

*** Citizens Opposed to Oil Pollution * Dakota Resource Council ***
*** Natural Resources Defense Council * Plains Justice * Save Our Siouland Coalition**
*** Save Union County Committee**

September 24, 2007

BY MAIL, FAX, and EMAIL

Elizabeth Orlando
OES/ENV Room 2657
U.S. Department of State
Washington, DC 205207
Fax: 202-647-5974 (Attn: Betsy Orlando)
Email: keystoneeis@state.gov

Dear Ms. Orlando:

On behalf of the Natural Resources Defense Council¹, Plains Justice², Save Union County Committee, Save Our Siouland Coalition, Citizens Opposed to Oil Pollution, and Dakota Resource Council³, we submit the following comments regarding the Draft Environmental Impact Statement for the Keystone Pipeline Project. The Notice of Availability of the Draft Environmental Impact Statement (EIS) for the Proposed TransCanada Keystone Pipeline Project was published in the Federal Register vol. 72, no. 154 (August 10, 2007) and indicated the public comment period for this proposal closes on September 24, 2007.

In the comments below, we outline our concerns regarding the rationale for building this pipeline, address the potential environmental impacts in the areas serviced by the pipeline, and highlight the overall shortcomings of the cumulative impacts analysis in the EIS. We hope to see these concerns addressed in the final EIS, given that they raise significant impacts which are important factors before a final determination of whether a Presidential Permit is granted.

1. The Proposed TransCanada Keystone Pipeline Is Not in the National Interest

Presidential Permit applications require parties to address whether granting such a permit for the proposed project “would be in the national interest.”⁴ Keystone alleges that the project will “serve the national interest by providing a secure supply of Canadian crude oil

¹ NRDC is an international nonprofit environmental organization with more than 1.2 million members and online activists, www.nrdc.org.

² Plains Justice is a public interest non-profit law center working to promote environmental justice, health, community empowerment and a sustainable energy future across the Great Plains, <http://plainsjustice.org/>.

³ DRC is a nonprofit, grassroots activist organization, <http://www.drcinfo.com/>.

⁴ Executive Order (EO) 11423 (33 Federal Register [FR] 11741) as amended by EO 12847 (58 FR 29511) and EO 13337 (69 FR 25299).

to meet the growing demand by refineries and markets in the U.S.”⁵ We do not think that granting a permit for the proposed TransCanada Keystone pipeline is in the national interest. Contrary to our national interest, we believe that this proposed pipeline will increase U.S. reliance on fuels from sources such as the Canadian tar or oil sands that are environmentally destructive and that increase damage from global warming.

The proposal makes it clear that the pipeline is being built, primarily to increase imports of synthetic crude oil from the Canadian tar sands region. Section 1.2.1 of the Environmental Report submission for a Presidential Permit identifies the Western Canadian Sedimentary Basin as the source of oil for the Keystone pipeline and states that, according to the Canadian Association of Petroleum Producers, over 97 percent of the established crude oil reserves in the Western Canadian Sedimentary Basin, “are sourced from Canada’s oil sands region.”⁶

Currently, the United States demand for energy, particularly transportation fuel, is placing North America at an energy crossroads. To date, we have had access to cheap and plentiful conventional oil, but that era is ending, spurring attempts to expand and develop unconventional fuels derived from sources that produce more contaminant air pollutants, are more greenhouse gas intensive, and are more environmentally destructive than conventional sources. Canada’s tar sands region, located within the Western Canadian Sedimentary Basin, is a leading example of the type of development underway in this rush to develop unconventional oil. More importantly, the proposed TransCanada Keystone Pipeline is integral in this effort to expand exploitation of tar sands oil resources in Northern Alberta.

Tar sands oil extraction, production and refining contributes almost three times more greenhouse gas emissions even than conventional oil production.⁷ Tar sands oil is dirtier to refine – increasing local pollution around refineries. Finally tar sands oil extraction causes several environmental and public health impacts damaging water quality and quantity; forests, wetlands and species such as migratory birds; and air quality.

2. The Draft EIS Does Not Adequately Address Alternatives

The draft EIS attempts to cover alternatives dealing with no action, system, and major route alternatives.⁸ However, the pipeline is being proposed in order to fill a perceived future gap in fuel and energy in the United States. The pipeline is not the only alternative for filling this gap: other alternatives include energy efficiency, renewable energy, clean technologies, and demand-side management. The draft EIS does not adequately address alternatives to expanding U.S. capacity to import tar sands oil.

