background and Selected Environmental Issues* 25 (Jul. 16, 2012), *available at* http://www.fas.org/sgp/crs/misc/R42611.pdf . Well-to-wheel accounts for fuel combustion.

The huge volumes of tar sands oil that are available, combined with its vastly greater greenhouse gas emissions and climate impacts, mean that exploitation of these tar sands en masse will be, in the words of one of America's most prominent climate scientists, "game over" for the climate.[127]

II. FEDERAL PIPELINE SAFETY LAWS REQUIRE PROPER REGULATION OF TRANSPORTATION OF DILUTED BITUMEN

Concerns over tar sands and diluted bitumen transportation have been building since the Kalamazoo disaster and the increasing number of spills on the Keystone I pipeline.[128] On January 3, 2012, President Obama signed into law the Pipeline Safety, Regulatory Certainty and Job Creation Act of 2011 (the Pipeline Safety Act of 2011).[129] In the Pipeline Safety Act of 2011, Congress mandated that "the Secretary of Transportation shall complete a comprehensive review of hazardous liquid pipeline facility regulations to determine whether the regulations are sufficient to regulate pipeline facilities used for the transportation of diluted bitumen. In conducting the review, the Secretary shall conduct an analysis of whether any increase in the risk of a release exists for pipeline facilities transporting diluted bitumen."

Congress is not the only body to question the adequacy of current regulations to protect the public and the environment from the transport of diluted bitumen through pipes. The NTSB specifically pointed to "weak federal regulations" as an aggravating factor in the Kalamazoo spill.

The current regulatory structure simply fails to account for the unique risks of transporting and responding to tar sands spills and to fulfill the statutory obligation to protect the public and the environment from diluted bitumen spill risks. As detailed above, diluted bitumen poses more extreme transportation and response risks than most conventional crude oils do. With massive infrastructure expansion involving tar sands in the works, these risks will quickly spread to more communities and resources through the United States. It is imperative that safety measures be put in place to address the unique threats of diluted bitumen prior to the occurrence of such additional infrastructure changes. The public and our resources cannot afford the expense and long-term implications of another spill on the scale of the Kalamazoo disaster. However, without immediate action, another such disastrous spill is a question of when, not if.

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[127] James Hansen, *Game Over for the Climate*, N.Y. TIMES, May 9, 2012, *available at* http://www.nytimes.com/2012/05/10/opinion/game-over-for-the-climate.html?_r=1& (last visited Mar. 15, 2013).

[128] *See*, Droitsch, Danielle, *Another flawed environmental review of the Keystone XL pipeline*, SWITCHBOARD, NATURAL RESOURCES DEFENSE COUNCIL STAFF BLOG, *available at* http://switchboard.nrdc.org/blogs/ddroitsch/another_flawed_environmental_r.html.

[129] Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, Pub. L. No. 112-90, 125 Stat. 1904 (Jan. 3, 2012).

The NTSB account of the Kalamazoo spill is sobering and identifies key failures in the regulation of the diluted bitumen pipeline that spilled. The NTSB cited "[i]nsufficient public awareness and education," "weak regulation" and "ineffective oversight of pipeline integrity management programs, control center procedures, and public awareness" as factors in the Kalamazoo disaster.[130] The NTSB specifically found that the regulatory oversight for the pipeline was "inadequate."[131] It also faulted "inadequate regulatory requirements for facility response plans," the inadequacy of the "facility response plan to ensure adequate training of the first responders and sufficient emergency response resources allocated to respond," and "inadequate review and approval of Enbridge's facility response plan that failed to verify that the plan content was accurate and timely" for the spill.[132]

PHMSA and EPA have a statutory duty to protect the public and the environment from the risks of tar sands oil or diluted bitumen being transported through pipelines. Current regulations fail to live up to that duty. PHMSA and EPA have both the obligation and the authority to promulgate rules that would address the current regulatory failures regarding diluted bitumen transit.

A. Pipeline Safety Act

The PSA grants the U.S. Department of Transportation (DOT) regulatory authority over the safety of hazardous liquid pipelines, including those pipelines that transport petroleum and petroleum products.[133] Within DOT, PHMSA administers the department's program through its Office of Pipeline Safety (OPS).[134]

The PSA distinguishes between interstate pipelines, defined as those that transport hazardous liquids in interstate or foreign commerce, and intrastate pipelines.[135] PHMSA assumes primary

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[130] NTSB REPORT, *supra* note 1, at xii.