⁵ Application of TransCanada Keystone Pipeline, LLC for a Presidential Permit Authorizing the Construction, Operation, and Maintenance of Pipeline Facilities for the Importation of Crude Oil to be Located at the United States-Canada Border, pg. 1, 6-7, <http://www.entrix.com/keystone/project/information.pdf>.

⁶ Presidential Permit Application, Chapter 1, Section 1.2, <http://www.entrix.com/keystone/project/chap1.pdf>

⁷ Pembina Institute, Fact Sheet: *Oil Sands Fever- The untold story*, pg. 2, http://pubs.pembina.org/reports/OSF_Fact72.pdf.

⁸ Keystone Pipeline Project, Draft EIS, Chapter 4, pg. 4-1.

In the race to develop Canada's tar sands region, a significant obstacle to its growth is the constraint on the pipeline network moving this crude to markets in the United States. The Environmental Report submission for a Presidential Permit notes the existing crude oil pipeline export capacity from this region is insufficient to accommodate the forecasted crude oil supply growth and therefore the Keystone Pipeline project is proposed to address this gap, with the possibility of incrementally increasing its capacity.⁹

The purpose of this EIS is to provide an assessment of the environmental impacts if a Presidential Permit for the proposed project is approved. Presidential Permits, unlike NEPA analyses, have the burden of looking at not only the narrow field of traditional NEPA factors, but whether the "issuance would serve the national interest."¹⁰ Therefore, in the draft EIS's determination that a "no action alternative" is not preferable, it cites to the supply and demand components.

According to Section 4.1 of the draft, a "no action alternative" is not considered preferable because it would not meet the purpose and need of the project which involves both supply and demand components.¹¹ Section 4.1 argues that it is because of the demand in the U.S., the supply available in WCSB, the WCSB as a "relatively stable and secure source of North American crude oil for Midwest and Gulf Coast markets" and the desire to reduce our dependence on Middle Eastern oil supplies that makes this alternative not preferable.

The analysis of national interest only looks at one aspect of how to meet our energy needs. It does not consider that unconventional oil is not the only alternative for our energy future. It also does not consider the security risks from energy sources that increase our contributions to global warming pollution.

3. Draft EIS Should Consider U.S. Pollution Impacts of Refinery Expansions That Will Result from Keystone Pipeline as Part of Cumulative Impacts

The draft EIS does not consider many of the potential consequences of moving forward with this pipeline. Specifically it does not consider the environmental impacts of refinery expansions to refine the expanded amount of tar sands oil that will be imported into the United States. The Keystone pipeline proposal already is catalyzing expansion at several refineries in the U.S. and as a consequence will cause additional local pollution in the United States. However, the linkage between these proposed refinery expansions and the

⁹ Environmental Report, Chapter 1, pg. 1-4 ("...the Keystone Pipeline Project initially will provide 435,000 bpd of incremental export capacity to address this deficiency. With expansion, Keystone could provide up to approximately 600,000 bpd of incremental export capacity. Thus, the addition of the Keystone pipeline will significantly increase the WCSB pipeline export capacity needed to address forecasted supply growth."); *see also* Environmental Report, Chapter 1, pg. 1-3, ("The need for the project is dictated by a number of factors including: (1) Increasing WCSB crude oil supply combined with insufficient export pipeline capacity..."), <http://www.entrix.com/keystone/project/chap1.pdf>.

¹⁰ Executive Order (EO) 11423 (33 FR 11741), as amended by EO 12847 (58 FR 29511) and EO 13337 (69 FR 25299); *see also* US Department of State, Fact sheet: Applying for a Presidential Permit from the U.S. Department of State," http://www.state.gov/p/wha/ci/mx/rel_2001/fs/11148.htm.

¹¹ Keystone Pipeline Project Draft EIS, Chapter 4, pgs. 4-1 and 4-2.

Keystone pipeline is not addressed in the draft EIS as part of its cumulative impacts assessment.