[131] *Id*. at xiii.

[132] *Id*. at xiii-xiv.

[133] 49 U.S.C. § 60101 et seq.

[134] Pub. L. No. 108-426 (Nov. 30, 2004), *codified at* 49 U.S.C. § 108(f)(1) (2006) (creating PHMSA and directing the PHMSA Administrator to carry out the duties and powers vested in the Secretary of Transportation under the PSA). Rules promulgated by PHMSA concerning the safety of hazardous liquid pipelines are codified at 49 C.F.R. §§ 194 (spill prevention and response planning) and 195 (pipeline safety) (2011). Before the creation of PHMSA, the Research and Special Programs Administration administered the PSA within the DOT. Not all hazardous liquid pipelines are regulated by PHMSA. Generally, transportation pipelines that are "downstream" from production facilities and are inland from the U.S. coast are subject to regulation, with a few exceptions. 49 C.F.R. §§ 195.1, 195.2 (2011). Exceptions include crude oil gathering lines less than 6 inches in diameter, operated at low pressure, and located in rural areas that are not unusually sensitive to environmental damage. 49 U.S.C. § 60101(b)(2)(B)(ii) (2011).

[135] For hazardous liquid pipelines, "interstate or foreign commerce" is defined as commerce between "a place in a State and a place outside that State" or "places in the same State through a place outside the State." 49 U.S.C. § 60101(a)(8)(B) (2011).

responsibility for prescribing safety standards for interstate pipelines pursuant to the PSA.[136] The PSA provides for limited opportunities for states may become involved with pipeline oversight in a manner that may touch on safety. [137]

Despite the different risks, and as previously stated, the current regulations do not differentiate between conventional crude and diluted bitumen. Current regulations fail to account for the unique properties of diluted bitumen and ensure pipeline safety standards adequately protect the public and the environment from the risks of diluted bitumen. Primarily, current requirements provide too much discretion to operators to write their own ticket with virtually no input from the public and little independent oversight or verification from OPS.

More specifically, federal regulations for crude oil pipeline spill response lack specific standards and mandatory equipment and personnel requirements needed to address diluted bitumen spills. Federal regulations also provide little transparency so that the public can be informed of and comment on safety plans and the materials being transported through pipelines. Safety regulations furthermore do not require automatic shut down of pipes when possible problems are detected or flaws in the system are uncovered. The regulatory and oversight failures in the Kalamazoo spill are numerous, but it was in-part the ability of pipeline operators to continue to operate a compromised pipeline long after safety concerns were discovered that led to the Kalamazoo calamity.[138] These are shortcomings that can – and must – be addressed through rulemaking.

B. General Overview of PHMSA Regulatory Requirements

PHMSA regulations primarily consist of prescriptive measures that pipeline operators must follow. In general, they leave a great amount of discretion to operators over key components of pipeline safety and don't have criteria addressing the specific risks of diluted bitumen, including likely increased stressed on the pipelines. The regulations generally focus on corrosion, excavation damage, and equipment failure. The regulations leave it up to operators to inspect valves, right-of-ways, and water crossings, and to develop operation and maintenance procedures, maintain records, and submit reports. Again, the regulations allow operators to treat all crudes equally, despite vast differences between in particular conventional crude and diluted bitumen.

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[136] 49 U.S.C. § 60104(c) (2011). *See also* 49 CFR 190-199

[137] First, the statute provides that a state may enter an agreement with the Department of Transportation (DOT) through which the DOT certifies the state to participate in oversight of interstate pipeline transportation including special investigations of incidents, new construction, and other activities pertaining to inspections or investigations. Even if a state enters into this type of agreement, the federal government may not delegate the enforcement of safety standards to the state authority. 49 U.S.C. § 60106(b)(1). Secondly, "the DOT may designate an agent with delegated authority to conduct inspections of pipeline operators and facilities to ensure compliance with federal safety standards on behalf of the DOT. *Id.* § 60117(c).

[138] NTSB REPORT, *supra* note 1, at xii.