While the Keystone's Presidential Permit application alleges that "based on Keystone's understanding of the operations and plans of the destination facilities (Salisbury, Wood River, Patoka, and Cushing), no additional oil storage or refining facilities have been proposed because of this new oil supply,"¹² proposals to upgrade existing refineries in the United States are already underway to increase their capacity for refining heavier crude oils such as those derived from tar sands.¹³ There is a noticeable twinning of proposals to increase pipeline capacity to bring in more tar sands oil into the United States and proposals to upgrade and expand refineries in areas serviced by the pipeline. Proposals to upgrade and expand refineries in the Midwest are already underway.¹⁴ This is not surprising given that Keystone's Presidential Permit application identifies PADD II, or the Midwest region, as a major recipient of the crude via the proposed pipeline.¹⁵

Refining heavy sour (sulfurous) crude oil extracted from tar sands, which requires substantially greater energy inputs than refining conventional light sweet crude oil, yields significant increases in conventional air pollutants (in particular sulfur dioxide and carbon monoxide) and carbon dioxide.¹⁶ Permits issued for these expansions also reflect significant increases in the discharge of water contaminants¹⁷ and the link of these increases to heavy crude refining needs to be further explored, as well as impacts to local waterbodies, including the Great Lakes. Several of the Canadian refineries emit significant amounts of pollutants.¹⁸ The draft EIS makes no mention that increases in air pollutants from upgrading tar sands crude are taken into consideration as part of the cumulative impacts. Similarly, upgrading crude oil is energy intensive. The draft EIS also does not address impacts from potentially needing to increase energy needs at the refining stage.

Lastly, the public health implications in local communities near the refineries being upgraded because of the pipeline is also omitted from the cumulative impacts analysis of the draft EIS. A key concern is to what extent these refinery expansions will increase local air and water pollution and increases in waste and other toxic releases.

¹² Presidential Permit Application, Chapter 1, Section 1.1, <http://www.entrix.com/keystone/project/chap1.pdf>

¹³ Ann Bordetsky, et al., *Driving It Home: Choosing the Right Path for Fueling North America's Transportation Future*, (2007), pg. 11, <http://www.nrdc.org/energy/drivingithome/drivingithome.pdf>

¹⁴ See *infra* footnotes 16-19.

¹⁵ Presidential Permit Application, Chapter 1, Section 1.2.2, "At the same time, domestic U.S. crude oil supplies continue to decline. For example, domestic crude production in the Petroleum Administration for Defense District II (PADD II), Keystone's initial target delivery area, continues to decline at an average of 3 percent per year." <http://www.entrix.com/keystone/project/chap1.pdf>

¹⁶ See American Bottom Conservancy and Sierra Club's "Petition for review of Prevention of Significant Deterioration approval set forth in Permit No. 06050052 (Facility Identification No. 119090AAA)" (Aug. 21, 2007).

¹⁷ *Id.*

¹⁸ Woynillowicz, Dan. "Oil Sands Fever: The Environmental Implications of Canada's Oil Sands Rush," p. 14-15, 44-52. The Pembina Institute, November, 2005.

In the Illinois region alone, which has been identified as an “initial target delivery area” for the Keystone pipeline,¹⁹ major expansions in refining capacity to take more blended bitumen—which is the least refined tar sands oil that can be transported through a pipeline—are now in the works at the BP Whiting²⁰ plant in Indiana and at the ConocoPhillips Wood River²¹ plant in Roxana, IL. The BP refinery has plans to spend \$3 billion to upgrade its process to refine an additional 260,000 bbls/d of Canadian crude.²² And the ConocoPhillips plant has plans to increase bitumen use to 200,000 bbl/d by 2009 through a joint venture with EnCana.²³

Similar expansions can be expected in other areas along the pipeline corridor and particularly in those areas with refineries identified as recipients of the pipeline’s products, such as the Gulf Coast.²⁴ And similar increases in pollution can therefore also be expected along the pipeline corridor due to increased refinery emissions and environmental impacts.

4. Draft EIS Does Not Adequately Address Local Impacts of Pipeline²⁵

The draft EIS does not adequately address the environmental risks of constructing the pipeline over shallow aquifers.