Existing guidelines are based on factors other than the material being transported and the specific risks of that material and, again, rely too heavily on operator self-regulation. For instance, operators must monitor external corrosion on a schedule depending on whether the pipes have corrosion protection.[139] If operators conduct a direct assessment of their lines, they must follow certain industry practices that require pre-assessment, indirect examination, direct examination, and post-assessment plans, but that don't account for the specific risks of diluted bitumen.[140] Operators also must take measures to combat atmospheric corrosion.[141] Additionally, "adequate steps must be taken to mitigate internal corrosion," but these steps do not differentiate between materials being transported or provide any guidance specific to what is "adequate" for diluted bitumen.[142]

Likewise, without accounting for the different and higher risks of diluted bitumen, certain valves are to be inspected at least twice a year.[143] Pressure control devices, such as relief valves and pressure regulators intended to prevent pipeline overpressure, are also to be inspected and tested at least once a year and twice a year if the pipelines carry highly volatile liquids.[144] Liquid pipeline rights-of-way must be patrolled at least twenty-six times each year.[145] Pipeline crossings of navigable waters must be inspected a minimum of once every five years, an inspection rate that should likely be increased to at least annually for diluted bitumen pipelines as a precautionary measure until more is known regarding the corrosive nature of diluted bitumen.[146]

Each operator must also have a manual containing written operating and maintenance procedures. These manuals must be reviewed annually.[147] Operators must further maintain records of inspections and repairs.[148] Every year, operators must complete a report for each type of hazardous liquid pipeline facility and submit the report to PHMSA.[149] These reports do not distinguish between diluted bitumen and conventional crude oil or the specific risks of those materials.

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[139] 49 C.F.R. § 195.573 (2012).
[140] *Id.* § 195.588.
[141] *Id.* §§ 195.581, 195.583.
[142] *Id.* § 195.579.
[143] 49 C.F.R. § 195.420 (2012).
[144] *Id.* § 195.428.
[145] *Id.* § 195.412(a); Leak Detection on Hazardous Liquid Pipelines, 75 Fed. Reg. 4134, 4135 (Jan. 26, 2011).
[146] *Id.* § 195.412(b).
[147] *Id.* § 195.402. Current maps must be maintained pursuant to § 195.404.
[148] *Id.* § 195.404.
[149] *Id.* § 195.49. An operator must also report certain safety-related conditions within 5 days after the day a representative of the operator first determines that the condition exists, but not later than 10 days after discovery of the condition. 49 C.F.R. §§ 195.55-.56 (2012).

While not accounting for the specific types of material transported, the regulations do account for different types of resources impacted. The number of areas identified as high consequence areas (HCA) by the regulatory structure underscores the urgency of ensuring the specific and unique risks of diluted bitumen are accounted for. The regulations require that special integrity management (IM) practices must be in place for pipelines in areas determined to be HCAs.[150] By PHMSA's own account, forty-four percent of the total miles of hazardous liquid pipelines regulated by PHMSA are located in areas that could affect an HCA.[151] In determining HCAs, DOT is directed by Congress to consider areas where a pipeline spill "would likely cause permanent or long-term environmental damage."[152] Such areas include critical drinking water supplies, critical wetlands, riverine or estuarine systems, national parks, wilderness areas, wildlife preservation areas or refuges, wild and scenic rivers, and critical habitat areas for threatened and endangered species.[153] It is important to point out that this list is not exhaustive, and while DOT has discretion to be more inclusive, it has declined to do so.[154]

Pipelines in areas that qualify as an HCA are subject to IM requirements. The IM program supplements general pipeline requirements by mandating assessment, risk analysis, and repair of the pipeline segments on a set timetable. Operators must first identify all pipelines that could affect an HCA.[155] An operator must then formulate a baseline assessment plan and conduct a baseline assessment.[156] Under a continual assessment plan, operators must assess pipeline segments "as frequently as needed to assure pipeline integrity," but at least at five-year intervals, taking into consideration factors identified during a risk analysis specific to that segment.[157] Operators must create remediation plans for the conditions that have been identified as potential risks for leaks or ruptures as well as plans for mitigation measures to protect the HCA should a spill occur. Lastly, operators are required to develop methods to measure the effectiveness of their plans. New information from repairs must be incorporated into the risk analysis and continual assessment plan. Again, the specific risks of diluted bitumen need not be accounted for, despite the fact that these protections apply to areas identified as especially vulnerable to spills.

The regulations also have numerous shortcomings that are especially troubling in light of the risks of transporting diluted bitumen. Primarily, a method of leak detection is not required. The regulations also do not require that operators immediately address many safety concerns and

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[150] 49 C.F.R. § 195.452 (2012)

[151] Safety of On-Shore Hazardous Liquid Pipelines, 75 Fed. Reg. 63774 (Oct. 18, 2010).

[152] 49 U.S.C. § 60109(b) (2012).