According to section 3.3.1.1 of the draft EIS, the proposed route for the Keystone Pipeline Project passes directly over a number of shallow aquifers in the eastern Dakotas and Nebraska. Many of these shallow aquifers along the proposed pipeline route are close enough to the surface to be directly replenished by rainfall and hydraulically connected to surface waters. This means that any leak or spill from the pipeline has the potential to contaminate these underlying aquifers, and unlike surface waters, they cannot be directly accessed for the purpose of clean-up and mitigation measures. Many rural residents and rural communities rely on both private and public wells that draw potable water from these shallow aquifers. In addition, rural residents actively engaged in production agriculture are likely to have irrigation systems and livestock that also depend on these shallow aquifers as a primary water source. The draft EIS does not adequately address the full range of

¹⁹ Presidential Permit Application, Chapter 1, Section 1.2.2,

<http://www.entrix.com/keystone/project/chap1.pdf>

²⁰ BP Whiting Refinery Fact Sheet, <http://whiting.bp.com/go/doc/1550/165356/>

²¹ EnCana website for Wood River refinery,

<http://www.encana.com/operations/downstream/assets/woodriver/index.htm>

²² Illinois Commerce Commission. Docket No. 06-0470. Enbridge Energy Partners, L.P. and Enbridge Energy, Limited Partnership. Exhibit 5. Testimony of Jerry L. Rhoades, Manager, East of Rockies Refining Supply For BP North America Products, Inc. Dec. 21, 2006. p. 12. http://www.icc.illinois.gov/e-docket/reports/view_file.asp?intIdFile=188311&strC=bd.

²³ EnCana website. <http://www.encana.com/operations/downstream/assets/woodriver/index.htm> and Ian McKinnon. Oct. 5, 2006. “EnCana, ConocoPhillips Form Oil-Sands Joint Venture.” (Update5). Bloomberg.com. <http://www.bloomberg.com/apps/news?pid=20601082&sid=aYQif1zyYUak&refer=canada>

²⁴ Department of State, “Notice of Availability of the Draft Environmental Impact Statement for the Proposed TransCanada Keystone Pipeline Project” (Aug. 10, 2007), Summary section (“With these extensions, the pipeline would interconnect with existing crude oil pipelines that supply U.S. Gulf Coast refinery markets.”)

²⁵ This section draws from comments raised during the public comment and scoping sessions including for the period after the Notice of Intent was published on October 4, 2006 and for the period after the notice of availability of the draft EIS was announced on August 10, 2007.

consequences that would result from a catastrophic leak or spill along the pipeline that occurs over an underlying shallow aquifer.

At section 5.3.1, the draft EIS concludes that “[m]any of the aquifers present beneath, or in the vicinity of, the proposed route are isolated by the presence of glacial till,” which would offer a measure of protection from contamination. For those near-surface aquifers that do not have this overlying layer of protection, the draft EIS notes that “measures have been proposed ... to reduce the potential impact of leaks and spills *during construction*.” (emphasis added) The draft EIS does not address what measures would be implemented to protect these aquifers during the operation lifetime of the pipeline. What, for example, would be the proposed mitigation measures if the sole available drinking water supply for several rural municipalities and surrounding farmsteads is contaminated by a spill from the pipeline? What contaminants would be released into the groundwater in the event of such a spill? What would be the likely duration of such contamination? If a spill from the pipeline could permanently contaminate a shallow aquifer that rural residents rely on for their potable water, is it appropriate to route the pipeline over such aquifers, or are there viable alternatives? The draft EIS does not address these issues, which are vital to the health and livelihood of the rural residents who depend on these aquifers as their sole source of potable water. The final EIS should more thoroughly examine the risk to shallow aquifers posed by the Keystone Pipeline Project.

The draft EIS does not adequately address the potential risks to soil productivity along the pipeline.

The proposed Keystone Pipeline passes over 11,248 acres of “prime farmland” in seven states.²⁶ Much of this farmland is used in production agriculture, and its value is tied to its fertility and crop suitability. The draft EIS identifies, but does not adequately address, some major risks posed to this land by the construction and operation of the proposed pipeline.

First, the draft EIS does not fully examine the issue of increased soil temperature caused by the pipeline, which is addressed at section 3.2.2.2. The draft EIS refers to data provided by TransCanada regarding projected temperature increases along the pipeline at various times of the year. Whether this information is accurate or not, it does not fully address the effects of even minor changes in soil temperature on moisture content and productivity. For example, in semi-arid climates along the pipeline such as in the eastern Dakotas, moisture content during the spring depends on the ground having frozen and retained snow cover during the previous winter. Will the temperature increases identified by TransCanada impact this aspect of soil climate? Can TransCanada provide data from other pipelines to demonstrate the impact that such increased temperature has actually had on the moisture and productivity of the surrounding soil? Merely providing hypothetical temperature ranges, without context or other relevant details, does not give a clear picture of what the likely impacts on agriculturally productive soils would be. The final EIS should address this concern in more concrete detail.

²⁶ See Draft EIS at Table 3.2.1-2.