[153] *Id.*

[154] Pipeline Integrity Management in High Consequence Areas (Hazardous Liquid Pipeline Operators with 500 of More Miles of Pipeline), 65 Fed. Reg. 75378 (Dec. 1, 2000).

[155] 49 C.F.R. § 195.452 (2012).

[156] *Id.* § 195.452(d)(1).

[157] *Id.* § 195.452(j)(2).

leave them ample discretion to delay repairs. Whenever an operator discovers "any condition that could adversely affect the safe operation of its pipeline system," the operator need only correct the condition within a "reasonable time," not immediately, and can thus continue operations of the pipeline for quite some time.[158] For instance, the regulations allow continued operation of corroded pipelines by permitting operators to simply reduce pressure instead of replacing or repairing the pipe.[159] It is only if the condition presents an "immediate hazard to persons or property" – a judgment left largely to the operator – that the operator must cease operating the pipeline until the condition has been corrected.[160] The leniency allowed by these regulations had particularly deleterious impacts in the context of the Kalamazoo spill since the breach in that pipeline had been identified long before the actual spill occurred but was not repaired,[161] and regulations requiring more immediate attention to compromises in diluted bitumen pipelines may well have averted that disaster.

In evaluating the Kalamazoo spill, the NTSB was highly critical of this discretion afforded pipeline operators. NTSB concluded that largely as a result of past regulatory changes made – at the urging of the American Petroleum Institute – "49 CFR 195.542(h) does not provide clear requirements regarding when to repair and when to remediate pipeline defects and inadequately defines the requirements for assessing the effect on pipeline integrity when either crack defects or cracks and corrosion are simultaneously present in the pipeline."[162] Based on its findings, the NTSB recommended "that PHMSA revise 49 CFR 195.452 to clearly state (1) when an engineering assessment of crack defects, including environmentally assisted cracks, must be performed; (2) the acceptable methods for performing these engineering assessments, including the assessment of cracks coinciding with corrosion with a safety factor that considers the uncertainties associated with sizing of crack defects; (3) criteria for determining when a probable crack defect in a pipeline segment must be excavated and time limits for completing those excavations; (4) pressure restriction limits for crack defects that are not excavated by the required date; and (5) acceptable methods for determining crack growth for any cracks allowed to remain in the pipe, including growth caused by fatigue, corrosion fatigue, or SCC as applicable."[163] We believe these recommendations should be considered as part of a rulemaking, and that, in the case of diluted bitumen, repairs for corrosion or cracks be required immediately.

C. Promulgating New Standards and Regulations under the PSA

The purpose of the PSA is "to provide adequate protection against risks to life and property posed by pipeline transportation and pipeline facilities by improving the regulatory and

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[158] *Id.* § 195.401(b)(1).
[159] *Id.* § 195.585.
[160] *Id.*
[161] NTSB REPORT, *supra* note 1, at 85.
[162] *Id.*
[163] *Id.* at 86.

enforcement authority of the Secretary of Transportation."[164] The movement of diluted bitumen creates new risks for pipelines and their surrounding environments that impact life and property threatened by such transportation. However, the existing regulatory framework was crafted with conventional crudes in mind and does not address the risks of diluted bitumen. Thus, in keeping with the purpose and authority of the PSA, it is necessary for PHMSA to promulgate new regulations that are specific to pipelines that carry or may carry diluted bitumen.

The PSA mandates that PHMSA prescribe and enforce minimum safety standards for pipelines and associated facilities.[165] Such standards must be "practicable" and designed to meet the need for "safely transporting" hazardous liquids like diluted bitumen, and to "protect[] the environment."[166] As applied to the transportation of diluted bitumen or tar sands oil, current regulations fail to live up to that statutory obligation. PHMSA must promulgate new regulations that comply with its statutory duty in protecting the public and the environment from risks associated with tar sands oil pipeline transit.