Second, the draft EIS does not fully address the risk to agricultural land and other soils from pipeline leaks and spills. At section 3.2.2.1, the draft EIS briefly address the risk to soil from leaks and spills during the construction process and states that TransCanada has proposed mitigation procedures to deal with these risks. However, the draft EIS does not address the risk to soil from catastrophic leaks and spills during the operation lifetime of the pipeline. Previous spills experienced by TransCanada along other pipelines could provide a basis for performing such an analysis. At a minimum, the final EIS should address the likely extent and duration of soil contamination that would occur in the event of such a leak or spill during the lifetime of the pipeline. How much acreage would be affected? What clean-up measures could and should be used? Would there be any permanent contamination? Would effected land still be able to be used for agricultural production purposes? Without answering these questions, the EIS does not address one of the more apparent environmental risks to soil quality from the Keystone Pipeline Project. The final EIS should provide a more thorough analysis of this issue.

The draft EIS does not adequately address the potential risks and benefits of various methods for crossing surface water.

At section 3.3.2.2, the draft EIS identifies four potential water-crossing techniques to be employed by the Keystone Pipeline Project where the pipeline has to cross surface waters: the open-cut wet method, the flume method, the dam-and-pump method, or the HDD (horizontal directional drill) method. The draft EIS states simply that the type of construction method used depends on the type of stream crossing, and a list is provided of the various construction methods TransCanada intends to use at each stream crossing. This information in the draft EIS is provided uncritically without describing the various construction methods or explaining why a given method is appropriate to a given stream crossing. Apart from width, no characteristics of the various water crossings are provided. Where a water crossing has unusual topographic features, for example where the Pembina Gorge in eastern North Dakota suddenly descends several hundred feet to the Pembina River, a different construction method might be warranted than where the pipeline crosses a shallow stream bed with shallow banks. The draft EIS does not examine all the relevant features of the surface waters to be crossed by the pipeline, nor does it analyze what construction methods would be the most appropriate for each type of crossing. The final EIS should examine this topic more critically. The environmental risks, such as riverbank and riverbed erosion and overall stability of the pipeline at the site of the crossing, cannot be accurately predicted and mitigated with only the limited information provided in the draft EIS.

The draft EIS does not address environmental risks from the proposed pipeline operating at a higher maximum operating pressure than is mandated by federal regulations.

On November 17, 2006, TransCanada applied to the federal Pipeline and Hazardous Material Safety Administration (PHMSA) for a waiver of compliance from federal pipeline safety regulations establishing the maximum operating pressure for a hazardous liquid pipeline.²⁷ On April 30, 2007, PHMSA granted TransCanada a special permit that would allow portions of the Keystone Pipeline Project to be operated at a higher maximum

²⁷ 49 CFR 195.106.

operating pressure than would otherwise be required by current federal regulations.²⁸ Specifically, the waiver allows portions of the proposed pipeline to be operated at 80 percent of the minimum yield strength of the pipe, rather than the maximum of 72 percent currently required by federal regulations. Certain portions of the pipeline are not included in the waiver: commercially navigable waterways, high population areas, highway, railroad or road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities or measurement facilities. However, most of the pipeline, and in particular most rural areas located along the pipeline right-of-way, would fall within the scope of the waiver.

PHMSA's exemption from the special permit for sensitive "high consequence areas" indicates that maximum safety is desired for those areas that would suffer the most severe impact from a pipeline leak or spill. However, significant environmental harms would flow from a leak or spill in those rural areas not labeled "high consequence" by PHMSA. Rural areas in the pipeline right-of-way not treated as "high consequence areas" in PHMSA's evaluation include shallow aquifers, prime farmland, wetlands and wildlife habitats located all along the proposed pipeline route through the eastern Dakotas and Nebraska. A catastrophic leak or spill from the pipeline could harm wildlife habitats, irreparably damage valuable farmland or permanently contaminate a rural water system. Notably, this is the first such waiver that PHMSA has granted for this type of hazardous material pipeline, so there is no direct prior comparison for determining adverse consequences. The final EIS should consider how PHMSA's waiver augments these predictable environmental risks and whether such increased level of risk is appropriate or desirable.

The draft EIS does not adequately address the potential adverse impacts of the Keystone Pipeline on historic cultural resources of Native American nations along the proposed pipeline route.

The draft EIS identifies at Table 3.11.3-2 a list of Native American nations who have been contacted by the Department of State regarding possible impacts of the proposed pipeline on historic cultural tribal resources, pursuant to the requirements of 36 CFR 800.2. According to the draft EIS, many of these consultations are still "on-going," and some nations and tribes have not formally responded to communications from the Department of State. Although the proposed pipeline route does not currently cross any lands owned by the various Native American nations and tribes consulted with as a part of this process, federal regulations require a process of formal consultation for any properties of "historic significance" to Native American nations and tribes.²⁹ These same regulations further require that the relevant federal agency "must, except where appropriate to protect confidentiality concerns of affected parties, provide the public with information about an undertaking and its effects on historic properties and seek public comment and input."³⁰

²⁸ Special Permit, U.S. Dept. of Transportation Pipeline and Hazardous Material Safety Administration, Docket No. PHMSA 2006-26617 (April 30, 2007).

²⁹ 36 CFR 800.2(c)(2)(ii).

³⁰ 36 CFR 800.2(d)(2).

To date, the public has been provided with no information about the potential adverse impacts of the Keystone project on cultural resources of Native American nations and tribes along the proposed pipeline route. Indeed, it would be impossible for the Department of State to have done so, because formal consultations with affected Native American nations and tribes were incomplete at the time the draft EIS was published. In order for all affected parties, including members of the general public, to adequately comment in this important issue, it is vital that the Department of State complete the required process of consultation with affected Native American nations and tribes prior to publishing a final EIS. It is also vital that the results of these consultations be made available for public comment, as required by federal regulation. Without gathering this information through a rigorous process of formal consultation and subjecting the findings and conclusions to public comment, the impacts of the Keystone Pipeline on important Native American cultural resources cannot be properly predicted or adequately mitigated by a final EIS.

5. Draft EIS Should Consider Role of Keystone Pipeline in Catalyzing Unnecessary Expansion in Tar Sands as Additional Cumulative Impacts

The proposed Keystone pipeline will also enable further expansion in tar sands development in the Canadian tar sands region in the province of Alberta. As noted earlier in these comments, the Environmental Report submission for a Presidential Permit notes the existing crude oil pipeline export capacity from Canada's tar sands region is insufficient to accommodate the forecasted crude oil supply growth.³¹ Limits on infrastructure limit expansion of tar sands oil extraction, while increased infrastructure for importing and refining tar sands oil, increases the pressure for a high pace of development in the Canadian tar sands. And this expansion in the tar sands only exacerbates the already existing plethora of environmental and social problems in that region.³²

The following additional impacts should be considered as part of the cumulative impacts analysis in State Department's EIS.

Global warming pollution from tar sands oil production is higher even than conventional oil production.

Canada's tar sands are the single largest contributor to global warming pollution emissions growth in Canada.³³ Further, tar sands oil production generates almost triple the global warming pollution as conventional oil production because of the massive amounts of

³¹ Environmental Report, Chapter 1, pg. 1-4 ("...the Keystone Pipeline Project initially will provide 435,000 bpd of incremental export capacity to address this deficiency. With expansion, Keystone could provide up to approximately 600,000 bpd of incremental export capacity. Thus, the addition of the Keystone pipeline will significantly increase the WCSB pipeline export capacity needed to address forecasted supply growth."); *see also* Environmental Report, Chapter 1, pg. 1-3, ("The need for the project is dictated by a number of factors including: (1) Increasing WCSB crude oil supply combined with insufficient export pipeline capacity..."), <http://www.entrix.com/keystone/project/chap1.pdf>.

³² Andrew Nikiforuk, "Canada's Highway to Hell," *OnEarth* (Fall 2007), <http://www.nrdc.org/onearth/07fal/alberta1.asp>.

³³ Woynillowicz, Dan. "Oil Sands Fever: The Environmental Implications of Canada's Oil Sands Rush," p. 19. The Pembina Institute, November, 2005.

energy needed to extract, upgrade, and refine the oil.³⁴ Global warming pollution emissions from tar sands production already totaled 25 megatons in 2003 - more than the global warming pollution emissions from all the cars in Maryland that year.³⁵, ³⁶ Tar sands-related global warming pollution is projected to more than quadruple to between 108 and 126 megatons by 2015.³⁷ As of early 2007, oil companies and government were discussing possibilities for a system for carbon capture and disposal in the tar sands region, but without clear funding and timelines for the actual construction of such a system. Tar sands development is also largely responsible for the recent regional increase in air pollution from nitrogen oxides, sulphur dioxide, volatile organic compounds, and particulate matter.³⁸

Open pit mines and intensive drilling are turning the Boreal Forest into a wasteland.