PHMSA' s power to regulate pipeline safety is broad and must be applied in a manner that fulfills its statutory charge. It has comprehensive authority to regulate design, installation, inspection, emergency plans and procedures, testing, construction, extension, operation, replacement, and maintenance of pipeline facilities. [167] PHMSA regulations govern the materials that can be used in building pipelines, specify the temperatures and pressures that the pipelines must be able to withstand, and prescribe design standards for pipe, valves, fittings, leak detection systems, and other components. [168] PHMSA's rules must live up to the statutory mandate and be backed by "a reasoned determination that the benefits of the intended standard justify its costs."[169] Such a determination must be made pursuant to prescribed process which entails that PHMSA prepare a risk assessment for each proposed standard identifying the regulatory and non-regulatory options considered, the costs and benefits of the standard, and the data upon which the assessment is based.[170] The risk assessment must explain why the proposed standard was chosen and, for each alternative, give a brief explanation of why the other options were rejected.[171] Furthermore, an advisory technical committee composed of representatives from government, industry, and the public, must review the risk assessment to evaluate "the merit of the data and methods used."[172] PHMSA must consider the findings and recommendations of the

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[164] 49 U.S.C. § 60102(a)(1) (2011).
[165] *Id.* § 60102(a)(2).
[166] *Id.* § 60102(b)(1).
[167] 49 U.S.C. § 60102(a)(2)(B) (2011). PHMSA may not prescribe the location or routing of a pipeline. 49 U.S.C. § 60104(e).
[168] *See*, 49 C.F.R. § 195, Subpart C.
[169] 49 U.S.C. § 60102(b)(5) (2011).
[170] *Id.* § 60102(b)(3).
[171] *Id.*
[172] *Id.* §§ 60115(b)(2)-(3), 601012(b)(4)(B)(i).

committee, and provide a written response to the committee's report.[173] The assessment must also be made available to the public.[174] Before prescribing the safety standard, PHMSA shall consider the relevant available pipeline safety and environmental information, the standard's reasonableness and its appropriateness for the type of pipeline concerned, and comments and information from the public.[175]

As seen in Kalamazoo, the benefits of preventing such a spill are extremely high and far exceed the likely costs of additional measures to protect the public and the environment. As tragic and costly as the Kalamazoo spill was and continues to be, a spill in a resource such as the Straights of Mackinaw – which is currently exposed to diluted bitumen risks – would be immeasurably higher. With massive expansion plans, numerous critical resources across the country will exposed to diluted bitumen spill risks unless action is taken to protect these resources. Given the unique risks presented by the movement of diluted bitumen in pipelines and this rapid increase of the tar sands and plans to move diluted bitumen into the United States, there is no time to lose in expeditiously moving to create a regulatory framework to insure that this substance is adequately regulated. A failure to do this would constitute a failure on the part of PHMSA to properly execute its charge under the PSA to protect life and property against the risks of pipeline transportation of diluted bitumen.

III. SPILL RESPONSE REGULATION

Beyond operation and maintenance of pipelines, operators must develop plans to respond to spills and must report spills when they occur. Operators must comply with two sets of response planning requirements in federal law. First, under the PSA, operators must develop "an emergency response plan describing the operator's procedures for responding to and containing releases."[176] Second, under the OPA, operators must create a response plan to address a worst case discharge of oil into navigable waters or the adjoining shoreline.[177] While some of the requirements for the plans are similar, there are also fundamental differences. To fulfill the purpose of both Acts, new rules for diluted bitumen spill response must be promulgated.

The lack of an adequate spill response in the context of diluted bitumen was apparent in the Kalamazoo disaster, where it took the operator of the pipeline, Enbridge, approximately seventeen hours to respond to the spill, and where immediate spill responders were in the dark as to what substance they were dealing with. Serious regulatory shortcomings hampered remedial and response efforts and added to the catastrophe. These regulatory defects must be corrected.

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[173] *Id.* §§ 60102(b)(4)(B)(ii), 60102(b)(2)(G).
[174] *Id.* § 60102(b)(4)(B)(ii).
[175] *Id.* § 60102(b)(2)(A)-(C), (F).
[176] 49 U.S.C. § 60102(d)(5) (2011).
[177] 33 U.S.C. § 1321(j)(5) (2011).

More specifically, the NTSB found that Enbridge's facility response plan failed to ensure adequate training of first responders and sufficient emergency response resources.[178] It called out "inadequate regulatory requirements for facility response plans … which do not mandate the amount of resources or recovery capacity needed for worst-case discharges" as a safety problem in need of addressing.[179] The NTSB also pointed to PHMSA's understaffing, which led to "inadequate review and approval of Enbridge's facility response plan that failed to verify that the plan content was accurate and timely" for the estimated worst-case scenario spill.[180]

A. The Pipeline Safety Act

The PSA directs PHMSA to prescribe safety standards for emergency plans and procedures.[181] Specifically, the PSA requires operators to develop "an emergency response plan describing the operator's procedures for responding to and containing releases, including:

- identifying specific action the operator will take on discovering a release:
- liaison procedures with state and local authorities for emergency response; and
- communication and alert procedures for immediately notifying state and local officials at the time of a release."[182]

The emergency plan must include procedures for "[p]rompt and effective response" to each type of emergency; "personnel, equipment, instruments, tools, and material" needed; "[t]aking necessary action, such as emergency shutdown or pressure reduction, to minimize the volume" released; control of the released liquids; minimizing public exposure to spilled liquids; notifying emergency responders; and reviewing the efficacy of emergency procedures following any accident.[183] Operators must review and, if needed, update the plan every calendar year.[184] They must also create an emergency response training program, including training personnel to carry out the procedures in the emergency plan.[185]

Operators are not required to submit emergency plans to PHMSA for review and approval, nor are these plans subject to public review and comment. Instead, PHMSA assesses the written

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[178] NTSB REPORT, *supra* note 1, at xiii.

[179] *Id.* at xiii-xiv. The report directed this criticism at PHMSA, stating that EPA and U.S. Coast Guard regulations do specify "effective daily response capability for each of the three tiers for oil spill response planning." *Id.* at xiv.

[180] *Id.*

[181] 49 U.S.C. § 60102(a)(2)(B) (2011).

[182] 49 U.S.C. § 60102(d)(5) (2011). The emergency plan is one part of an overall manual detailing "written for procedures conducting normal operations and maintenance activities and handling abnormal operations and emergencies." 49 U.S.C. § 60102(a) (2011).

[183] 49 C.F.R. § 195.402(e) (2012).

[184] *Id.* § 195.402(a).

[185] *Id.* § 195.403.

procedures when it conducts an inspection.[186] Under current regulations, if PHMSA determines that the plan must be amended to provide a reasonable level of safety, it cannot do so without giving the operator notice and providing an opportunity for a hearing.[187] In 2010, PHMSA advised operators that they are required to share the emergency plans with local emergency responders, and would face fines if they do not.[188] In short, PHMSA allows operators ample discretion to determine the adequacy of their own emergency plans with little checks to ensure those plans are indeed adequate.

B. The Oil Pollution Act

The OPA requires a tiered planning process to respond to oil spills that threaten navigable waters. The President is charged with developing a National Contingency Plan, which serves as a federal blueprint for nationwide spill response; the National Response Team is an inter-agency group chaired by EPA that coordinates these response activities.[189] Committees of local, state and federal agency officials create regional Area Contingency Plans. These plans must comport with the national plan and be capable of removing, mitigating, or preventing a worst-case discharge or threat of such a discharge.[190] Oil facilities, including pipelines, must develop individual Facility Response Plans that are consistent with both the national and area plans.[191]

Onshore facilities such as pipelines are only required to develop plans if a discharge poses a threat to navigable waters and the adjacent shoreline.[192] Facility plans must be consistent with the national plan and applicable area plans, detail a chain of authority for incidents, identify personnel and equipment capable of resolving a worst case discharge, and describe training, testing, and drilling procedures.[193]

Responsibilities under the OPA are split between several federal agencies.[194] The EPA and Coast Guard direct the area planning. For inland zones, EPA designates areas, appoints area

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[186] *See Briefing: Additional Details on Standard Inspections*, Pipeline & Hazardous Materials Safety Administration, http://primis.phmsa.dot.gov/comm/InspectionDetails.htm?nocache=2610 (last visited Apr. 6, 2012).
[187] 49 C.F.R. § 195.402(b) (2012).
[188] Notice, Pipeline Safety: Emergency Preparedness Communications, 75 Fed. Reg. 67807 (Nov. 3, 2010).
[189] 33 U.S.C. § 1321(d) (2011), Exec. Order No. 12777, 56 Fed. Reg. 54757 (Oct. 18, 1991).
[190] 33 U.S.C. § 1321(j)(4) (2011).
[191] *Id*. § 1321 (j)(5)(C).
[192] *Id*. § 1321(j)(5)(C)(iv). PHMSA exempts pipelines with no reported problems or which are unlikely to have a worst case discharge reach navigable waters, drinking waters, or environmentally sensitive areas within 4 hours, and larger pipelines where no worst case discharge would affect these areas within 12 hours. 49 C.F.R. § 194.101 (2012).
[193] 33 U.S.C. § 1321 (j)(5)(D) (2011).
[194] Exec. Order No. 12777, 56 Fed. Reg. 54757 (Oct. 18, 1991).