“Tar sands” is a misleading name for a region that is still mostly undisturbed Boreal, including forests and wetlands. The Boreal is home to many species sensitive to industrial development, such as caribou and lynx. But open pit mining turns this valuable ancient forest into a wasteland with polluted waters. Drilling in the tar sands requires such a complex of wells, roads, and pipes in areas where drilling is taking place, every part of the forest will be within a few hundred yards of an industrial intrusion. Although the companies in the tar sands assert that the land is reclaimed after mining, there has not yet been any mine fully reclaimed.³⁹ Forest, peatlands, and wetlands ecosystems are highly complex, and it is unlikely they will regenerate in areas filled with mine waste.⁴⁰

Toxic waste pollution and water withdrawals threaten delicate wetlands and river ecosystems.

Both mining and drilling operations in the tar sands have severe impacts on water in Alberta. The tar sands region is rich in wetlands in the form of bogs, fens, shallow ponds, shoreline marshes, and river delta systems, such as the Peace-Athabasca Delta just downstream from the tar sands (to the north). The Alberta Chamber of Resources has identified water use as one of the top-four key challenges for mining operations.⁴¹ Mining operations require dredging wetlands taking large amounts of water from the rivers. The ecological integrity of any aquatic ecosystems requires that adequate flows and seasonal variations in flow be maintained. Fish populations such as walleye, goldeye, and long-nose

³⁴ Ibid, p. 22. Information gathered from Canadian Association of Petroleum Producers on conventional oil and for oil sands mining and *in situ* drilling from Pembina research. Actual numbers are 28.6 conventional oil average GHG intensity/barrel of oil as compared to 85.5 oil sands average GHG intensity/barrel of oil. It is just under 3 times as much.

³⁵ Bramley, Matthew, Neabel, Derek, and Dan Woynillowicz. “The Climate Implications of Canada’s Oil Sands Development.” The Pembina Institute, November 29, 2005.

³⁶ Maryland’s emissions from automobiles were 24 MT CO₂ based on gasoline consumption. US Dept of Transportation, Highway Statistics 2003. CO₂ was calculated as 20 lbs per gallon of gasoline consumed.

³⁷ Bramley, Matthew, Neabel, Derek, and Dan Woynillowicz. “The Climate Implications of Canada’s Oil Sands Development,” p. 5. The Pembina Institute, November 29, 2005.

³⁸ Dan Woynillowicz, Pembina Institute, email, May 31, 2006.

³⁹ Canadian Parks and Wilderness Society. “A Response to the Mineable Oil Sands Strategy.” December 14, 2005.

⁴⁰ Ibid.

⁴¹ Alberta Chamber of Resources. “Oil Sands Technology Roadmap – Unlocking the Potential,” p. 21. 2004. http://www.acr-alberta.com/ostr/OSTR_report.pdf.

sucker are vulnerable, particularly when water withdrawals reduce winter habitat in the Athabasca River.⁴² But water allocations for existing, approved, and planned tar sands mining operations are expected to quadruple over allocations for existing projects in 2004.⁴³

In-situ operations that take water from underground aquifers can also harm the area's water supply. The hydrology in this region is a complex network of underground freshwater and saline aquifers, ground waters, and wetlands. The links among these systems are not yet fully understood, nor are the impacts of the water withdrawals and surface land and waters destruction.⁴⁴ One specific concern is that taking water out of underground aquifers could cause surface water to sink – for example, causing a loss of wetlands.⁴⁵

Tar sands mines also require extensive human-made wastewater reservoirs—which the industry calls “tailings ponds”—that pose another potential threat to wildlife and water. Collectively, these pools of waste cover almost 20 square miles, and are so vast that they can be seen from space.⁴⁶ The high concentrations of pollutants such as naphthenic acids in tar sands tailings ponds are acutely toxic to aquatic life.⁴⁷,⁴⁸ To chase off migratory birds, propane cannons go off at random intervals and scarecrows stand guard on floating barrels. Many of the tailings ponds are next to water bodies such as the Athabasca River, and there are concerns about potential leakage from existing tailings ponds and from future “remediated” or buried tailings. Alberta Environment does not regulate naphthenic acids, and future management of these pollutants is fraught with uncertainty.⁴⁹,⁵⁰

Aboriginal communities fear for their health, water, and land.

Aboriginal communities with traditional territories in the Alberta tar sands oil development region see the direct effects of development on their environment, culture, and traditional land uses. The Mikisew Cree First Nation and the Athabasca Chipewyan Nation have expressed concerns about the way Alberta is handling environmental and public health

⁴² Griffiths, Mary, *et al.* “Troubled Waters, Troubling Trends,” p. 69. Pembina Institute, May, 2006.

⁴³ Woynillowicz, Dan. “Oil Sands Fever: The Environmental Implications of Canada’s Oil Sands Rush,” p. 35. The Pembina Institute, November, 2005.

⁴⁴ *Ibid.*, p. 71.

⁴⁵ Griffiths, Mary, *et al.* “Troubled Waters, Troubling Trends,” p. 69. Pembina Institute, May, 2006.

⁴⁶ Woynillowicz, Dan. “Oil Sands Fever: The Environmental Implications of Canada’s Oil Sands Rush,” p. 30. The Pembina Institute, November, 2005.

⁴⁷ Naphthenic acids are a class of organic acids found within crude oils. They are known to be toxic to a range of aquatic organisms. Naphthenic acids are relatively poorly studied (primarily because of their complex nature and their location in hard-to-reach oilfields and tailings) and as a group they co-occur with a diverse range of petroleum hydrocarbons present in tar sands deposits. Barrow, Mark. “Naphthenic Acids.” <http://www2.warwick.ac.uk/fac/sci/chemistry/research/mass-spectrometry/projects/naphthenicacids/> (accessed March 27, 2007).

Univ of Warwick. “Dr. Mark Barrow.” <http://www.warwick.ac.uk/staff/M.P.Barrow/environmental.html>.

⁴⁸ Naturally occurring naphthenic acids in rivers in this region are generally below 1 mg/L, but those concentrations may be as high as 110 mg/L in the tailings ponds. Woynillowicz, Dan. “Oil Sands Fever: The Environmental Implications of Canada’s Oil Sands Rush,” p. 31. The Pembina Institute, November, 2005.

⁴⁹ Woynillowicz, Dan. “Oil Sands Fever: The Environmental Implications of Canada’s Oil Sands Rush,” p. 32. The Pembina Institute, November, 2005.

⁵⁰ Alberta Chamber of Resources. “Oil Sands Technology Roadmap – Unlocking the Potential,” p. 36. 2004. http://www.acr-alberta.com/ostr/OSTR_report.pdf.

issues in the tar sands region, including through pulling out of a regional process set up to deal with cumulative environmental impacts.⁵¹ Specifically, the Mikisew Cree First Nation, which lives with the downstream impacts of tar sands development, has expressed concerns about water pollution, toxic waste management, ecological restoration, water level reductions in rivers and aquifers, decline in wildlife populations such as moose and muskrat, and loss of fish habitat.⁵²

Conclusion

The draft EIS does not adequately address the question of “national interest” and is too narrowly focused inadequately addressing alternatives and cumulative impacts. We look forward to seeing our concerns addressed in the State Department’s EIS.

Sincerely,

Susan Casey-Lefkowitz and Melanie Nakagawa
Natural Resources Defense Council
1200 New York Ave, N.W., Suite 400
Washington, D.C. 20005
Tel: (202) 289-2366
Emails: sclefkowitz@nrdc.org; mnakagawa@nrdc.org

Ed Cable
31992 Highway 11
Elk Point, South Dakota 57025
Save Union County Committee
Save Our Siouxland Coalition,
Citizens Opposed to Oil Pollution
Tel: (712) 899-2372
Email: jake4mail@speednet.com

Carrie La Seur and Jana Linderman
Plains Justice
100 1st St SW
Cedar Rapids, IA 52404
Tel: (319) 362-2120
Emails: claseur@plainsjustice.org; jlinderman@plainsjustice.org

Lynn Wolff and Janie Capp
Dakota Resource Council
PO Box 1095
Dickinson, ND 58602
Tel: (701) 298-8685
Email: lynn@drcinfo.com

⁵¹ CBC News. “First Nation Pulls out of Oilsands Watchdog Group.” March 6, 2007.
<http://www.cbc.ca/canada/edmonton/story/2007/03/06/cema-pullout.html> (accessed March 27, 2007).

⁵² Mikisew Cree First Nation Industry Relations letter to NRDC, June 28, 2006.