committee members, requires that information be included in area plans, and reviews and approves the area plans. The U.S. Coast Guard does the same for coastal zones.[195]

While the OPA establishes very broad requirements for area plans,[196] each region's area committee identifies the locations that are sensitive to oil pollution.[197] This, in turn, informs the response planning for facilities within each area committee's footprint.[198]

PHMSA is responsible for reviewing the facility plans of onshore transportation facilities, including oil pipelines, to ensure that they are in compliance with the OPA and area plans.[199] DOT also has authority to review the response plans of "offshore" pipelines that are inland from the coast, which are defined in accordance with the OPA as those pipelines in, on, or under navigable waters.[200] PHMSA's response plan regulations, however, only apply to those pipelines "in, on, or under, any land within the United States other than submerged land."[201]

PHMSA requires operators to determine the potential worst-case discharge scenario by calculating maximum figures for response times, release times, and flow rates.[202] Additionally, the plans must identify environmentally and economically sensitive areas, divide responsibilities among federal, state, and local responders, and include procedures for spill detection and mitigation.[203] PHMSA's regulations allow operators to incorporate by reference appropriate procedures from their PSA-mandated manuals for operations, maintenance, and emergencies into the OPA-mandated facility response plans.[204] In 2012, Congress directed PHMSA to maintain

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[195] *See* Executive Order No. 12777, 56 Fed. Reg. 54757 (Oct. 22, 1991). *See also* 40 C.F.R. § 300.210 (2006) (describing core attributes of area contingency plans) *and* 40 C.F.R. § 300.211 (2011) (division of facility response plans among agencies). The Coast Guard's vessel requirements can be found at 33 C.F.R., Subpart D (2012).

[196] Area contingency plans must be able to remove worst case discharges, describe covered areas (including economically or environmentally important areas), detail spill responsibilities for operators and responders, list available equipment, provide contact information for scientists with relevant expertise, and describe the integration into other area plans. *See* 33 U.S.C. § 1321(j)(4)(c) (2006).

[197] *See, e.g.*, National Oil and Hazardous Substances Pollution Contingency Plan, 59 Fed. Reg. 47384-01(Sept. 15, 1994) (codified at 40 C.F.R. pts. 9 and 300).

[198] *See, e.g.*, Region 5 Regional Response Team, Federal Region 5 Regional Contingency Plan/Area Contingency Plan § 4 (2009), *available at* http://www.rrt5.org/acp/body/Region5ACP-RCP_revMay2011.pdf; Environmental Protection Agency, Inland Area Contingency Plan for Region 1 – New England, (2006), *available at* http://www.epa.gov/region1/er/iacp/pdfs/284809.pdf.

[199] Executive Order No. 12777, 56 Fed. Reg. 54757 (Oct. 22, 1991) 149; *See Regional Emergency Management Programs*, Environmental Protection Agency, (June 14, 2011), http://www.epa.gov/osweroe1/content/regional.htm; Region 5 Regional Area Contingency Plan, *supra* note 137, at § 1.3-1.4.

[200] *See* Memorandum of Understanding Among the Secretary of the Interior, Secretary of Transportation, and Administrator of the Environmental Protection Agency. 40 C.F.R. § 112, Appendix B (2011).

[201] 49 C.F.R. § 194.5 (2012).

[202] *Id.* § 194.105.

[203] *Id.* § 194.107.

[204] *Id.*

copies of the most recent response plans and provide copies of the plans upon written request to interested parties, although PHMSA can withhold or redact information for security reasons.[205]

Most pipeline spills over five gallons must be reported to PHMSA "as soon as practicable, but not later than thirty days after discovery of the accident."[206] Spills under five barrels (210 gallons) resulting in no damage to life or property, and confined to the pipeline operator's rights-of-way, are exempt from reporting obligations.[207] When the spill causes death, a fire or explosion, significant property damage, or water pollution, the operator must notify the National Response Center "[a]t the earliest practicable moment" and must provide certain key information on the release.[208] This notification triggers the federal response under the National Contingency Plan. In 2012, Congress directed PHMSA to revise its regulations to require reporting "at the earliest practicable moment following confirmed discovery" of the spill but "not later than 1 hour following the time of such confirmed discovery."[209]

Existing regulations do not fulfill the requirements of the OPA, especially in the context of regulating diluted bitumen. In investigating the Kalamazoo spill, the NSTB found that current PHMSA regulations "allow operators to determine the amount [of response resources] and to demonstrate that sufficient response resources are provided for their facility response plans" leaving operators "with vague three-tier response criteria that allow them to subjectively define what resources are adequate and that provide no measure for regulators to evaluate the sufficiency of spill response planning."[210] NTSB correctly points out that these regulations contravene the PSA, "rendering it improbable that PHMSA would be able to perform an adequate review of facility response plans or enforce federal requirements that pipeline operators identify and ensure that adequate response resources are available to respond to worst-case disasters."[211]

The process around approval is also critically lacking. There is no public review, no opportunity for input or comment, and PHMSA is horribly understaffed.[212] For the Enbridge pipeline that spilled in Kalamazoo, the spill response plan was approved a mere two weeks after it was submitted. The plan was approved based on company submissions attesting to the adequacy of

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[205] Pub. L. No. 112-90, § 6 (Public Education and Awareness; amending 49 U.S.C. § 60132 and adding 49 U.S.C. § 60138) (2012).
[206] 49 C.F.R. §§ 195.50, 195.54 (2012).
[207] *Id*. § 195.50.
[208] *Id*. § 195.52.
[209] Pub. L. No. 112-90 § 9(a)-(b)(1) (2012).
[210] NSTB REPORT, *supra* note 1, at 109 (discussing 49 CFR 194.115).
[211] *Id*.
[212] *See id*., at 112-13 (finding that PHMSA has fewer employees per plan than other agencies with spill response oversight).

the plan.[213] No supplemental information was sought in PHMSA's lightning-fast approval of the plan.[214]

These regulatory deficiencies spell particular disaster with the additional risk of tar sands, as played out in Kalamazoo. They must be corrected and proper response plans must be required that ensure adequate response resources are in place to respond to the worst type of diluted bitumen spill likely for any pipeline carrying the material.

CONCLUSION

WHEREFORE, for the reasons stated herein, Petitioners respectfully request that PHMSA and the EPA take the following actions:

- Issue protective new pipeline safety standards to ensure that the safety hazards involved in pipelines carrying diluted bitumen are accounted for and safety requirements are stronger than those for conventional crude.

- Require detailed industry reporting of what materials are being carried through pipelines and when they are being carried so that communities and responders can be instantly made aware of what material they are dealing with in the case of a spill. Information regarding the materials being carried through a pipeline, especially in the event of any spill, should be easily accessible to concerned members of the public without long delay or cumbersome process. It should also require companies to disclose the chemical composition of diluted bitumen, including the composition of any diluents used.

- Require PHMSA and EPA to work with communities to put in place spill response plans and training that prepare communities to respond to the unique threats created by the movement of diluted bitumen.

- Make sure that oil companies' spill response plans for diluted bitumen are independently reviewed and subject to public comment.

- Revise monitoring and spill prevention requirements for diluted bitumen to ensure that spill detection systems do not fail and that pipelines are shut down in the first instance of any indication of a leak or other pipeline failure, even in cases where operators suspect a safety breach may not be the cause of a possible abnormality.

[213] *Id.* at 113.
[214] *Id.*

- Require operators to immediately shut down and repair pipelines that carry diluted bitumen as soon as operators discover any safety defects, such as cracks or corrosion, even if such defects would currently not require immediate shut down and repair.

- Place a moratorium on any expanded transportation of diluted bitumen, through either new or existing pipelines, until appropriate regulations are put in place.

- Require increased inspection of diluted bitumen pipelines, and periodic independent verification of any operator reporting.

- Engage PHMSA as a required consulting agency in any approval or review of a proposed pipeline carrying diluted bitumen.

- Require rigorous pre-operation review of written integrity management programs developed pursuant to 49 C.F.R. 195.452 for pipelines that may carry diluted bitumen. Review of these programs should extend to baseline assessment plans. Particular emphasis should be given to agency review of preventative and mitigation measures for high consequences areas. This review should be conducted prior to any final agency action allowing for the commencement of pipeline operation or prior to existing pipelines being authorized to carry diluted bitumen, whichever comes sooner. Assessment intervals for pipelines carrying diluted bitumen should be reduced from the current sixty-eight month requirement to a twenty-four month requirement.

As established at 5 U.S.C. § 706(1), petitioners request that the agency provide an answer to this citizen petition within a reasonable time. Failure to respond within a reasonable time will be construed as constructive denial of the requests contained herein and may subject the agencies to litigation for, inter alia, unreasonable delay.

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Respectfully submitted on behalf of the petitioners,

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